

Table A: Section Properties

E-BEAM HD _{TM} SECTION PROPERTIES TABLE													
Design Thickness	Gauge	Gross Properties						Effective Properties					
		F _y	Area	Weight	I _x	S _x	R _x	I _{xe}	S _{xe}	M _{ax}	V _{ax}	(EI) _{ye}	
(in)	(No.)	(ksi)	(in ²)	(lb/ft)	(in ⁴)	(in ³)	(in)	(in ⁴)	(in ³)	(k-in)	(lb)	(k-in ²)	
EB6-600S162-43 HD ¹	0.0451	18	33	0.894	3.04	4.632	1.544	2.276	4.64	1.93	41.70	2832	36682
EB8-600S162-43 HD ¹													70179
EB6-600S162-54 HD ¹	0.0566	16	50	1.112	3.78	5.720	1.906	2.268	5.72	2.38	52.93	5478	45666
EB8-600S162-54 HD ¹													87026
EBD-600S162-68 HD ²	0.0713	14	50	1.386	4.72	7.050	2.350	2.255	7.06	2.36	53.58	8694	-
EB6-800S162-43 HD ¹	0.0451	18	33	1.074	3.66	9.266	2.316	2.937	9.00	2.55	50.35	2102	40563
EB8-800S162-43 HD ¹													77102
EB6-800S162-54 HD ¹	0.0566	16	50	1.340	4.56	11.472	2.868	2.926	11.40	3.33	65.90	4182	50482
EB8-800S162-54 HD ¹													95588
EBD-800S162-68 HD ²	0.0713	14	50	1.672	5.68	14.178	3.544	2.912	14.18	3.48	68.64	8442	-
EBD-1000S162-43 HD ¹	0.0451	18	33	1.254	4.26	16.050	3.210	3.578	15.04	3.25	64.35	1672	-
EBD-1000S162-54 HD ¹	0.0566	16	50	1.566	5.32	19.900	3.980	3.565	19.26	4.30	85.05	3322	-
EBD-1000S162-68 HD ²	0.0713	14	50	1.956	6.66	24.650	4.930	3.550	24.52	4.56	89.96	6690	-
EBD-1200S162-54 HD ¹	0.0566	16	50	1.792	6.10	31.460	5.244	4.190	29.48	5.28	104.20	2754	-
EBD-1200S162-68 HD ²	0.0713	14	50	2.242	7.62	39.036	6.506	4.173	37.92	5.64	111.32	5542	-
EBD-1400S162-54 HD ²	0.0566	16	50	2.018	6.86	46.604	6.658	4.806	42.20	5.00	98.64	2354	-
EBD-1400S162-68 HD ²	0.0713	14	50	2.526	8.60	57.904	8.272	4.788	54.72	6.72	132.66	4730	-

"D" is the wall thickness. See typical nomenclature

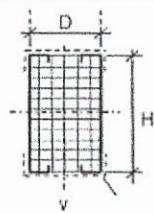
Notes:

- Based on direct testing in accordance with AISI S911-08 and the AISI S100-2007 specification, an increase in effective strong axis section modulus and effective strong axis moment of approximately 25% has been applied to 6", 8", 10", and 12" deep sections with thicknesses of 43 mil and 54 mil.
- Section properties are for two stud shapes per the SSMA Technical Catalog and have not been increased.
- Typically, for out-of-plane (weak axis) loading, top and bottom tracks would be added to the E-Beam HD by the design engineer. However, the foam core does provide a limited amount of composite action of the E-Beam section alone. The weak axis capacity of the E-Beam HD by itself is controlled by deflection. The effective stiffness in this direction, (EI)_{ye}, corresponds to a deflection ratio of L/360 and is based on testing for the 6" E-Beam HD.
- User should check end reaction for web crippling.
- Bending capacities are based on the assumption that the compression flange is adequately laterally braced on both sides.
- Allowable Moment and Shear Values are calculated assuming a negligible axial load. Load bearing jamb studs are to be designed for combined axial and bending loads by a qualified professional.
- Strength increase due to cold work of forming has been incorporated per AISI 2007 Specification A7.2.
- The effective Moment of Inertia for deflection has been calculated using Procedure 1 of the AISI S100-2007 Specification for serviceability determination.
- The distortional buckling limit state is not considered in this table. Consideration of distortional buckling may result in lower strengths when restraint against distortional buckling is not provided.
- If punch-outs are used in members, values may be smaller than those listed above and shall be per the AISI S100-2007 Specification.

