



Table I: Rectangular Bar
Fire Resistance Period: 30 Minutes

Thickness (mm) Required for a Design Temperature of

Section Factor (m-I)	300°C	330°C	350°C	400°C	450°C	500°C	512°C	520°C	521°C	547°C	550°C	600°C	620°C	650°C	700°C	750°C
	DFT (mm)	DFT (mm)	DFT (mm)	DFT (mm)	DFT (mm)	DFT (mm)	DFT (mm)	DFT (mm)	DFT (mm)	DFT (mm)	DFT (mm)	DFT (mm)	DFT (mm)	DFT (mm)	DFT (mm)	DFT (mm)
30	0.771	0.598	0.438	0.240	0.240	0.240	0.240	0.240	0.240	0.240	0.240	0.240	0.240	0.240	0.240	0.240
35	0.821	0.647	0.484	0.240	0.240	0.240	0.240	0.240	0.240	0.240	0.240	0.240	0.240	0.240	0.240	0.240
40	0.874	0.699	0.533	0.255	0.240	0.240	0.240	0.240	0.240	0.240	0.240	0.240	0.240	0.240	0.240	0.240
45	0.930	0.753	0.584	0.297	0.240	0.240	0.240	0.240	0.240	0.240	0.240	0.240	0.240	0.240	0.240	0.240
50	0.990	0.810	0.637	0.341	0.240	0.240	0.240	0.240	0.240	0.240	0.240	0.240	0.240	0.240	0.240	0.240
55	1.053	0.870	0.693	0.386	0.240	0.240	0.240	0.240	0.240	0.240	0.240	0.240	0.240	0.240	0.240	0.240
60	1.121	0.933	0.751	0.434	0.240	0.240	0.240	0.240	0.240	0.240	0.240	0.240	0.240	0.240	0.240	0.240
65	1.193	0.999	0.813	0.485	0.244	0.240	0.240	0.240	0.240	0.240	0.240	0.240	0.240	0.240	0.240	0.240
70	1.270	1.070	0.878	0.538	0.287	0.240	0.240	0.240	0.240	0.240	0.240	0.240	0.240	0.240	0.240	0.240
75	1.353	1.144	0.946	0.593	0.333	0.240	0.240	0.240	0.240	0.240	0.240	0.240	0.240	0.240	0.240	0.240
80	1.442	1.223	1.018	0.651	0.380	0.240	0.240	0.240	0.240	0.240	0.240	0.240	0.240	0.240	0.240	0.240
85	1.538	1.306	1.095	0.713	0.430	0.240	0.240	0.240	0.240	0.240	0.240	0.240	0.240	0.240	0.240	0.240
90	1.642	1.395	1.175	0.778	0.483	0.278	0.240	0.240	0.240	0.240	0.240	0.240	0.240	0.240	0.240	0.240
95	1.755	1.490	1.261	0.846	0.539	0.326	0.284	0.257	0.253	0.240	0.240	0.240	0.240	0.240	0.240	0.240
100	1.878	1.591	1.352	0.918	0.597	0.377	0.333	0.306	0.302	0.240	0.240	0.240	0.240	0.240	0.240	0.240
105	1.969	1.673	1.425	0.976	0.642	0.414	0.369	0.340	0.336	0.248	0.240	0.240	0.240	0.240	0.240	0.240
110	2.102	1.763	1.503	1.037	0.690	0.453	0.406	0.376	0.372	0.281	0.270	0.240	0.240	0.240	0.240	0.240
115	2.380	1.861	1.588	1.103	0.742	0.495	0.446	0.415	0.411	0.316	0.305	0.240	0.240	0.240	0.240	0.240
120	2.626	1.968	1.680	1.175	0.798	0.540	0.489	0.457	0.452	0.354	0.343	0.240	0.240	0.240	0.240	0.240
125	2.846	2.099	1.781	1.252	0.857	0.588	0.535	0.501	0.497	0.394	0.383	0.240	0.240	0.240	0.240	0.240
130	3.044	2.259	1.892	1.336	0.922	0.640	0.584	0.549	0.544	0.438	0.426	0.241	0.240	0.240	0.240	0.240
135	3.222	2.403	2.014	1.428	0.992	0.695	0.637	0.600	0.595	0.484	0.472	0.282	0.240	0.240	0.240	0.240
140	3.384	2.535	2.150	1.528	1.068	0.756	0.694	0.656	0.651	0.534	0.521	0.325	0.243	0.240	0.240	0.240
145	3.531	2.655	2.278	1.639	1.150	0.821	0.756	0.716	0.711	0.588	0.574	0.372	0.287	0.240	0.240	0.240
150	3.666	2.765	2.395	1.760	1.241	0.892	0.824	0.781	0.776	0.646	0.632	0.422	0.334	0.240	0.240	0.240
155	3.790	2.866	2.502	1.896	1.341	0.970	0.897	0.852	0.846	0.710	0.695	0.476	0.384	0.244	0.240	0.240
160	3.905	2.960	2.600	2.047	1.451	1.056	0.978	0.930	0.924	0.779	0.763	0.535	0.439	0.292	0.240	0.240
165	4.010	3.047	2.691	2.166	1.574	1.150	1.067	1.016	1.009	0.855	0.838	0.600	0.499	0.344	0.240	0.240
170	-	3.127	2.775	2.274	1.710	1.255	1.165	1.111	1.104	0.938	0.920	0.670	0.564	0.401	0.240	0.240
175	-	3.202	2.853	2.373	1.864	1.371	1.275	1.216	1.208	1.030	1.011	0.747	0.635	0.463	0.240	0.240

