



**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	0.564	0.377	0.259	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225
35	0.615	0.425	0.306	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225
40	0.669	0.475	0.354	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225
45	0.726	0.528	0.405	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225
50	0.786	0.584	0.458	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225
55	0.851	0.643	0.514	0.230	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225
60	0.921	0.705	0.573	0.282	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225
65	0.995	0.772	0.635	0.336	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225
70	1.075	0.842	0.701	0.392	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225
75	1.161	0.917	0.770	0.450	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225
80	1.253	0.997	0.843	0.510	0.252	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225
85	1.354	1.082	0.921	0.572	0.308	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225
90	1.463	1.174	1.003	0.637	0.366	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225
95	1.582	1.272	1.091	0.705	0.424	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225
100	1.712	1.378	1.184	0.775	0.484	0.268	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225
105	1.781	1.439	1.241	0.824	0.526	0.303	0.255	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225
110	1.860	1.504	1.300	0.876	0.570	0.340	0.290	0.258	0.255	0.225	0.225	0.225	0.225	0.225	0.225	0.225
115	1.993	1.573	1.364	0.931	0.617	0.379	0.328	0.295	0.291	0.225	0.225	0.225	0.225	0.225	0.225	0.225
120	2.132	1.647	1.432	0.989	0.667	0.421	0.369	0.335	0.331	0.230	0.225	0.225	0.225	0.225	0.225	0.225
125	2.276	1.726	1.504	1.052	0.721	0.467	0.413	0.378	0.373	0.269	0.257	0.225	0.225	0.225	0.225	0.225
130	2.426	1.811	1.582	1.119	0.779	0.516	0.460	0.424	0.419	0.310	0.298	0.225	0.225	0.225	0.225	0.225
135	2.583	1.940	1.665	1.191	0.841	0.569	0.511	0.473	0.469	0.356	0.343	0.225	0.225	0.225	0.225	0.225
140	2.746	2.100	1.755	1.269	0.908	0.626	0.566	0.527	0.522	0.405	0.392	0.225	0.225	0.225	0.225	0.225
145	2.917	2.267	1.856	1.353	0.980	0.688	0.626	0.586	0.581	0.458	0.445	0.241	0.225	0.225	0.225	0.225
150	3.095	2.443	2.032	1.443	1.059	0.755	0.691	0.650	0.644	0.517	0.503	0.290	0.225	0.225	0.225	0.225
155	3.282	2.627	2.217	1.542	1.144	0.829	0.763	0.720	0.714	0.581	0.567	0.345	0.264	0.225	0.225	0.225
160	3.477	2.820	2.412	1.650	1.238	0.910	0.842	0.797	0.791	0.652	0.637	0.405	0.321	0.225	0.225	0.225
165	3.682	3.023	2.619	1.767	1.341	1.000	0.929	0.882	0.876	0.731	0.715	0.473	0.384	0.251	0.225	0.225
170	-	3.238	2.837	1.940	1.454	1.099	1.026	0.977	0.971	0.819	0.803	0.548	0.454	0.315	0.225	0.225
175	-	3.464	3.069	2.198	1.579	1.210	1.134	1.084	1.077	0.918	0.901	0.633	0.534	0.387	0.225	0.225