E-BEAM HD™ NOMENCLATURE

ENVIRO-BEAM™

A PRODUCT OF EVOLUTON 1 LLC
www.envirobeam.com 206-455-1978



D (Wall Thickness)

H (Height)

EB 6 - 800S162-54 HD

Flange Width Mil / ga.

SSMA Section Designation

Example E-Beam HD Size Designation

Top and bottom tracks are to be specified as required for design

The designer should specify the wall thickness and C-stud shapes to be used in the E-Beam HD

The designer is responsible for determining the adequacy of the sections for their intended use.

ENVIRO Beam Header Members for 6 inch Walls: E-BEAM HD™ TABLE 1 - ALLOWABLE UNIFORM LOADS, lbs/ft^{1,2,3,4,5,6,9,10.}

MEMBER PROPERTIES					HEADER SPANS, FT: Deflection Limit equals Span/ 360																											
Member Designation	Wt. lbs/ft	Ma k-in	I _{xe} in ⁴	V _a kips	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30					
EB6-600S162-043 HD ⁷	3.04	36.15	4.63	2.83	371	272	197	146	111	86	68	54	44	35	29	24																
600T150-43 T&B ⁹	2.76	18.72	5.02	2.75	195	154	125	103	87	74	64	55	49	43	38	32	27															
EB6-600S162-054 HD ⁷	3.78	64.75	5.72	5.65	481	336	243	181	137	107	84	67	54	44	36	29	24	20														
600T150-54 (50ksi) T&B ⁹	3.46	36.48	6.35	5.46	380	300	243	201	161	126	101	82	68	56	48	40	35	23	20													
EB6-600S162-068 HD ⁷	4.72	71.38	7.05	10.70	593	414	299	222	169	131	103	82	66	54	44	36	29	24	20													
600T150-68 (50ksi) T&B ⁹	4.36	53.36	6.32	10.70	540	379	276	208	160	126	101	82	67	56	47	40	35	30	26	23	20											
EB6-800S162-043 HD ⁷	3.66	45.83	9.00	2.10	471	371	299	246	206	173	137	110	90	74	61	51	43	36	31	26	22											
600T150-43 T&B ⁹	2.76	18.72	5.16	2.75	195	154	125	103	87	74	64	55	49	43	39	33	28															
EB6-800S162-054 HD ⁷	4.56	82.03	11.20	4.18	846	663	481	360	275	215	170	137	111	92	76	63	53	45	38	32	27	23	20									
600T150-54 (50ksi) T&B ⁹	3.46	36.48	6.51	5.46	380	300	243	201	165	130	104	84	69	58	49	41	36	23	20													
EB6-800S162-068 HD ⁷	5.68	90.22	14.14	8.44	930	733	591	454	348	271	215	173	141	116	96	80	67	57	48	41	35	30	25	21								
600T150-68 (50ksi) T&B ⁹	4.36	53.36	6.32	10.70	540	379	276	208	160	126	101	82	67	56	47	40	35	30	26	23	20											
EB6-1000S162-043 HD ⁷	4.26	56.23	15.05	1.67	407	365	327	297	253	215	184	160	139	123	106	89	75	61	55	47	41	35	30	26	23	20						
600T150-43 T&B ⁹	2.76	18.72	3.78	2.75	195	154	125	103	87	74	60	49	40	34	28	24	21															
EB6-1000S162-054 HD ⁷	5.32	100.93	18.78	3.32	816	729	656	547	458	365	290	234	192	158	132	111	94	80	68	59	51	44	38	33	29	25	22					
600T150-54 (50ksi) T&B ⁹	3.46	36.48	4.80	5.46	380	288	210	158	121	95	76	62	51	43	36	31	26	23	20													
EB6-1000S162-068 HD ⁷	6.66	112.70	23.96	6.89	1163	917	740	610	511	434	371	299	245	202	169	142	120	102	87	75	65	56	49	42	37	32	28					
600T150-68 (50ksi) T&B ⁹	4.36	53.36	6.32	10.70	540	379	276	208	160	126	101	82	67	56	47	40	35	30	26	23	20											
EB6-1200S162-054 HD ⁷	6.10	116.88	28.60	2.75	673	602	541	491	449	414	384	337	295	245	205	173	147	125	108	93	81	70	62	54	47	42	37					
600T150-54 (50ksi) T&B ⁹	3.46	36.48	4.80	5.46	380	288	210	158	121	95	76	62	51	43	36	31	26	23	20													
EB6-1200S162-068 HD ⁷	7.62	132.28	36.78	5.54	1366	1077	870	717	600	510	438	380	332	293	260	222	189	162	139	120	104	91	79	70	61	54	48					
600T150-68 (50ksi) T&B ⁹	4.36	53.36	6.32	10.70	540	379	276	208	160	126	101	82	67	56	47	40	35	30	26	23	20											
EB6-1400S162-054 HD ⁷	6.86	104.26	40.73	2.35	571	513	460	418	382	352	326	299	261	230	204	182	163	147	133	121	110	101	91	80	71	63	56					
600T150-54 (50ksi) T&B ⁹	3.46	36.48	4.80	5.46	380	288	210	158	121	95	76	62	51	43	36	31	26	23	20													
EB6-1400S162-068 HD ⁷	8.60	149.12	52.75	4.73	1161	1038	933	809	677	575	494	429	375	331	294	262	236	212	192	175	154	135	118	104	92	82	72					
600T150-68 (50ksi) T&B ⁹	4.36	53.36	6.32	10.70	540	379	276	208	160	126	101	82	67	56	47	40	35	30	26	23	20											