- Results are applicable for both vertical and horizontal rods. For vertical results, it may be possible to optimise the loadings needed – consult your Nullifire representative if required.

PLEASE NOTE: The critical temperatures in this loading table are as defined for offices in accordance with BS5950-8:2003 as per Table 18 of the ASFP 5th Edition Yellow Book. The Yellow book also gives new critical temperatures to comply with several different building uses either to the Eurocodes for steel design or BS5950-8:2003. Alternative loadings tables to other critical temperatures are available from the Nullifire Technical Desk on request.



Table 2: Rectangular Bar
Fire Resistance Period: 45 Minutes

Thickness (mm) Required for a Design Temperature of

Section Factor (m-I)	300°C	330°C	350°C	400°C	450°C	500°C	512°C	520°C	521°C	547°C	550°C	600°C	620°C	650°C	700°C	750°C
	DFT (mm)	DFT (mm)	DFT (mm)	DFT (mm)	DFT (mm)	DFT (mm)	DFT (mm)	DFT (mm)	DFT (mm)	DFT (mm)	DFT (mm)	DFT (mm)	DFT (mm)	DFT (mm)	DFT (mm)	DFT (mm)
30	1.510	1.408	1.234	0.899	0.617	0.403	0.357	0.328	0.324	0.240	0.240	0.240	0.240	0.240	0.240	0.240
35	1.581	1.476	1.298	0.952	0.661	0.442	0.395	0.365	0.362	0.267	0.256	0.240	0.240	0.240	0.240	0.240
40	1.656	1.548	1.365	1.008	0.708	0.483	0.435	0.405	0.401	0.304	0.293	0.240	0.240	0.240	0.240	0.240
45	1.736	1.623	1.435	1.067	0.756	0.525	0.477	0.446	0.442	0.344	0.332	0.240	0.240	0.240	0.240	0.240
50	1.820	1.702	1.509	1.128	0.807	0.570	0.520	0.488	0.484	0.384	0.373	0.240	0.240	0.240	0.240	0.240
55	1.910	1.785	1.586	1.192	0.860	0.616	0.565	0.532	0.528	0.427	0.415	0.240	0.240	0.240	0.240	0.240
60	2.006	1.872	1.667	1.259	0.915	0.664	0.612	0.579	0.575	0.471	0.460	0.274	0.240	0.240	0.240	0.240
65	2.169	1.964	1.752	1.329	0.973	0.715	0.661	0.627	0.623	0.518	0.506	0.320	0.241	0.240	0.240	0.240
70	2.412	2.068	1.842	1.402	1.034	0.768	0.713	0.678	0.674	0.566	0.554	0.367	0.288	0.240	0.240	0.240
75	2.703	2.236	1.936	1.480	1.097	0.823	0.767	0.731	0.727	0.617	0.605	0.418	0.337	0.240	0.240	0.240
80	3.056	2.434	2.036	1.561	1.164	0.881	0.823	0.787	0.782	0.670	0.657	0.470	0.389	0.267	0.240	0.240
