

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, in., Required on Beam When Lower Edge Thickness is Reduced by One-Half**
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
0.420	0.630	0.910	1.540	2.170	W4x13 0.65	0.420	0.420	0.630	1.050	1.470
0.420	0.630	0.910	1.540	2.170	W5x16 0.65	0.420	0.420	0.630	1.050	1.470
0.386	0.579	0.836	1.415	1.994	W5x19 0.76	0.386	0.386	0.579	0.965	1.351
0.530	0.795	1.149	1.944	2.740	W6x9 0.39	0.530	0.530	0.795	1.326	1.856
0.473	0.709	1.025	1.734	2.444	W6x12 0.51	0.473	0.473	0.709	1.182	1.655
0.417	0.625	0.903	1.528	2.153	W6x16 0.66	0.417	0.417	0.625	1.042	1.458
0.413	0.620	0.896	1.516	2.136	W6x20 0.67	0.413	0.413	0.620	1.033	1.447
0.375	0.555	0.801	1.356	1.910	W6x26 0.82	0.375	0.375	0.555	0.924	1.294
0.541	0.812	1.173	1.985	2.796	W8x10 0.37	0.541	0.541	0.812	1.353	1.894
0.491	0.736	1.063	1.799	2.535	W8x13 0.47	0.491	0.491	0.736	1.227	1.717
0.461	0.691	0.998	1.689	2.379	W8x15 0.54	0.461	0.461	0.691	1.151	1.612
0.449	0.673	0.972	1.645	2.318	W8x18 0.57	0.449	0.449	0.673	1.122	1.571
0.417	0.625	0.903	1.528	2.153	W8x21 0.66	0.417	0.417	0.625	1.042	1.458
0.407	0.610	0.882	1.492	2.103	W8x24 0.69	0.407	0.407	0.610	1.017	1.424
0.375	0.563	0.813	1.375	1.938	W8x28 0.80	0.375	0.375	0.563	0.938	1.313
0.378	0.567	0.818	1.385	1.951	W8x31 0.79	0.378	0.378	0.567	0.944	1.322
0.375	0.532	0.769	1.301	1.833	W8x35 0.88	0.375	0.375	0.532	0.887	1.242
0.375	0.492	0.711	1.203	1.695	W8x40 1.00	0.375	0.375	0.492	0.820	1.148
0.375	0.442	0.639	1.081	1.524	W8x48 1.18	0.375	0.375	0.442	0.737	1.032
0.375	0.392	0.566	0.958	1.350	W8x58 1.41	0.375	0.375	0.392	0.653	0.914
0.375	0.375	0.515	0.871	1.227	W8x67 1.61	0.375	0.375	0.375	0.594	0.831
0.536	0.804	1.161	1.964	2.768	W10x12 0.38	0.536	0.536	0.804	1.339	1.875
0.486	0.729	1.053	1.782	2.512	W10x15 0.48	0.486	0.486	0.729	1.215	1.701
0.461	0.691	0.998	1.689	2.379	W10x17 0.54	0.461	0.461	0.691	1.151	1.612
0.441	0.662	0.956	1.618	2.279	W10x19 0.59	0.441	0.441	0.662	1.103	1.544
0.441	0.662	0.956	1.618	2.279	W10x22 0.59	0.441	0.441	0.662	1.103	1.544
0.407	0.610	0.882	1.492	2.103	W10x26 0.69	0.407	0.407	0.610	1.017	1.424
0.378	0.567	0.818	1.385	1.951	W10x30 0.79	0.378	0.378	0.567	0.944	1.322
0.383	0.575	0.830	1.405	1.980	W10x33 0.77	0.383	0.383	0.575	0.958	1.341
0.375	0.525	0.758	1.283	1.808	W10x39 0.90	0.375	0.375	0.525	0.875	1.225
0.375	0.483	0.698	1.181	1.664	W10x46 1.03	0.375	0.375	0.483	0.805	1.127
0.375	0.495	0.715	1.211	1.706	W10x49 0.99	0.375	0.375	0.495	0.825	1.156
0.375	0.466	0.673	1.139	1.605	W10x54 1.09	0.375	0.375	0.466	0.777	1.087
0.375	0.438	0.632	1.069	1.507	W10x60 1.20	0.375	0.375	0.438	0.729	1.021
