

Southwest Fireproofing Type 5 GP, 5 MD, 7 GP and 7 HD

N791 - Restrained and Unrestrained Beam Ratings

D949 - Unrestrained Beam Ratings only

Minimum Thickness Required on Beam for Size Indictaed, in.

Lightweight Concrete

Unrestrained Beam Rating					Member W/D		Restrained Beam Rating*				
1 Hr	1.5 Hr	2 Hr	3 Hr	4 Hr			1 Hr	1.5 Hr	2 Hr	3 Hr	4 Hr
0.42	0.63	0.91	1.26	1.82	W4x13	0.65	0.42	0.42	0.63	1.05	1.40
0.42	0.63	0.91	1.26	1.82	W5x16	0.65	0.42	0.42	0.63	1.05	1.40
0.39	0.58	0.84	1.16	1.67	W5x19	0.76	0.39	0.39	0.58	0.97	1.29
0.53	0.80	1.15	1.59	2.30	W6x9	0.39	0.53	0.53	0.80	1.33	1.77
0.47	0.71	1.02	1.42	2.05	W6x12	0.51	0.47	0.47	0.71	1.18	1.58
0.42	0.63	0.90	1.25	1.81	W6x16	0.66	0.42	0.42	0.63	1.04	1.39
0.41	0.62	0.90	1.24	1.79	W6x20	0.67	0.41	0.41	0.62	1.03	1.38
0.38	0.55	0.80	1.11	1.60	W6x26	0.82	0.38	0.38	0.55	0.92	1.23
0.54	0.81	1.17	1.62	2.35	W8x10	0.37	0.54	0.54	0.81	1.35	1.80
0.49	0.74	1.06	1.47	2.13	W8x13	0.47	0.49	0.49	0.74	1.23	1.64
0.46	0.69	1.00	1.38	2.00	W8x15	0.54	0.46	0.46	0.69	1.15	1.54
0.45	0.67	0.97	1.35	1.94	W8x18	0.57	0.45	0.45	0.67	1.12	1.50
0.42	0.63	0.90	1.25	1.81	W8x21	0.66	0.42	0.42	0.63	1.04	1.39
0.41	0.61	0.88	1.22	1.76	W8x24	0.69	0.41	0.41	0.61	1.02	1.36
0.38	0.56	0.81	1.13	1.63	W8x28	0.80	0.38	0.38	0.56	0.94	1.25
0.38	0.57	0.82	1.13	1.64	W8x31	0.79	0.38	0.38	0.57	0.94	1.26
0.38	0.53	0.77	1.06	1.54	W8x35	0.88	0.38	0.38	0.53	0.89	1.18
0.38	0.49	0.71	0.98	1.42	W8x40	1.00	0.38	0.38	0.49	0.82	1.09
0.38	0.44	0.64	0.88	1.28	W8x48	1.18	0.38	0.38	0.44	0.74	0.98
0.38	0.39	0.57	0.78	1.13	W8x58	1.41	0.38	0.38	0.39	0.65	0.87