- 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	1.259	1.080	0.965	0.693	0.431	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225
35	1.330	1.146	1.028	0.748	0.484	0.231	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225
40	1.405	1.215	1.093	0.805	0.537	0.285	0.226	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225
45	1.485	1.288	1.162	0.864	0.592	0.339	0.281	0.244	0.239	0.225	0.225	0.225	0.225	0.225	0.225	0.225
50	1.571	1.365	1.234	0.925	0.647	0.393	0.335	0.298	0.293	0.225	0.225	0.225	0.225	0.225	0.225	0.225
55	1.662	1.447	1.309	0.988	0.704	0.448	0.390	0.352	0.347	0.227	0.225	0.225	0.225	0.225	0.225	0.225
60	1.759	1.533	1.389	1.053	0.762	0.503	0.444	0.407	0.402	0.282	0.268	0.225	0.225	0.225	0.225	0.225
65	1.878	1.624	1.473	1.121	0.821	0.559	0.499	0.461	0.457	0.337	0.323	0.225	0.225	0.225	0.225	0.225
70	2.088	1.721	1.562	1.192	0.882	0.615	0.555	0.516	0.511	0.391	0.377	0.225	0.225	0.225	0.225	0.225
75	2.311	1.824	1.655	1.265	0.943	0.671	0.610	0.571	0.566	0.446	0.432	0.225	0.225	0.225	0.225	0.225
80	2.547	2.011	1.754	1.340	1.006	0.728	0.666	0.627	0.622	0.500	0.486	0.275	0.225	0.225	0.225	0.225
85	2.798	2.227	1.871	1.419	1.071	0.785	0.722	0.682	0.677	0.554	0.539	0.328	0.250	0.225	0.225	0.225
90	3.066	2.457	2.080	1.501	1.137	0.843	0.778	0.737	0.732	0.607	0.593	0.380	0.303	0.225	0.225	0.225
95	3.352	2.702	2.302	1.586	1.204	0.901	0.835	0.793	0.788	0.661	0.646	0.432	0.355	0.243	0.225	0.225
100	3.657	2.962	2.538	1.675	1.273	0.960	0.891	0.849	0.844	0.714	0.699	0.483	0.406	0.294	0.225	0.225
105	3.819	3.120	2.694	1.751	1.339	1.017	0.946	0.903	0.897	0.764	0.748	0.526	0.447	0.331	0.225	0.225
110	-	3.284	2.858	1.832	1.409	1.077	1.005	0.960	0.955	0.817	0.801	0.572	0.490	0.370	0.225	0.225
115	-	3.455	3.028	1.993	1.484	1.142	1.068	1.022	1.016	0.874	0.857	0.620	0.536	0.413	0.225	0.225
120	-	3.633	3.206	2.179	1.564	1.211	1.135	1.087	1.081	0.935	0.918	0.673	0.585	0.458	0.257	0.225
125	-	3.819	3.393	2.375	1.649	1.285	1.207	1.158	1.152	1.000	0.983	0.730	0.639	0.507	0.299	0.225
130	-	-	3.588	2.581	1.740	1.365	1.285	1.234	1.228	1.071	1.053	0.791	0.697	0.560	0.345	0.225
135	-	-	3.793	2.799	1.839	1.452	1.369	1.317	1.310	1.147	1.129	0.857	0.760	0.618	0.394	0.225
140	-	-	-	3.030	2.059	1.545	1.460	1.406	1.399	1.231	1.211	0.930	0.828	0.681	0.448	0.225
145	-	-	-	3.274	2.303	1.646	1.559	1.503	1.496	1.321	1.301	1.009	0.903	0.751	0.508	0.225
150	-	-	-	3.534	2.564	1.757	1.667	1.609	1.602	1.420	1.400	1.096	0.985	0.827	0.573	0.233
155	-	-	-	3.810	2.846	1.917	1.785	1.726	1.718	1.529	1.508	1.191	1.076	0.911	0.646	0.290
160	-	-	-	-	3.149	2.209	2.000	1.863	1.846	1.649	1.627	1.297	1.176	1.004	0.726	0.353
165	-	-	-	-	3.477	2.527	2.315	2.174	2.156	1.783	1.759	1.415	1.288	1.108	0.816	0.425
170	-	-	-	-	3.832	2.874	2.657	2.513	2.494	2.033	1.980	1.548	1.413	1.226	0.918	0.506
175	-	-	-	-	-	3.254	3.032	2.883	2.863	2.389	2.334	1.697	1.554	1.359	1.033	0.599

