Deflection Values of Schedule 40 Aluminum Pipe

Conditions	Nominal Pipe Size - in	10	15	20	25	30	35	40	45	50
Bare	1	0.15	0.76	2.39						
	1 1/4	0.09	0.46	1.45	3.55					
	1 1/2	0.07	0.35	1.09	2.67					
	2	0.04	0.21	0.68	1.65	3.46				
	2 1/2	0.03	0.15	0.47	1.15	2.38	4.22			
	3	0.02	0.10	0.31	0.76	1.58	2.93	5.00		
	3 1/2	0.02	0.08	0.24	0.58	1.20	2.21	3.78	6.07	
	4	0.01	0.06	0.19	0.45	0.94	1.74	2.96	4.76	7.26
	5	0.01	0.04	0.12	0.29	0.61	1.12	1.91	3.08	4.69
	6	0.01	0.03	0.08	0.20	0.42	0.79	1.34	2.15	3.28
1/2 in. ice	1	0.43	2.20	6.96						
	1 1/4	0.24	1.23	3.89	9.62					
	1 1/2	0.17	0.88	2.80	6.83					
	2	0.10	0.52	1.63	4.00	8.36				
	2 1/2	0.06	0.30	0.96	2.30	4.89	9.05			
	3	0.04	0.19	0.60	1.47	3.06	5.72	9.75		
	3 1/2	0.03	0.14	0.44	1.08	2.24	4.16	7.16	11.46	
	4	0.02	0.11	0.34	0.83	1.71	3.17	5.42	8.73	13.31
	5	0.01	0.07	0.21	0.51	1.05	1.95	3.34	5.37	8.19
	6	0.01	0.04	0.14	0.34	0.71	1.32	2.25	3.60	5.49
1/2 in. ice 4 lb Wind Plus Constant	1	0.56	2.85	9.02						
	1 1/4	0.30	1.53	4.84	11.81					
	1 1/2	0.21	1.08	3.40	8.30					
	2	0.12	0.61	1.93	4.70	9.75				
	2 1/2	0.07	0.34	1.09	2.65	5.49	10.17			
	3	0.04	0.21	0.67	1.64	3.40	6.30	10.76		
	3 1/2	0.03	0.15	0.49	1.19	2.47	4.58	7.81	12.51	
	4	0.02	0.12	0.37	0.90	1.86	3.45	5.89	9.43	14.38
	5	0.01	0.07	0.22	0.55	1.13	2.10	3.57	5.72	8.72
	6	0.01	0.05	0.15	0.36	0.75	1.39	2.37	3.80	5.79
1 in. ice	1	0.88	4.44	14.03						
	1 1/4	0.47	2.37	7.47	18.49					
	1 1/2	0.34	1.69	5.35	13.07					
	2	0.18	0.92	2.91	7.09	14.95				
	2 1/2	0.10	0.50	1.59	3.87	8.03	15.06			
	3	0.06	0.31	0.97	2.37	4.91	9.20	15.69		
	3 1/2	0.04	0.22	0.70	1.70	3.53	6.53	11.14	18.06	
	4	0.03	0.16	0.52	1.27	2.63	4.88	8.32	13.49	20.56
	5	0.02	0.10	0.31	0.76	1.57	2.91	4.97	8.05	11.74
	6	0.01	0.06	0.21	0.50	1.04	1.92	3.28	5.26	8.02

Notes:

1. These are maximum deflection values in inches for a simple beam with uniformly distributed load. For beams fixed at both ends, the deflection will be one-fifth of the values given.
2. Deflection d1 for any other span L1 may be obtained from the relation: $d1 = d\ L1^4/L^4$

Deflection Values of Schedule 80 Aluminum Pipe

Conditions	Nominal Pipe Size - In	10	15	20	25	30	35	40	45	50
Bare	1	0.16	0.81	2.56						
	1 1/4	0.10	0.49	1.54	3.77					
	1 1/2	0.07	0.36	1.15	2.82					
	2	0.04	0.23	0.72	1.76	3.65	6.76			
	2 1/2	0.03	0.16	0.49	1.21	2.50	4.64	7.92		
	3	0.02	0.10	0.33	0.80	1.66	3.08	5.25	8.40	
	3 1/2	0.01	0.08	0.25	0.60	1.25	2.32	3.97	6.36	9.69
	4	0.01	0.06	0.19	0.47	0.98	1.82	3.11	4.98	7.58
	5	0.01	0.04	0.12	0.31	0.63	1.17	2.01	3.21	4.89
	6	0.01	0.03	0.09	0.21	0.44	0.82	1.40	2.25	3.43
1/2 in. ice	1	0.40	2.01	6.34						
	1 1/4	0.22	1.11	3.51	8.65					
	1 1/2	0.16	0.79	2.51	6.12					
	2	0.09	0.46	1.45	3.54	7.40	13.72			
	2 1/2	0.05	0.28	0.88	2.15	4.46	8.33	14.20		
	3	0.03	0.17	0.55	1.35	2.80	5.23	8.93	14.30	
	3 1/2	0.02	0.13	0.40	0.99	2.05	3.80	6.50	10.47	15.96
	4	0.02	0.10	0.31	0.75	1.56	2.89	4.95	7.96	12.14
	5	0.01	0.06	0.20	0.49	1.01	1.88	3.20	5.13	7.81
	6	0.01	0.04	0.13	0.32	0.67	1.24	2.11	3.38	5.15
1/2 in. ice 4 lb Wind Plus Constant	1	0.50	2.53	7.99						
	1 1/4	0.27	1.34	4.24	10.36					
	1 1/2	0.94	2.97	7.24						
	2	0.10	0.53	1.66	4.06	8.42	15.60			
	2 1/2	0.06	0.31	0.98	2.39	4.95	9.17	15.65		
	3	0.04	0.19	0.60	1.47	3.06	5.66			
	3 1/2	0.03	0.14	0.44	1.07	2.21	4.10	7.00	11.21	17.08
	4	0.02	0.10	0.33	0.81	1.67	3.09	5.28	8.45	12.88
	5	0.01	0.06	0.20	0.49	1.01	1.88	3.20	5.13	7.81
	6	0.01	0.04	0.13	0.32	0.67	1.24	2.11	3.38	5.15
1 in. ice	1	0.76	3.86	12.21						
	1 1/4	0.40	2.02	6.39	15.80					
	1 1/2	0.28	1.40	4.42	10.79					
	2	0.15	0.77	2.43	5.94	12.46	23.09			
	2 1/2	0.09	0.44	1.38	3.37	6.99	13.10	22.34		
	3	0.05	0.26	0.84	2.04	4.24	7.93	13.53	21.67	
	3 1/2	0.04	0.19	0.60	1.46	3.03	5.61	9.60	15.52	23.65
	4	0.03	0.14	0.45	1.09	2.26	4.19	7.16	11.54	17.59
	5	0.02	0.08	0.26	0.65	1.34	2.48	4.25	6.85	10.44
	6	0.01	0.05	0.17	0.42	0.87	1.61	2.75	4.41	6.72

Notes:

1. These are maximum deflection values in inches for a simple beam with uniformly distributed load. For beams fixed at both ends, the deflection will be one-fifth of the values given.
2. Deflection d1 for any other span L1 may be obtained from the relation: $d1=d\ L1^4/L^4$