0.375	0.402	0.580	0.982	1.384	W10x68 1.36	0.375	0.375	0.402	0.670	0.938
0.375	0.375	0.537	0.908	1.279	W10x77 1.52	0.375	0.375	0.375	0.619	0.867
0.375	0.375	0.490	0.830	1.169	W10x88 1.72	0.375	0.375	0.375	0.566	0.792
0.375	0.375	0.450	0.761	1.072	W10x100 1.93	0.375	0.375	0.375	0.519	0.726
0.375	0.375	0.415	0.703	0.990	W10x112 2.14	0.375	0.375	0.375	0.479	0.671
0.525	0.788	1.138	1.925	2.713	W12x14 0.40	0.525	0.525	0.788	1.313	1.838
0.500	0.750	1.083	1.833	2.583	W12x16 0.45	0.500	0.500	0.750	1.250	1.750
0.465	0.697	1.007	1.704	2.400	W12x19 0.53	0.465	0.465	0.697	1.162	1.626
0.434	0.651	0.940	1.591	2.242	W12x22 0.61	0.434	0.434	0.651	1.085	1.519
0.438	0.656	0.948	1.604	2.260	W12x26 0.60	0.438	0.438	0.656	1.094	1.531
0.407	0.610	0.882	1.492	2.103	W12x30 0.69	0.407	0.407	0.610	1.017	1.424

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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
0.378	0.567	0.818	1.385	1.951	W12x35	0.79	0.378	0.378	0.567	0.944	1.322
0.375	0.543	0.784	1.328	1.871	W12x40	0.85	0.375	0.375	0.543	0.905	1.267
0.375	0.508	0.734	1.242	1.750	W12x45	0.95	0.375	0.375	0.508	0.847	1.185
0.375	0.480	0.694	1.174	1.654	W12x50	1.04	0.375	0.375	0.480	0.800	1.120
0.375	0.495	0.715	1.211	1.706	W12x53	0.99	0.375	0.375	0.495	0.825	1.156
0.375	0.480	0.694	1.174	1.654	W12x54	1.04	0.375	0.375	0.480	0.800	1.120
0.375	0.469	0.677	1.146	1.615	W12x58	1.08	0.375	0.375	0.469	0.781	1.094
0.375	0.466	0.673	1.139	1.605	W12x65	1.09	0.375	0.375	0.466	0.777	1.087
0.375	0.438	0.632	1.069	1.507	W12x72	1.20	0.375	0.375	0.438	0.729	1.021
0.375	0.410	0.592	1.003	1.413	W12x79	1.32	0.375	0.375	0.410	0.684	0.957
0.375	0.386	0.558	0.944	1.330	W12x87	1.44	0.375	0.375	0.386	0.643	0.901
0.375	0.375	0.524	0.887	1.250	W12x96	1.57	0.375	0.375	0.375	0.605	0.847
0.375	0.375	0.488	0.826	1.164	W12x106	1.73	0.375	0.375	0.375	0.563	0.789
0.375	0.375	0.448	0.758	1.068	W12x120	1.94	0.375	0.375	0.375	0.517	0.723
0.375	0.375	0.411	0.695	0.979	W12x136	2.17	0.375	0.375	0.375	0.474	0.663
0.375	0.375	0.379	0.642	0.904	W12x152	2.40	0.375	0.375	0.375	0.438	0.613
0.375	0.375	0.375	0.590	0.832	W12x170	2.66	0.375	0.375	0.375	0.403	0.564
0.375	0.375	0.375	0.545	0.768	W12x190	2.93	0.375	0.375	0.375	0.375	0.521
0.375	0.375	0.375	0.505	0.712	W12x210	3.21	0.375	0.375	0.375	0.375	0.482
0.375	0.375	0.375	0.473	0.666	W12x230	3.47	0.375	0.375	0.375	0.375	0.451
0.375	0.375	0.375	0.442	0.622	W12x262	3.76	0.375	0.375	0.375	0.375	0.421
0.375	0.375	0.375	0.410	0.577	W12x279	4.10	0.375	0.375	0.375	0.375	0.391
0.375	0.375	0.375	0.384	0.541	W12x305	4.41	0.375	0.375	0.375	0.375	0.375