- 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	2.059	1.784	1.671	1.389	1.111	0.834	0.769	0.726	0.720	0.580	0.563	0.297	0.225	0.225	0.225	0.225
35	2.239	1.887	1.749	1.456	1.170	0.890	0.824	0.781	0.775	0.634	0.617	0.353	0.249	0.225	0.225	0.225
40	2.427	2.056	1.832	1.524	1.231	0.946	0.880	0.835	0.830	0.689	0.672	0.409	0.306	0.225	0.225	0.225
45	2.624	2.232	1.985	1.596	1.292	1.002	0.935	0.890	0.885	0.743	0.726	0.464	0.362	0.225	0.225	0.225
50	2.832	2.416	2.158	1.669	1.355	1.059	0.991	0.946	0.940	0.797	0.780	0.518	0.417	0.267	0.225	0.225
55	3.050	2.611	2.340	1.746	1.419	1.117	1.047	1.001	0.995	0.851	0.834	0.572	0.471	0.322	0.225	0.225
60	3.281	2.815	2.530	1.825	1.485	1.174	1.103	1.057	1.051	0.905	0.888	0.625	0.525	0.377	0.225	0.225
65	3.525	3.030	2.730	1.970	1.552	1.232	1.159	1.112	1.106	0.959	0.941	0.677	0.578	0.431	0.225	0.225
70	3.782	3.256	2.941	2.144	1.620	1.291	1.216	1.168	1.162	1.012	0.994	0.729	0.629	0.483	0.243	0.225
75	-	3.496	3.162	2.326	1.690	1.350	1.273	1.224	1.218	1.065	1.047	0.780	0.680	0.535	0.298	0.225
80	-	3.749	3.395	2.517	1.761	1.409	1.330	1.280	1.274	1.118	1.100	0.830	0.731	0.586	0.352	0.225
85	-	-	3.641	2.716	1.834	1.469	1.387	1.337	1.330	1.171	1.152	0.880	0.780	0.636	0.405	0.225
90	-	-	-	2.925	1.984	1.530	1.445	1.393	1.387	1.224	1.205	0.929	0.829	0.685	0.457	0.225
95	-	-	-	3.145	2.153	1.590	1.503	1.450	1.443	1.276	1.257	0.977	0.878	0.733	0.507	0.225
100	-	-	-	3.375	2.328	1.652	1.561	1.507	1.500	1.329	1.309	1.025	0.925	0.780	0.557	0.268
105	-	-	-	3.581	2.526	1.730	1.638	1.582	1.575	1.399	1.378	1.086	0.983	0.834	0.604	0.306
110	-	-	-	3.797	2.735	1.815	1.719	1.662	1.655	1.473	1.452	1.151	1.045	0.891	0.654	0.346
115	-	-	-	-	2.957	1.982	1.807	1.748	1.740	1.553	1.532	1.221	1.111	0.953	0.708	0.389
120	-	-	-	-	3.191	2.203	1.975	1.840	1.832	1.639	1.617	1.296	1.182	1.019	0.766	0.436
125	-	-	-	-	3.440	2.438	2.209	2.064	2.045	1.732	1.708	1.377	1.259	1.090	0.828	0.487
130	-	-	-	-	3.704	2.689	2.459	2.310	2.291	1.831	1.807	1.465	1.343	1.168	0.896	0.542
135	-	-	-	-	-	2.957	2.726	2.573	2.554	2.069	2.010	1.560	1.433	1.252	0.970	0.603
140	-	-	-	-	-	3.245	3.011	2.855	2.836	2.343	2.285	1.664	1.531	1.344	1.051	0.669
145	-	-	-	-	-	3.554	3.318	3.157	3.137	2.637	2.578	1.777	1.639	1.445	1.139	0.742
150	-	-	-	-	-	-	3.646	3.481	3.461	2.951	2.891	1.977	1.757	1.555	1.236	0.823
155	-	-	-	-	-	-	-	3.831	3.810	3.288	3.227	2.296	1.942	1.678	1.344	0.912
160	-	-	-	-	-	-	-	-	-	3.651	3.588	2.636	2.273	1.814	1.464	1.013
165	-	-	-	-	-	-	-	-	-	-	-	3.000	2.627	2.109	1.598	1.127
170	-	-	-	-	-	-	-	-	-	-	-	3.392	3.006	2.465	1.749	1.256
175	-	-	-	-	-	-	-	-	-	-	-	3.813	3.414	2.843	1.984	1.404

- 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: Rectangular Bar
Fire Resistance Period: 75 Minutes**