Notes:

- For additional notes see: E-BEAM HD™ SECTION PROPERTIES TABLE dated 11/28/2012.
- Values shown bold and italicize indicate calculations are based on properties from table referenced in note 1.
- All other values are based on properties from the 2012 SSMA Product Technical Guide Section Properties.
- The selfweight of Member has been accounted for in Allowable Vertical Uniform Loads.
- Deflection is limited to L/360 (Span/360) for both vertical and horizontal directions.

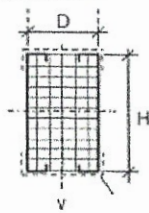
- Blank spaces indicate Allowable Uniform Loads are less than 20 lbs/ft
- This row indicated the Allowable Vertical Uniform Loads.
- This row indicates the Allowable Horizontal Uniform Loads.
- Tracks T&B (Top and Bottom) are by others. Connect tracks to E-Beams with minimum two rows #8 screws @12"o.c..
- Testing limitations limit added strengths to 20 feet or less.

E-BEAM HD™ NOMENCLATURE

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D (Wall Thickness)

H (Height)

EB 6 - 800S162-54 HD

Flange Width Mil / ga.

SSMA Section Designation

Example E-Beam HD Size Designation

Top and bottom tracks are to be specified as required for design

The designer should specify the wall thickness and C-stud shapes to be used in the E-Beam HD

The designer is responsible for determining the adequacy of the sections for their intended use.

ENVIRO Beam Header Members for 8 inch Walls: E-BEAM HD™ TABLE 2 - ALLOWABLE UNIFORM LOADS, lbs/ft^{1,2,3,4,5,6,9,10}.