0.38	0.38	0.51	0.71	1.03	W8x67	1.61	0.38	0.38	0.38	0.59	0.79
0.54	0.80	1.16	1.61	2.32	W10x12	0.38	0.54	0.54	0.80	1.34	1.79
0.49	0.73	1.05	1.46	2.11	W10x15	0.48	0.49	0.49	0.73	1.22	1.62
0.46	0.69	1.00	1.38	2.00	W10x17	0.54	0.46	0.46	0.69	1.15	1.54
0.44	0.66	0.96	1.32	1.91	W10x19	0.59	0.44	0.44	0.66	1.10	1.47
0.44	0.66	0.96	1.32	1.91	W10x22	0.59	0.44	0.44	0.66	1.10	1.47
0.41	0.61	0.88	1.22	1.76	W10x26	0.69	0.41	0.41	0.61	1.02	1.36
0.38	0.57	0.82	1.13	1.64	W10x30	0.79	0.38	0.38	0.57	0.94	1.26
0.38	0.57	0.83	1.15	1.66	W10x33	0.77	0.38	0.38	0.57	0.96	1.28
0.38	0.53	0.76	1.05	1.52	W10x39	0.90	0.38	0.38	0.53	0.88	1.17
0.38	0.48	0.70	0.97	1.40	W10x46	1.03	0.38	0.38	0.48	0.81	1.07
0.38	0.50	0.72	0.99	1.43	W10x49	0.99	0.38	0.38	0.50	0.83	1.10
0.38	0.47	0.67	0.93	1.35	W10x54	1.09	0.38	0.38	0.47	0.78	1.04
0.38	0.44	0.63	0.88	1.26	W10x60	1.20	0.38	0.38	0.44	0.73	0.97
0.38	0.40	0.58	0.80	1.16	W10x68	1.36	0.38	0.38	0.40	0.67	0.89
0.38	0.38	0.54	0.74	1.07	W10x77	1.52	0.38	0.38	0.38	0.62	0.83
0.38	0.38	0.49	0.68	0.98	W10x88	1.72	0.38	0.38	0.38	0.57	0.75
0.38	0.38	0.45	0.62	0.90	W10x100	1.93	0.38	0.38	0.38	0.52	0.69
0.38	0.38	0.42	0.57	0.83	W10x112	2.14	0.38	0.38	0.38	0.48	0.64
0.53	0.79	1.14	1.58	2.28	W12x14	0.40	0.53	0.53	0.79	1.31	1.75
0.50	0.75	1.08	1.50	2.17	W12x16	0.45	0.50	0.50	0.75	1.25	1.67
0.46	0.70	1.01	1.39	2.01	W12x19	0.53	0.46	0.46	0.70	1.16	1.55
0.43	0.65	0.94	1.30	1.88	W12x22	0.61	0.43	0.43	0.65	1.08	1.45
0.44	0.66	0.95	1.31	1.90	W12x26	0.60	0.44	0.44	0.66	1.09	1.46
0.41	0.61	0.88	1.22	1.76	W12x30	0.69	0.41	0.41	0.61	1.02	1.36