0.375	0.375	0.375	0.375	0.504	W12x336	4.78	0.375	0.375	0.375	0.375	0.375
0.469	0.703	1.016	1.719	2.422	W14x22	0.52	0.469	0.469	0.703	1.172	1.641
0.434	0.651	0.940	1.591	2.242	W14x26	0.61	0.434	0.434	0.651	1.085	1.519
0.427	0.640	0.925	1.565	2.205	W14x30	0.63	0.427	0.427	0.640	1.067	1.494
0.401	0.601	0.868	1.469	2.071	W14x34	0.71	0.401	0.401	0.601	1.002	1.403
0.378	0.567	0.818	1.385	1.951	W14x38	0.79	0.378	0.378	0.567	0.944	1.322
0.375	0.543	0.784	1.328	1.871	W14x43	0.85	0.375	0.375	0.543	0.905	1.267
0.375	0.511	0.739	1.250	1.761	W14x48	0.94	0.375	0.375	0.511	0.852	1.193
0.375	0.483	0.698	1.181	1.664	W14x53	1.03	0.375	0.375	0.483	0.805	1.127
0.375	0.472	0.681	1.153	1.624	W14x61	1.07	0.375	0.375	0.472	0.786	1.100
0.375	0.440	0.635	1.075	1.515	W14x68	1.19	0.375	0.375	0.440	0.733	1.027
0.375	0.419	0.605	1.024	1.443	W14x74	1.28	0.375	0.375	0.419	0.698	0.977
0.375	0.392	0.566	0.958	1.350	W14x82	1.41	0.375	0.375	0.392	0.653	0.914
0.375	0.421	0.608	1.029	1.451	W14x90	1.27	0.375	0.375	0.421	0.702	0.983
0.375	0.396	0.572	0.967	1.363	W14x99	1.39	0.375	0.375	0.396	0.660	0.923
0.375	0.375	0.534	0.904	1.273	W14x109	1.53	0.375	0.375	0.375	0.616	0.863
0.375	0.375	0.501	0.848	1.195	W14x120	1.67	0.375	0.375	0.375	0.578	0.809
0.375	0.375	0.468	0.792	1.116	W14x132	1.83	0.375	0.375	0.375	0.540	0.756
0.375	0.375	0.448	0.758	1.068	W14x145	1.94	0.375	0.375	0.375	0.517	0.723
0.375	0.375	0.420	0.710	1.001	W14x159	2.11	0.375	0.375	0.375	0.484	0.678
0.375	0.375	0.399	0.675	0.952	W14x176	2.25	0.375	0.375	0.375	0.461	0.645
0.375	0.375	0.390	0.659	0.929	W14x193	2.32	0.375	0.375	0.375	0.449	0.629

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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
0.375	0.375	0.375	0.576	0.812	W14x211	2.74	0.375	0.375	0.375	0.393	0.550
0.375	0.375	0.375	0.535	0.753	W14x233	3.00	0.375	0.375	0.375	0.375	0.510
0.375	0.375	0.375	0.497	0.701	W14x257	3.27	0.375	0.375	0.375	0.375	0.475
0.375	0.375	0.375	0.462	0.650	W14x283	3.57	0.375	0.375	0.375	0.375	0.441
0.375	0.375	0.375	0.430	0.605	W14x311	3.88	0.375	0.375	0.375	0.375	0.410
0.375	0.375	0.375	0.400	0.564	W14x342	4.21	0.375	0.375	0.375	0.375	0.382
0.375	0.375	0.375	0.377	0.531	W14x370	4.51	0.375	0.375	0.375	0.375	0.375
0.375	0.375	0.375	0.375	0.502	W14x398	4.80	0.375	0.375	0.375	0.375	0.375
0.375	0.375	0.375	0.375	0.477	W14x426	5.09	0.375	0.375	0.375	0.375	0.375
0.375	0.375	0.375	0.375	0.454	W14x455	5.38	0.375	0.375	0.375	0.375	0.375
0.375	0.375	0.375	0.375	0.423	W14x500	5.82	0.375	0.375	0.375	0.375	0.375
0.375	0.375	0.375	0.375	0.393	W14x550	6.30	0.375	0.375	0.375	0.375	0.375