85	3.495	2.672	2.218	1.647	1.234	0.942	0.883	0.845	0.840	0.726	0.713	0.525	0.443	0.321	0.240	0.240
90	-	2.962	2.451	1.737	1.308	1.007	0.945	0.906	0.901	0.785	0.771	0.582	0.499	0.376	0.240	0.240
95	-	3.323	2.737	1.832	1.386	1.074	1.011	0.971	0.966	0.846	0.833	0.643	0.559	0.435	0.240	0.240
100	-	3.787	3.100	1.933	1.469	1.145	1.080	1.039	1.034	0.911	0.897	0.706	0.621	0.496	0.281	0.240
105	-	3.888	3.233	2.026	1.543	1.207	1.138	1.096	1.090	0.964	0.949	0.753	0.665	0.536	0.316	0.240
110	-	3.976	3.349	2.232	1.622	1.272	1.201	1.156	1.151	1.019	1.004	0.803	0.712	0.579	0.352	0.240
115	-	-	3.450	2.436	1.707	1.341	1.267	1.221	1.215	1.078	1.062	0.855	0.762	0.624	0.392	0.240
120	-	-	3.539	2.609	1.798	1.416	1.339	1.290	1.284	1.141	1.125	0.911	0.815	0.672	0.433	0.240
125	-	-	3.618	2.756	1.896	1.496	1.415	1.365	1.358	1.209	1.191	0.971	0.871	0.723	0.477	0.240
130	-	-	3.688	2.883	2.002	1.582	1.497	1.444	1.438	1.281	1.263	1.035	0.931	0.778	0.524	0.240
135	-	-	3.752	2.993	2.163	1.675	1.585	1.530	1.523	1.358	1.340	1.103	0.996	0.836	0.574	0.240
140	-	-	3.809	3.091	2.338	1.775	1.681	1.623	1.615	1.442	1.422	1.176	1.065	0.898	0.627	0.268
145	-	-	3.861	3.177	2.488	1.884	1.784	1.723	1.715	1.532	1.511	1.255	1.139	0.965	0.685	0.317
150	-	-	3.909	3.254	2.620	2.002	1.897	1.832	1.823	1.629	1.607	1.340	1.219	1.037	0.746	0.371
155	-	-	3.953	3.323	2.735	2.151	2.019	1.951	1.942	1.735	1.712	1.432	1.305	1.114	0.812	0.429
160	-	-	3.993	3.385	2.837	2.298	2.168	2.085	2.075	1.851	1.826	1.532	1.398	1.198	0.884	0.491
165	-	-	4.030	3.442	2.927	2.427	2.307	2.230	2.220	1.977	1.951	1.640	1.500	1.289	0.961	0.560
170	-	-	-	3.494	3.009	2.541	2.429	2.358	2.348	2.115	2.087	1.759	1.611	1.388	1.046	0.634
175	-	-	-	3.541	3.082	2.644	2.539	2.472	2.463	2.243	2.218	1.889	1.733	1.496	1.137	0.715

- Results are applicable for both vertical and horizontal rods. For vertical results, it may be possible to optimise the loadings needed – consult your Nullifire representative if required.

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Table 3: Rectangular Bar
Fire Resistance Period: 60 Minutes