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Lightweight Concrete

Unrestrained Beam Rating

Restrained Beam Rating*

Unrestrained Beam Rating					Member W/D		Restrained Beam Rating*				
1 Hr	1.5 Hr	2 Hr	3 Hr	4 Hr			1 Hr	1.5 Hr	2 Hr	3 Hr	4 Hr
0.38	0.57	0.82	1.13	1.64	W12x35	0.79	0.38	0.38	0.57	0.94	1.26
0.38	0.54	0.78	1.09	1.57	W12x40	0.85	0.38	0.38	0.54	0.91	1.21
0.38	0.51	0.73	1.02	1.47	W12x45	0.95	0.38	0.38	0.51	0.85	1.13
0.38	0.48	0.69	0.96	1.39	W12x50	1.04	0.38	0.38	0.48	0.80	1.07
0.38	0.50	0.72	0.99	1.43	W12x53	0.99	0.38	0.38	0.50	0.83	1.10
0.38	0.48	0.69	0.96	1.39	W12x54	1.04	0.38	0.38	0.48	0.80	1.07
0.38	0.47	0.68	0.94	1.35	W12x58	1.08	0.38	0.38	0.47	0.78	1.04
0.38	0.47	0.67	0.93	1.35	W12x65	1.09	0.38	0.38	0.47	0.78	1.04
0.38	0.44	0.63	0.88	1.26	W12x72	1.20	0.38	0.38	0.44	0.73	0.97
0.38	0.41	0.59	0.82	1.18	W12x79	1.32	0.38	0.38	0.41	0.68	0.91
0.38	0.39	0.56	0.77	1.12	W12x87	1.44	0.38	0.38	0.39	0.64	0.86
0.38	0.38	0.52	0.73	1.05	W12x96	1.57	0.38	0.38	0.38	0.60	0.81
0.38	0.38	0.49	0.68	0.98	W12x106	1.73	0.38	0.38	0.38	0.56	0.75
0.38	0.38	0.45	0.62	0.90	W12x120	1.94	0.38	0.38	0.38	0.52	0.69
0.38	0.38	0.41	0.57	0.82	W12x136	2.17	0.38	0.38	0.38	0.47	0.63
0.38	0.38	0.38	0.53	0.76	W12x152	2.40	0.38	0.38	0.38	0.44	0.58
0.38	0.38	0.38	0.48	0.70	W12x170	2.66	0.38	0.38	0.38	0.40	0.54
0.38	0.38	0.38	0.45	0.64	W12x190	2.93	0.38	0.38	0.38	0.38	0.50
0.38	0.38	0.38	0.41	0.60	W12x210	3.21	0.38	0.38	0.38	0.38	0.46
0.38	0.38	0.38	0.39	0.56	W12x230	3.47	0.38	0.38	0.38	0.38	0.43
0.38	0.38	0.38	0.38	0.52	W12x262	3.76	0.38	0.38	0.38	0.38	0.40
0.38	0.38	0.38	0.38	0.48	W12x279	4.10	0.38	0.38	0.38	0.38	0.38
0.38	0.38	0.38	0.38	0.45	W12x305	4.41	0.38	0.38	0.38	0.38	0.38
0.38	0.38	0.38	0.38	0.42	W12x336	4.78	0.38	0.38	0.38	0.38	0.38
0.47	0.70	1.02	1.41	2.03	W14x22	0.52	0.47	0.47	0.70	1.17	1.56
0.43	0.65	0.94	1.30	1.88	W14x26	0.61	0.43	0.43	0.65	1.08	1.45
0.43	0.64	0.92	1.28	1.85	W14x30	0.63	0.43	0.43	0.64	1.07	1.42
0.40	0.60	0.87	1.20	1.74	W14x34	0.71	0.40	0.40	0.60	1.00	1.34
0.38	0.57	0.82	1.13	1.64	W14x38	0.79	0.38	0.38	0.57	0.94	1.26
0.38	0.54	0.78	1.09	1.57	W14x43	0.85	0.38	0.38	0.54	0.91	1.21
0.38	0.51	0.74	1.02	1.48	W14x48	0.94	0.38	0.38	0.51	0.85	1.14
0.38	0.48	0.70	0.97	1.40	W14x53	1.03	0.38	0.38	0.48	0.81	1.07
0.38	0.47	0.68	0.94	1.36	W14x61	1.07	0.38	0.38	0.47	0.79	1.05
0.38	0.44	0.64	0.88	1.27	W14x68	1.19	0.38	0.38	0.44	0.73	0.98
0.38	0.42	0.61	0.84	1.21	W14x74	1.28	0.38	0.38	0.42	0.70	0.93
0.38	0.39	0.57	0.78	1.13	W14x82	1.41	0.38	0.38	0.39	0.65	0.87
0.38	0.42	0.61	0.84	1.22	W14x90	1.27	0.38	0.38	0.42	0.70	0.94
0.38	0.40	0.57	0.79	1.14	W14x99	1.39	0.38	0.38	0.40	0.66	0.88
0.38	0.38	0.53	0.74	1.07	W14x109	1.53	0.38	0.38	0.38	0.62	0.82
0.38	0.38	0.50	0.69	1.00	W14x120	1.67	0.38	0.38	0.38	0.58	0.77
0.38	0.38	0.47	0.65	0.94	W14x132	1.83	0.38	0.38	0.38	0.54	0.72
0.38	0.38	0.45	0.62	0.90	W14x145	1.94	0.38	0.38	0.38	0.52	0.69
0.38	0.38	0.42	0.58	0.84	W14x159	2.11	0.38	0.38	0.38	0.48	0.65
0.38	0.38	0.40	0.55	0.80	W14x176	2.25	0.38	0.38	0.38	0.46	0.61
0.38	0.38	0.39	0.54	0.78	W14x193	2.32	0.38	0.38	0.38	0.45	0.60