0.375	0.375	0.375	0.375	0.375	W14x605	6.80	0.375	0.375	0.375	0.375	0.375
0.457	0.685	0.989	1.674	2.359	W16x26	0.55	0.457	0.457	0.685	1.141	1.598
0.420	0.630	0.910	1.540	2.170	W16x31	0.65	0.420	0.420	0.630	1.050	1.470
0.407	0.610	0.882	1.492	2.103	W16x36	0.69	0.407	0.407	0.610	1.017	1.424
0.386	0.579	0.836	1.415	1.994	W16x40	0.76	0.386	0.386	0.579	0.965	1.351
0.375	0.543	0.784	1.328	1.871	W16x45	0.85	0.375	0.375	0.543	0.905	1.267
0.375	0.511	0.739	1.250	1.761	W16x50	0.94	0.375	0.375	0.511	0.852	1.193
0.375	0.472	0.681	1.153	1.624	W16x67	1.07	0.375	0.375	0.472	0.786	1.100
0.375	0.472	0.681	1.153	1.624	W16x77	1.07	0.375	0.375	0.472	0.786	1.100
0.375	0.433	0.625	1.058	1.490	W16x89	1.22	0.375	0.375	0.433	0.721	1.010
0.375	0.375	0.527	0.891	1.256	W16x100	1.56	0.375	0.375	0.375	0.608	0.851
0.417	0.625	0.903	1.528	2.153	W18x35	0.66	0.417	0.417	0.625	1.042	1.458
0.386	0.579	0.836	1.415	1.994	W18x40	0.76	0.386	0.386	0.579	0.965	1.351
0.375	0.539	0.779	1.318	1.858	W18x46	0.86	0.375	0.375	0.539	0.899	1.259
0.375	0.536	0.774	1.310	1.845	W18x50	0.87	0.375	0.375	0.536	0.893	1.250
0.375	0.508	0.734	1.242	1.750	W18x55	0.95	0.375	0.375	0.508	0.847	1.185
0.375	0.483	0.698	1.181	1.664	W18x60	1.03	0.375	0.375	0.483	0.805	1.127
0.375	0.461	0.665	1.126	1.586	W18x65	1.11	0.375	0.375	0.461	0.768	1.075
0.375	0.435	0.628	1.064	1.499	W18x71	1.21	0.375	0.375	0.435	0.725	1.015
0.375	0.461	0.665	1.126	1.586	W18x76	1.11	0.375	0.375	0.461	0.768	1.075
0.375	0.428	0.618	1.046	1.474	W18x88	1.24	0.375	0.375	0.428	0.713	0.999
0.375	0.396	0.572	0.967	1.363	W18x97	1.39	0.375	0.375	0.396	0.660	0.923
0.375	0.375	0.537	0.908	1.279	W18x106	1.52	0.375	0.375	0.375	0.619	0.867
0.375	0.375	0.499	0.844	1.190	W18x119	1.68	0.375	0.375	0.375	0.576	0.806
0.395	0.592	0.855	1.447	2.039	W21x44	0.73	0.395	0.395	0.592	0.987	1.382
0.375	0.551	0.795	1.346	1.897	W21x50	0.83	0.375	0.375	0.551	0.918	1.285
0.375	0.515	0.743	1.258	1.773	W21x57	0.93	0.375	0.375	0.515	0.858	1.201
0.375	0.511	0.739	1.250	1.761	W21x62	0.94	0.375	0.375	0.511	0.852	1.193
0.375	0.483	0.698	1.181	1.664	W21x68	1.03	0.375	0.375	0.483	0.805	1.127
0.375	0.428	0.618	1.046	1.474	W21x83	1.24	0.375	0.375	0.428	0.713	0.999
0.375	0.398	0.574	0.972	1.370	W21x93	1.38	0.375	0.375	0.398	0.663	0.928
0.375	0.417	0.602	1.019	1.435	W21x101	1.29	0.375	0.375	0.417	0.694	0.972
0.375	0.392	0.566	0.958	1.350	W21x111	1.41	0.375	0.375	0.392	0.653	0.914

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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
0.375	0.375	0.532	0.900	1.268	W21x122	1.54	0.375	0.375	0.375	0.613	0.859