Thickness (mm) Required for a Design Temperature of

Section Factor (m-I)	300°C	330°C	350°C	400°C	450°C	500°C	512°C	520°C	521°C	547°C	550°C	600°C	620°C	650°C	700°C	750°C
	DFT (mm)	DFT (mm)	DFT (mm)	DFT (mm)	DFT (mm)	DFT (mm)	DFT (mm)	DFT (mm)	DFT (mm)	DFT (mm)	DFT (mm)	DFT (mm)	DFT (mm)	DFT (mm)	DFT (mm)	DFT (mm)
30	2.373	2.246	2.030	1.621	1.243	0.960	0.900	0.862	0.857	0.738	0.725	0.521	0.432	0.294	0.240	0.240
35	2.535	2.356	2.126	1.690	1.301	1.010	0.949	0.910	0.905	0.784	0.770	0.566	0.476	0.337	0.240	0.240
40	2.715	2.478	2.235	1.762	1.360	1.063	1.000	0.960	0.955	0.832	0.818	0.613	0.523	0.382	0.240	0.240
45	2.918	2.613	2.356	1.837	1.423	1.117	1.053	1.012	1.007	0.882	0.868	0.662	0.571	0.429	0.240	0.240
50	3.146	2.764	2.490	1.915	1.488	1.174	1.108	1.067	1.062	0.934	0.920	0.713	0.621	0.478	0.240	0.240
55	3.407	2.933	2.641	1.997	1.556	1.234	1.166	1.124	1.119	0.988	0.974	0.766	0.673	0.529	0.289	0.240
60	3.707	3.125	2.811	2.107	1.627	1.296	1.226	1.183	1.178	1.045	1.030	0.822	0.727	0.582	0.340	0.240
65	-	3.344	3.005	2.274	1.702	1.361	1.290	1.245	1.240	1.104	1.089	0.879	0.783	0.638	0.393	0.240
70	-	3.597	3.227	2.468	1.780	1.429	1.356	1.310	1.304	1.166	1.151	0.940	0.842	0.695	0.449	0.240
75	-	3.892	3.484	2.695	1.862	1.500	1.425	1.378	1.372	1.231	1.215	1.003	0.904	0.756	0.506	0.240
80	-	-	3.786	2.965	1.948	1.574	1.497	1.449	1.443	1.299	1.282	1.069	0.968	0.819	0.567	0.243
85	-	-	-	3.293	2.038	1.653	1.573	1.524	1.518	1.370	1.353	1.138	1.036	0.885	0.630	0.299
90	-	-	-	3.698	2.363	1.735	1.653	1.602	1.596	1.445	1.427	1.210	1.107	0.954	0.696	0.358
95	-	-	-	-	2.836	1.822	1.737	1.685	1.678	1.523	1.505	1.286	1.181	1.027	0.766	0.419
100	-	-	-	-	3.499	1.913	1.826	1.772	1.765	1.606	1.588	1.366	1.259	1.104	0.838	0.483
105	-	-	-	-	3.656	1.999	1.908	1.852	1.845	1.679	1.660	1.432	1.321	1.161	0.889	0.528
110	-	-	-	-	3.771	2.227	1.995	1.937	1.929	1.757	1.737	1.502	1.388	1.222	0.942	0.575
115	-	-	-	-	3.859	2.555	2.198	2.027	2.020	1.840	1.819	1.576	1.458	1.286	0.998	0.625
120	-	-	-	-	3.928	2.800	2.497	2.296	2.270	1.928	1.907	1.655	1.533	1.355	1.058	0.678
125	-	-	-	-	3.984	2.989	2.726	2.553	2.531	2.023	2.000	1.739	1.613	1.427	1.122	0.735
130	-	-	-	-	4.030	3.139	2.908	2.756	2.736	2.241	2.180	1.829	1.698	1.505	1.190	0.795
135	-	-	-	-	-	3.262	3.055	2.919	2.902	2.460	2.406	1.925	1.789	1.588	1.262	0.859
140	-	-	-	-	-	3.364	3.176	3.054	3.038	2.639	2.590	2.028	1.886	1.677	1.339	0.928
145	-	-	-	-	-	3.450	3.279	3.167	3.153	2.788	2.744	2.197	1.991	1.772	1.421	1.003
150	-	-	-	-	-	3.524	3.366	3.263	3.250	2.914	2.874	2.357	2.130	1.874	1.510	1.083
155	-	-	-	-	-	3.588	3.441	3.346	3.334	3.022	2.985	2.495	2.284	1.984	1.606	1.169
160	-	-	-	-	-	3.643	3.506	3.418	3.406	3.115	3.081	2.615	2.418	2.116	1.709	1.263
165	-	-	-	-	-	3.692	3.564	3.481	3.470	3.197	3.165	2.721	2.535	2.252	1.821	1.365
170	-	-	-	-	-	3.736	3.615	3.537	3.527	3.269	3.239	2.814	2.639	2.372	1.942	1.476
175	-	-	-	-	-	3.775	3.660	3.587	3.577	3.334	3.305	2.897	2.731	2.479	2.073	1.598

- Results are applicable for both vertical and horizontal rods. For vertical results, it may be possible to optimise the loadings needed – consult your Nullifire representative if required.