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Unrestrained Beam Rating					Member W/D		Restrained Beam Rating*				
1 Hr	1.5 Hr	2 Hr	3 Hr	4 Hr			1 Hr	1.5 Hr	2 Hr	3 Hr	4 Hr
0.38	0.38	0.38	0.47	0.68	W14x211	2.74	0.38	0.38	0.38	0.39	0.52
0.38	0.38	0.38	0.44	0.63	W14x233	3.00	0.38	0.38	0.38	0.38	0.49
0.38	0.38	0.38	0.41	0.59	W14x257	3.27	0.38	0.38	0.38	0.38	0.45
0.38	0.38	0.38	0.38	0.55	W14x283	3.57	0.38	0.38	0.38	0.38	0.42
0.38	0.38	0.38	0.38	0.51	W14x311	3.88	0.38	0.38	0.38	0.38	0.39
0.38	0.38	0.38	0.38	0.47	W14x342	4.21	0.38	0.38	0.38	0.38	0.38
0.38	0.38	0.38	0.38	0.45	W14x370	4.51	0.38	0.38	0.38	0.38	0.38
0.38	0.38	0.38	0.38	0.42	W14x398	4.80	0.38	0.38	0.38	0.38	0.38
0.38	0.38	0.38	0.38	0.40	W14x426	5.09	0.38	0.38	0.38	0.38	0.38
0.38	0.38	0.38	0.38	0.38	W14x455	5.38	0.38	0.38	0.38	0.38	0.38
0.38	0.38	0.38	0.38	0.38	W14x500	5.82	0.38	0.38	0.38	0.38	0.38
0.38	0.38	0.38	0.38	0.38	W14x550	6.30	0.38	0.38	0.38	0.38	0.38
0.38	0.38	0.38	0.38	0.38	W14x605	6.80	0.38	0.38	0.38	0.38	0.38
0.46	0.68	0.99	1.37	1.98	W16x26	0.55	0.46	0.46	0.68	1.14	1.52
0.42	0.63	0.91	1.26	1.82	W16x31	0.65	0.42	0.42	0.63	1.05	1.40
0.41	0.61	0.88	1.22	1.76	W16x36	0.69	0.41	0.41	0.61	1.02	1.36
0.39	0.58	0.84	1.16	1.67	W16x40	0.76	0.39	0.39	0.58	0.97	1.29
0.38	0.54	0.78	1.09	1.57	W16x45	0.85	0.38	0.38	0.54	0.91	1.21
0.38	0.51	0.74	1.02	1.48	W16x50	0.94	0.38	0.38	0.51	0.85	1.14
0.38	0.47	0.68	0.94	1.36	W16x67	1.07	0.38	0.38	0.47	0.79	1.05
0.38	0.47	0.68	0.94	1.36	W16x77	1.07	0.38	0.38	0.47	0.79	1.05
0.38	0.43	0.63	0.87	1.25	W16x89	1.22	0.38	0.38	0.43	0.72	0.96
0.38	0.38	0.53	0.73	1.05	W16x100	1.56	0.38	0.38	0.38	0.61	0.81
0.42	0.63	0.90	1.25	1.81	W18x35	0.66	0.42	0.42	0.63	1.04	1.39
0.39	0.58	0.84	1.16	1.67	W18x40	0.76	0.39	0.39	0.58	0.97	1.29
0.38	0.54	0.78	1.08	1.56	W18x46	0.86	0.38	0.38	0.54	0.90	1.20
0.38	0.54	0.77	1.07	1.55	W18x50	0.87	0.38	0.38	0.54	0.89	1.19
0.38	0.51	0.73	1.02	1.47	W18x55	0.95	0.38	0.38	0.51	0.85	1.13
0.38	0.48	0.70	0.97	1.40	W18x60	1.03	0.38	0.38	0.48	0.81	1.07
0.38	0.46	0.67	0.92	1.33	W18x65	1.11	0.38	0.38	0.46	0.77	1.02
0.38	0.44	0.63	0.87	1.26	W18x71	1.21	0.38	0.38	0.44	0.73	0.97
0.38	0.46	0.67	0.92	1.33	W18x76	1.11	0.38	0.38	0.46	0.77	1.02
0.38	0.43	0.62	0.86	1.24	W18x88	1.24	0.38	0.38	0.43	0.71	0.95
0.38	0.40	0.57	0.79	1.14	W18x97	1.39	0.38	0.38	0.40	0.66	0.88
0.38	0.38	0.54	0.74	1.07	W18x106	1.52	0.38	0.38	0.38	0.62	0.83
0.38	0.38	0.50	0.69	1.00	W18x119	1.68	0.38	0.38	0.38	0.58	0.77
0.39	0.59	0.86	1.18	1.71	W21x44	0.73	0.39	0.39	0.59	0.99	1.32
0.38	0.55	0.80	1.10	1.59	W21x50	0.83	0.38	0.38	0.55	0.92	1.22
0.38	0.51	0.74	1.03	1.49	W21x57	0.93	0.38	0.38	0.51	0.86	1.14
0.38	0.51	0.74	1.02	1.48	W21x62	0.94	0.38	0.38	0.51	0.85	1.14
0.38	0.48	0.70	0.97	1.40	W21x68	1.03	0.38	0.38	0.48	0.81	1.07
0.38	0.43	0.62	0.86	1.24	W21x83	1.24	0.38	0.38	0.43	0.71	0.95
0.38	0.40	0.57	0.80	1.15	W21x93	1.38	0.38	0.38	0.40	0.66	0.88
0.38	0.42	0.60	0.83	1.20	W21x101	1.29	0.38	0.38	0.42	0.69	0.93
0.38	0.39	0.57	0.78	1.13	W21x111	1.41	0.38	0.38	0.39	0.65	0.87