MEMBER PROPERTIES					HEADER SPANS, FT: Deflection Limit equals Span/ 360																											
Member Designation	Wt. lbs/ft	Ma k-in	Ixe in ⁴	Va kips	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30					
EB8-800S162-043 HD ⁷	3.04	36.15	4.63	2.83	370	271	196	146	111	86	67	54	43	35	28	23																
800T150-43 T&B ⁸	3.38	25.90	9.76	2.06	270	213	173	143	120	102	88	77	67	60	53	48	43	35	30	27	23	21										
EB8-800S162-054 HD ⁷	3.78	64.75	5.72	5.65	480	335	242	180	137	106	83	66	53	43	35	28	23															
800T150-54 (50ksi) T&B ⁸	4.24	50.54	12.33	4.08	526	416	337	278	234	199	172	150	132	110	92	79	67	44	39	34	30	26	23	21	19	17	15					
EB8-600S162-068 HD ⁷	4.72	71.38	7.05	10.70	592	413	298	221	168	130	102	81	65	53	43	35	28	23														
800T150-68 (50ksi) T&B ⁸	5.34	75.16	12.72	8.17	783	619	501	414	322	253	203	165	136	113	95	81	69	60	52	46	40	36	32	28	25	23	21					
EB8-800S162-043 HD ⁷	3.66	45.83	9.00	2.10	470	370	298	245	205	172	136	110	89	73	60	50	42	35	30	25	21											
800T150-43 T&B ⁸	3.38	25.90	9.99	2.06	270	213	173	143	120	102	88	77	67	60	53	48	43	35	30	27	23	21	18	16	15	13	12					
EB8-800S162-054 HD ⁷	4.56	82.03	11.20	4.18	846	663	481	369	274	214	170	136	111	91	75	63	52	44	37	31	27	23										
800T150-54 (50ksi) T&B ⁸	4.24	50.54	12.62	4.08	526	416	337	278	234	199	172	150	132	112	95	80	69	44	39	34	30	26	23	21								
EB8-800S162-068 HD ⁷	5.68	90.22	14.14	8.44	929	732	590	453	347	270	214	172	140	115	95	79	66	56	47	40	34	29	24	20								
800T150-68 (50ksi) T&B ⁸	5.34	75.16	12.72	8.17	783	619	501	414	322	253	203	165	136	113	95	81	69	60	52	46	40	36	32	28	25	23	21					
EB8-1000S162-043 HD ⁷	4.26	56.23	15.05	1.67	406	364	327	296	253	214	184	159	139	122	105	88	75	60	54	46	40	34	30	26	22							
800T150-43 T&B ⁸	3.38	25.90	7.38	2.06	270	213	173	143	120	102	88	77	67	60	53	47	40	35	30	27	23	21										
EB8-1000S162-054 HD ⁷	5.32	100.93	18.78	3.32	816	729	655	547	458	364	290	234	191	157	131	110	93	79	68	58	50	43	37	32	28	24	21					
800T150-54 (50ksi) T&B ⁸	4.24	50.54	9.38	4.08	526	416	337	278	234	187	149	122	100	83	70	60	51	44	39	34	30	26	23	21								
EB8-1000S162-068 HD ⁷	6.66	112.70	23.96	6.69	1162	916	739	609	510	433	370	298	244	201	168	141	119	101	86	74	64	55	48	41	36	31	27					
800T150-68 (50ksi) T&B ⁸	5.34	75.16	12.72	8.17	783	619	501	414	322	253	203	165	136	113	95	81	69	60	52	46	40	36	32	28	25	23	21					
EB8-1200S162-054 HD ⁷	6.10	116.88	28.60	2.75	672	602	540	490	449	413	383	336	294	244	204	172	146	125	107	92	80	70	61	53	47	41	36					
800T150-54 (50ksi) T&B ⁸	4.24	50.54	9.38	4.08	526	416	337	278	234	187	149	122	100	83	70	60	51	44	39	34	30	26	23	21								
EB8-1200S162-068 HD ⁷	7.62	132.28	36.78	5.54	1365	1076	869	716	599	509	437	379	332	292	259	221	188	161	138	119	103	90	78	69	60	53	47					
800T150-68 (50ksi) T&B ⁸	5.34	75.16	12.72	8.17	783	619	501	414	322	253	203	165	136	113	95	81	69	60	52	46	40	36	32	28	25	23	21					
EB8-1400S162-054 HD ⁷	6.86	104.26	40.73	2.35	571	512	460	417	381	351	325	298	260	229	203	181	163	147	133	120	110	100	90	79	70	62	55					
800T150-54 (50ksi) T&B ⁸	4.24	50.54	9.38	4.08	526	416	337	278	234	187	149	122	100	83	70	60	51	44	39	34	30	26	23	21								
EB8-1400S162-068 HD ⁷	8.60	149.12	52.75	4.73	1160	1037	932	808	676	574	493	428	374	330	293	261	235	211	191	174	153	134	117	103	91	81	71					
800T150-68 (50ksi) T&B ⁸	5.34	75.16	12.72	8.17	783	619	501	414	322	253	203	165	136	113	95	81	69	60	52	46	40	36	32	28	25	23	21					

Notes:

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