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Table 4: Circular Bar
Fire Resistance Period: 30 Minutes

Thickness (mm) Required for a Design Temperature of

Bar Diameter (mm)	300°C	330°C	350°C	400°C	450°C	500°C	512°C	520°C	521°C	547°C	550°C	600°C	620°C	650°C	700°C	750°C
	DFT (mm)	DFT (mm)	DFT (mm)	DFT (mm)	DFT (mm)	DFT (mm)	DFT (mm)	DFT (mm)	DFT (mm)	DFT (mm)	DFT (mm)	DFT (mm)	DFT (mm)	DFT (mm)	DFT (mm)	DFT (mm)
25	-	3.702	3.254	2.560	1.923	1.511	1.427	1.376	1.370	1.219	1.202	0.982	0.891	0.751	0.521	0.226
30	-	3.187	2.839	2.207	1.668	1.295	1.217	1.171	1.165	1.024	1.008	0.794	0.706	0.568	0.338	0.226
35	3.406	2.761	2.490	1.917	1.439	1.096	1.025	0.982	0.976	0.843	0.828	0.616	0.531	0.394	0.226	0.226
40	2.783	2.403	2.193	1.669	1.232	0.915	0.848	0.807	0.802	0.675	0.660	0.448	0.364	0.229	0.226	0.226
45	2.260	2.099	1.932	1.447	1.045	0.747	0.684	0.645	0.640	0.518	0.504	0.290	0.226	0.226	0.226	0.226
50	1.895	1.838	1.694	1.250	0.873	0.592	0.533	0.495	0.490	0.371	0.358	0.226	0.226	0.226	0.226	0.226
55	1.668	1.615	1.486	1.071	0.716	0.449	0.392	0.355	0.350	0.234	0.226	0.226	0.226	0.226	0.226	0.226
60	1.477	1.421	1.302	0.910	0.572	0.316	0.260	0.226	0.226	0.226	0.226	0.226	0.226	0.226	0.226	0.226
65	1.314	1.252	1.139	0.763	0.439	0.226	0.226	0.226	0.226	0.226	0.226	0.226	0.226	0.226	0.226	0.226
70	1.173	1.102	0.992	0.629	0.316	0.226	0.226	0.226	0.226	0.226	0.226	0.226	0.226	0.226	0.226	0.226
75	1.102	1.022	0.912	0.567	0.276	0.226	0.226	0.226	0.226	0.226	0.226	0.226	0.226	0.226	0.226	0.226
80	1.037	0.951	0.842	0.513	0.242	0.226	0.226	0.226	0.226	0.226	0.226	0.226	0.226	0.226	0.226	0.226
85	0.979	0.887	0.779	0.466	0.226	0.226	0.226	0.226	0.226	0.226	0.226	0.226	0.226	0.226	0.226	0.226
90	0.925	0.829	0.723	0.424	0.226	0.226	0.226	0.226	0.226	0.226	0.226	0.226	0.226	0.226	0.226	0.226
95	0.877	0.777	0.672	0.387	0.226	0.226	0.226	0.226	0.226	0.226	0.226	0.226	0.226	0.226	0.226	0.226
100	0.832	0.729	0.626	0.354	0.226	0.226	0.226	0.226	0.226	0.226	0.226	0.226	0.226	0.226	0.226	0.226
105	0.791	0.685	0.585	0.324	0.226	0.226	0.226	0.226	0.226	0.226	0.226	0.226	0.226	0.226	0.226	0.226
110	0.753	0.645	0.547	0.297	0.226	0.226	0.226	0.226	0.226	0.226	0.226	0.226	0.226	0.226	0.226	0.226
115	0.717	0.608	0.512	0.273	0.226	0.226	0.226	0.226	0.226	0.226	0.226	0.226	0.226	0.226	0.226	0.226
120	0.684	0.574	0.479	0.251	0.226	0.226	0.226	0.226	0.226	0.226	0.226	0.226	0.226	0.226	0.226	0.226
125	0.654	0.543	0.450	0.230	0.226	0.226	0.226	0.226	0.226	0.226	0.226	0.226	0.226	0.226	0.226	0.226
130	0.625	0.513	0.422	0.226	0.226	0.226	0.226	0.226	0.226	0.226	0.226	0.226	0.226	0.226	0.226	0.226
135	0.599	0.486	0.397	0.226	0.226	0.226	0.226	0.226	0.226	0.226	0.226	0.226	0.226	0.226	0.226	0.226

- Results are applicable for both vertical and horizontal rods. For vertical results, it may be possible to optimise the loadings needed – consult your Nullifire representative if required.