0.375	0.375	0.453	0.767	1.200	W21x132	1.66	0.375	0.375	0.375	0.523	0.813
0.375	0.375	0.421	0.713	1.116	W21x147	1.83	0.375	0.375	0.375	0.486	0.756
0.375	0.499	0.721	1.220	1.910	W24x55	0.82	0.375	0.375	0.499	0.832	1.294
0.375	0.466	0.674	1.140	1.785	W24x62	0.92	0.375	0.375	0.466	0.777	1.209
0.375	0.463	0.669	1.132	1.773	W24x68	0.93	0.375	0.375	0.463	0.772	1.201
0.375	0.438	0.632	1.069	1.674	W24x76	1.02	0.375	0.375	0.438	0.729	1.134
0.375	0.410	0.592	1.001	1.568	W24x84	1.13	0.375	0.375	0.410	0.683	1.062
0.375	0.381	0.550	0.931	1.458	W24x94	1.26	0.375	0.375	0.381	0.635	0.988
0.375	0.389	0.563	0.952	1.490	W24x104	1.22	0.375	0.375	0.389	0.649	1.010
0.375	0.375	0.522	0.884	1.384	W24x117	1.36	0.375	0.375	0.375	0.603	0.938
0.375	0.375	0.483	0.817	1.279	W24x131	1.52	0.375	0.375	0.375	0.557	0.867
0.375	0.375	0.449	0.760	1.190	W24x146	1.68	0.375	0.375	0.375	0.518	0.806
0.375	0.375	0.418	0.707	1.107	W24x162	1.85	0.375	0.375	0.375	0.482	0.750
0.375	0.438	0.632	1.069	1.674	W27x84	1.02	0.375	0.375	0.438	0.729	1.134
0.375	0.410	0.592	1.001	1.568	W27x94	1.13	0.375	0.375	0.410	0.683	1.062
0.375	0.387	0.559	0.947	1.482	W27x102	1.23	0.375	0.375	0.387	0.645	1.004
0.375	0.375	0.522	0.884	1.384	W27x114	1.36	0.375	0.375	0.375	0.603	0.938
0.375	0.375	0.481	0.813	1.273	W27x146	1.53	0.375	0.375	0.375	0.555	0.863
0.375	0.375	0.449	0.760	1.190	W27x161	1.68	0.375	0.375	0.375	0.518	0.806
0.375	0.375	0.418	0.707	1.107	W27x178	1.85	0.375	0.375	0.375	0.482	0.750
0.375	0.417	0.602	1.019	1.596	W30x99	1.10	0.375	0.375	0.417	0.695	1.081
0.375	0.394	0.569	0.963	1.507	W30x108	1.20	0.375	0.375	0.394	0.656	1.021
0.375	0.377	0.545	0.922	1.443	W30x116	1.28	0.375	0.375	0.377	0.628	0.977
0.375	0.375	0.520	0.879	1.377	W30x124	1.37	0.375	0.375	0.375	0.600	0.933
0.375	0.375	0.497	0.841	1.317	W30x132	1.46	0.375	0.375	0.375	0.573	0.892
0.375	0.375	0.453	0.767	1.200	W30x173	1.66	0.375	0.375	0.375	0.523	0.813
0.375	0.375	0.423	0.716	1.121	W30x191	1.82	0.375	0.375	0.375	0.488	0.759
0.375	0.375	0.394	0.666	1.043	W30x211	2.00	0.375	0.375	0.375	0.454	0.707
0.375	0.396	0.572	0.968	1.515	W33x118	1.19	0.375	0.375	0.396	0.660	1.027
0.375	0.375	0.536	0.907	1.420	W33x130	1.31	0.375	0.375	0.375	0.618	0.962
0.375	0.375	0.509	0.862	1.350	W33x141	1.41	0.375	0.375	0.375	0.588	0.914
0.375	0.375	0.485	0.821	1.286	W33x152	1.51	0.375	0.375	0.375	0.560	0.871
0.375	0.375	0.430	0.728	1.140	W33x201	1.78	0.375	0.375	0.375	0.496	0.772

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, 2007, page 9. 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.

**Thickness applied to beam's lower flange edge shall not be less than 1/4-in.