

Allowable Batten Loads

BATTEN	WT/FT	LOAD TYPE	CRITERIA	SPAN BETWEEN LIFT LINES								
				8'	9'	10'	11'	12'	13'	14'	15'	
1" Sched. 40	1.68	Uniform	Strength	27	21	17	14	11	9	8	7	lb/ft
		Uniform	Deflection	20	13	9	7	5	4	3	2	lb/ft
		Point	Strength	93	82	74	67	62	57	53	49	lb
		Point	Deflection	56	44	36	29	25	21	18	16	lb
1 1/4" Sched. 40	2.27	Uniform	Strength	48	37	30	24	20	17	14	12	lb/ft
		Uniform	Deflection	45	31	22	16	12	9	7	5	lb/ft
		Point	Strength	160	142	128	116	107	98	91	85	lb
		Point	Deflection	124	98	79	65	55	47	40	35	lb
1 1/4" Sched. 80	3	Uniform	Strength	61	48	38	31	26	21	18	15	lb/ft
		Uniform	Deflection	56	39	28	20	15	11	9	6	lb/ft
		Point	Strength	206	183	165	150	137	127	118	110	lb
		Point	Deflection	155	123	99	82	69	59	51	44	lb
1 1/2" Sched. 40	2.72	Uniform	Strength	66	52	41	34	28	23	20	17	lb/ft
		Uniform	Deflection	72	50	36	26	20	15	12	9	lb/ft
		Point	Strength	221	196	176	160	147	136	126	118	lb
		Point	Deflection	197	155	126	104	87	74	64	56	lb
1 1/2" Sched. 80	3.63	Uniform	Strength	86	67	54	44	36	30	26	22	lb/ft
		Uniform	Deflection	91	63	45	33	25	19	15	11	lb/ft
		Point	Strength	288	256	230	209	192	177	164	153	lb
		Point	Deflection	250	197	160	132	111	95	82	71	lb
2" Sched. 40	3.66	Uniform	Strength	113	89	71	58	48	41	34	30	lb/ft
		Uniform	Deflection	156	109	78	58	44	34	27	21	lb/ft
		Point	Strength	374	332	299	272	249	230	213	199	lb
		Point	Deflection	421	333	269	223	187	159	137	120	lb

- All loads listed at the allowable static loads based on the requirements on ANSI E1.6-1 Powered Hoist Systems section 6.6.
- Characteristic load assumed to be 125% of the static load.
- Batten strength is limited so that the load imposed by the characteristic load does not exceed 75% of the allowable strength per AISC 360-05 (Specification for Steel Buildings - Allowable Stress Design).
- Batten deflection is limited so that the calculated deflection due to the characteristic load not exceed L/180.
- Battens assumed to be continuous over three spans.
- Battens extend beyond last lift line by 3 feet or less.
- ANSI E1.4 (Manual Counterweight Rigging Systems) requires battens to support 30 lbf/ft or 100 lb point load while limiting deflection to L/180. Spans highlighted in green meet this criteria.