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Table 5: Circular Bar
Fire Resistance Period: 45 Minutes

Thickness (mm) Required for a Design Temperature of

Bar Diameter (mm)	300°C	330°C	350°C	400°C	450°C	500°C	512°C	520°C	521°C	547°C	550°C	600°C	620°C	650°C	700°C	750°C
	DFT (mm)	DFT (mm)	DFT (mm)	DFT (mm)	DFT (mm)	DFT (mm)	DFT (mm)	DFT (mm)	DFT (mm)	DFT (mm)	DFT (mm)	DFT (mm)	DFT (mm)	DFT (mm)	DFT (mm)	DFT (mm)
25	-	-	-	-	3.795	3.147	2.989	2.889	2.877	2.559	2.521	2.062	1.915	1.718	1.409	1.019
30	-	-	-	3.919	3.289	2.691	2.548	2.460	2.449	2.168	2.134	1.827	1.703	1.512	1.206	0.811
35	-	-	-	3.478	2.881	2.332	2.202	2.123	2.114	1.902	1.880	1.620	1.501	1.315	1.011	0.612
40	-	-	3.717	3.108	2.545	2.040	1.940	1.882	1.875	1.697	1.676	1.424	1.310	1.127	0.826	0.422
45	-	3.627	3.356	2.793	2.263	1.825	1.734	1.681	1.674	1.505	1.486	1.239	1.128	0.949	0.648	0.240
50	3.926	3.259	3.042	2.521	2.023	1.629	1.544	1.494	1.487	1.326	1.308	1.064	0.955	0.778	0.477	0.226
55	3.396	2.938	2.765	2.285	1.818	1.448	1.368	1.319	1.313	1.159	1.141	0.898	0.791	0.615	0.314	0.226
60	2.935	2.657	2.520	2.078	1.629	1.279	1.203	1.157	1.151	1.002	0.984	0.740	0.634	0.459	0.226	0.226
65	2.530	2.408	2.302	1.883	1.455	1.122	1.049	1.005	0.999	0.854	0.837	0.589	0.484	0.309	0.226	0.226
70	2.186	2.186	2.106	1.700	1.294	0.976	0.905	0.862	0.856	0.714	0.698	0.446	0.340	0.226	0.226	0.226
75	2.041	2.041	1.962	1.561	1.177	0.880	0.814	0.774	0.768	0.637	0.621	0.386	0.288	0.226	0.226	0.226
80	1.912	1.912	1.831	1.441	1.077	0.798	0.737	0.699	0.694	0.572	0.557	0.336	0.245	0.226	0.226	0.226
85	1.799	1.799	1.713	1.335	0.991	0.728	0.671	0.636	0.631	0.516	0.503	0.294	0.226	0.226	0.226	0.226
90	1.696	1.696	1.609	1.242	0.916	0.668	0.614	0.580	0.576	0.468	0.455	0.258	0.226	0.226	0.226	0.226
95	1.610	1.603	1.514	1.160	0.849	0.615	0.564	0.532	0.528	0.426	0.414	0.226	0.226	0.226	0.226	0.226
100	1.535	1.519	1.428	1.086	0.791	0.568	0.520	0.490	0.486	0.389	0.378	0.226	0.226	0.226	0.226	0.226
105	1.466	1.442	1.350	1.019	0.738	0.526	0.481	0.452	0.448	0.357	0.346	0.226	0.226	0.226	0.226	0.226
110	1.402	1.371	1.279	0.959	0.691	0.489	0.445	0.418	0.415	0.328	0.317	0.226	0.226	0.226	0.226	0.226
115	1.343	1.305	1.214	0.905	0.648	0.455	0.414	0.388	0.385	0.302	0.292	0.226	0.226	0.226	0.226	0.226
120	1.288	1.245	1.154	0.855	0.610	0.425	0.385	0.361	0.357	0.278	0.268	0.226	0.226	0.226	0.226	0.226
125	1.237	1.189	1.098	0.809	0.574	0.397	0.359	0.336	0.333	0.256	0.247	0.226	0.226	0.226	0.226	0.226
130	1.190	1.137	1.047	0.767	0.542	0.372	0.335	0.313	0.310	0.237	0.228	0.226	0.226	0.226	0.226	0.226
135	1.145	1.088	0.999	0.728	0.512	0.348	0.314	0.292	0.289	0.226	0.226	0.226	0.226	0.226	0.226	0.226

- Results are applicable for both vertical and horizontal rods. For vertical results, it may be possible to optimise the loadings needed – consult your Nullifire representative if required.