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1 Hr	1.5 Hr	2 Hr	3 Hr	4 Hr			1 Hr	1.5 Hr	2 Hr	3 Hr	4 Hr
0.38	0.38	0.53	0.74	1.06	W21x122	1.54	0.38	0.38	0.38	0.61	0.82
0.38	0.38	0.45	0.70	1.01	W21x132	1.66	0.38	0.38	0.38	0.52	0.77
0.38	0.38	0.42	0.65	0.94	W21x147	1.83	0.38	0.38	0.38	0.49	0.72
0.38	0.50	0.72	1.11	1.60	W24x55	0.82	0.38	0.38	0.50	0.83	1.23
0.38	0.47	0.67	1.04	1.50	W24x62	0.92	0.38	0.38	0.47	0.78	1.15
0.38	0.46	0.67	1.03	1.49	W24x68	0.93	0.38	0.38	0.46	0.77	1.14
0.38	0.44	0.63	0.97	1.40	W24x76	1.02	0.38	0.38	0.44	0.73	1.08
0.38	0.41	0.59	0.91	1.32	W24x84	1.13	0.38	0.38	0.41	0.68	1.01
0.38	0.38	0.55	0.85	1.22	W24x94	1.26	0.38	0.38	0.38	0.64	0.94
0.38	0.39	0.56	0.87	1.25	W24x104	1.22	0.38	0.38	0.39	0.65	0.96
0.38	0.38	0.52	0.80	1.16	W24x117	1.36	0.38	0.38	0.38	0.60	0.89
0.38	0.38	0.48	0.74	1.07	W24x131	1.52	0.38	0.38	0.38	0.56	0.83
0.38	0.38	0.45	0.69	1.00	W24x146	1.68	0.38	0.38	0.38	0.52	0.77
0.38	0.38	0.42	0.64	0.93	W24x162	1.85	0.38	0.38	0.38	0.48	0.71
0.38	0.44	0.63	0.97	1.40	W27x84	1.02	0.38	0.38	0.44	0.73	1.08
0.38	0.41	0.59	0.91	1.32	W27x94	1.13	0.38	0.38	0.41	0.68	1.01
0.38	0.39	0.56	0.86	1.24	W27x102	1.23	0.38	0.38	0.39	0.65	0.96
0.38	0.38	0.52	0.80	1.16	W27x114	1.36	0.38	0.38	0.38	0.60	0.89
0.38	0.38	0.48	0.74	1.07	W27x146	1.53	0.38	0.38	0.38	0.55	0.82
0.38	0.38	0.45	0.69	1.00	W27x161	1.68	0.38	0.38	0.38	0.52	0.77
0.38	0.38	0.42	0.64	0.93	W27x178	1.85	0.38	0.38	0.38	0.48	0.71
0.38	0.42	0.60	0.93	1.34	W30x99	1.10	0.38	0.38	0.42	0.69	1.03
0.38	0.39	0.57	0.88	1.26	W30x108	1.20	0.38	0.38	0.39	0.66	0.97
0.38	0.38	0.54	0.84	1.21	W30x116	1.28	0.38	0.38	0.38	0.63	0.93
0.38	0.38	0.52	0.80	1.15	W30x124	1.37	0.38	0.38	0.38	0.60	0.89
0.38	0.38	0.50	0.76	1.10	W30x132	1.46	0.38	0.38	0.38	0.57	0.85
0.38	0.38	0.45	0.70	1.01	W30x173	1.66	0.38	0.38	0.38	0.52	0.77
0.38	0.38	0.42	0.65	0.94	W30x191	1.82	0.38	0.38	0.38	0.49	0.72
0.38	0.38	0.39	0.61	0.88	W30x211	2.00	0.38	0.38	0.38	0.45	0.67
0.38	0.40	0.57	0.88	1.27	W33x118	1.19	0.38	0.38	0.40	0.66	0.98
0.38	0.38	0.54	0.82	1.19	W33x130	1.31	0.38	0.38	0.38	0.62	0.92
0.38	0.38	0.51	0.78	1.13	W33x141	1.41	0.38	0.38	0.38	0.59	0.87
0.38	0.38	0.49	0.75	1.08	W33x152	1.51	0.38	0.38	0.38	0.56	0.83
0.38	0.38	0.43	0.66	0.96	W33x201	1.78	0.38	0.38	0.38	0.50	0.74

These beam protection thicknesses have been calculated for the convenience of users, in accordance with "6. Adjustment of Thickness of Spray-applied Fire Resistive Materials for Restrained and Unrestrained Beams", as detailed in the UL FireResistance Directory - Volume 1, 2010, page 10. While we have taken care to be as accurate as possible, we will not be held responsible for errors or omissions. If any discrepancy is found between these tables and the UL Design information, the UL Design information shall govern.

* When used to adjust the material thickness for a **Restrained** beam the use of this procedure is limited to steel sections classified as **compact** in accordance with the *Specification for the Design of Structural Steel Buildings* by the American Institute of Steel Construction. Refer to the UL Fire Resistance Directory.