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Table 6: Circular Bar
Fire Resistance Period: 60 Minutes

Thickness (mm) Required for a Design Temperature of

Bar Diameter (mm)	300°C	330°C	350°C	400°C	450°C	500°C	512°C	520°C	521°C	547°C	550°C	600°C	620°C	650°C	700°C	750°C
	DFT (mm)	DFT (mm)	DFT (mm)	DFT (mm)	DFT (mm)	DFT (mm)	DFT (mm)	DFT (mm)	DFT (mm)	DFT (mm)	DFT (mm)	DFT (mm)	DFT (mm)	DFT (mm)	DFT (mm)	DFT (mm)
25	-	-	-	-	-	-	-	-	-	-	-	3.671	3.429	3.065	2.470	1.820
30	-	-	-	-	-	-	-	-	-	3.750	3.713	3.163	2.952	2.628	2.096	1.594
35	-	-	-	-	-	3.810	3.664	3.574	3.562	3.270	3.236	2.770	2.584	2.293	1.859	1.377
40	-	-	-	-	3.943	3.378	3.244	3.161	3.151	2.886	2.855	2.456	2.291	2.027	1.655	1.170
45	-	-	-	-	3.547	3.021	2.897	2.822	2.813	2.571	2.544	2.201	2.053	1.827	1.459	0.972
50	-	-	-	3.759	3.212	2.721	2.607	2.538	2.530	2.309	2.284	1.988	1.855	1.636	1.272	0.783
55	-	-	4.012	3.442	2.923	2.465	2.360	2.297	2.289	2.087	2.064	1.798	1.669	1.454	1.092	0.601
60	-	3.907	3.696	3.165	2.671	2.245	2.147	2.090	2.082	1.898	1.877	1.618	1.492	1.280	0.919	0.427
65	-	3.586	3.414	2.919	2.451	2.052	1.961	1.907	1.900	1.724	1.703	1.446	1.322	1.113	0.754	0.259
70	3.799	3.300	3.161	2.699	2.256	1.876	1.788	1.736	1.729	1.559	1.539	1.282	1.161	0.953	0.595	0.226
75	3.671	3.205	3.065	2.573	2.083	1.706	1.624	1.575	1.568	1.409	1.390	1.147	1.033	0.843	0.513	0.226
80	3.529	3.101	2.960	2.431	1.913	1.561	1.484	1.438	1.432	1.283	1.265	1.034	0.927	0.750	0.446	0.226
85	3.369	2.987	2.844	2.269	1.770	1.437	1.365	1.321	1.315	1.175	1.158	0.938	0.838	0.673	0.389	0.226
90	3.189	2.861	2.714	2.082	1.645	1.330	1.262	1.220	1.214	1.082	1.066	0.856	0.761	0.606	0.340	0.226
95	2.984	2.722	2.568	1.932	1.535	1.236	1.171	1.131	1.126	1.001	0.986	0.785	0.695	0.549	0.298	0.226
100	2.749	2.567	2.404	1.818	1.437	1.153	1.091	1.053	1.049	0.929	0.915	0.723	0.637	0.499	0.261	0.226
105	2.477	2.393	2.217	1.715	1.350	1.079	1.020	0.984	0.980	0.866	0.853	0.668	0.586	0.454	0.229	0.226
110	2.197	2.197	2.012	1.621	1.272	1.012	0.957	0.922	0.918	0.810	0.797	0.619	0.541	0.415	0.226	0.226
115	2.002	2.002	1.917	1.537	1.201	0.953	0.899	0.867	0.862	0.759	0.747	0.575	0.500	0.380	0.226	0.226
120	1.915	1.915	1.829	1.459	1.137	0.899	0.848	0.816	0.812	0.713	0.701	0.535	0.464	0.349	0.226	0.226
125	1.835	1.835	1.747	1.388	1.079	0.850	0.801	0.770	0.767	0.672	0.660	0.500	0.431	0.320	0.226	0.226
130	1.760	1.760	1.672	1.323	1.025	0.805	0.758	0.729	0.725	0.634	0.623	0.467	0.401	0.294	0.226	0.226
135	1.691	1.690	1.602	1.263	0.976	0.764	0.718	0.690	0.687	0.599	0.588	0.438	0.374	0.270	0.226	0.226

- Results are applicable for both vertical and horizontal rods. For vertical results, it may be possible to optimise the loadings needed – consult your Nullifire representative if required.

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