Thickness (mm) Required for a Design Temperature of

Section Factor (m ⁻¹)	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	3.436	3.076	2.865	2.325	1.791	1.491	1.420	1.370	1.364	1.208	1.190	0.888	0.768	0.586	0.269	0.225
35	3.648	3.268	3.046	2.482	1.870	1.549	1.476	1.426	1.419	1.262	1.243	0.941	0.821	0.640	0.329	0.225
40	3.871	3.468	3.236	2.646	2.014	1.608	1.533	1.481	1.475	1.316	1.296	0.993	0.873	0.694	0.388	0.225
45	-	3.678	3.433	2.817	2.161	1.666	1.590	1.537	1.531	1.369	1.349	1.044	0.925	0.747	0.445	0.225
50	-	-	3.640	2.994	2.313	1.726	1.647	1.593	1.587	1.422	1.402	1.094	0.976	0.798	0.501	0.225
55	-	-	3.857	3.178	2.468	1.785	1.704	1.650	1.643	1.475	1.454	1.144	1.026	0.849	0.556	0.225
60	-	-	-	3.371	2.628	1.846	1.762	1.706	1.699	1.528	1.507	1.194	1.075	0.899	0.610	0.259
65	-	-	-	3.572	2.792	1.985	1.819	1.763	1.756	1.580	1.559	1.242	1.124	0.948	0.662	0.314
70	-	-	-	3.781	2.961	2.127	1.921	1.820	1.813	1.633	1.611	1.290	1.171	0.996	0.713	0.368
75	-	-	-	-	3.135	2.270	2.059	1.920	1.902	1.685	1.663	1.338	1.218	1.043	0.763	0.420
80	-	-	-	-	3.313	2.414	2.198	2.057	2.039	1.737	1.714	1.385	1.265	1.089	0.812	0.469
85	-	-	-	-	3.497	2.561	2.339	2.194	2.176	1.789	1.766	1.431	1.311	1.135	0.860	0.517
90	-	-	-	-	3.687	2.708	2.480	2.332	2.314	1.840	1.817	1.477	1.356	1.179	0.907	0.564
95	-	-	-	-	3.882	2.857	2.624	2.471	2.452	1.962	1.901	1.522	1.400	1.223	0.953	0.609
100	-	-	-	-	-	3.008	2.769	2.611	2.591	2.091	2.030	1.567	1.444	1.266	0.998	0.652
105	-	-	-	-	-	3.240	2.999	2.838	2.819	2.315	2.254	1.646	1.519	1.337	1.060	0.703
110	-	-	-	-	-	3.485	3.243	3.078	3.059	2.551	2.490	1.731	1.600	1.412	1.126	0.758
115	-	-	-	-	-	3.745	3.502	3.333	3.314	2.800	2.739	1.822	1.686	1.493	1.197	0.818
120	-	-	-	-	-	-	3.776	3.603	3.584	3.064	3.003	2.036	1.779	1.580	1.274	0.882
125	-	-	-	-	-	-	-	-	3.871	3.344	3.282	2.303	1.933	1.674	1.358	0.951
130	-	-	-	-	-	-	-	-	-	3.641	3.579	2.585	2.208	1.775	1.448	1.027
135	-	-	-	-	-	-	-	-	-	-	-	2.884	2.499	1.947	1.546	1.110
140	-	-	-	-	-	-	-	-	-	-	-	3.201	2.806	2.243	1.653	1.201
145	-	-	-	-	-	-	-	-	-	-	-	3.537	3.133	2.554	1.770	1.301
150	-	-	-	-	-	-	-	-	-	-	-	-	3.481	2.883	1.977	1.412
155	-	-	-	-	-	-	-	-	-	-	-	-	3.851	3.231	2.304	1.535
160	-	-	-	-	-	-	-	-	-	-	-	-	-	3.599	2.633	1.673
165	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.965	1.829
170	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.298	2.124
175	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.633	2.398

- 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 5: Rectangular Bar
Fire Resistance Period: 90 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	-	-	-	3.716	3.174	2.536	2.365	2.245	2.230	1.837	1.816	1.480	1.344	1.138	0.785	0.374
35	-	-	-	-	3.333	2.675	2.500	2.380	2.365	1.955	1.903	1.528	1.393	1.188	0.839	0.435
40	-	-	-	-	3.496	2.816	2.636	2.515	2.500	2.085	2.033	1.576	1.441	1.236	0.892	0.492
45	-	-	-	-	3.663	2.958	2.773	2.651	2.636	2.215	2.163	1.624	1.488	1.283	0.943	0.548
50	-	-	-	-	3.834	3.102	2.912	2.788	2.772	2.345	2.292	1.671	1.534	1.330	0.994	0.601
55	-	-	-	-	-	3.247	3.052	2.925	2.909	2.474	2.422	1.717	1.580	1.376	1.043	0.652
60	-	-	-	-	-	3.393	3.193	3.063	3.047	2.604	2.551	1.763	1.625	1.421	1.091	0.701
65	-	-	-	-	-	3.542	3.336	3.201	3.185	2.733	2.679	1.808	1.670	1.465	1.138	0.749
70	-	-	-	-	-	3.691	3.480	3.340	3.324	2.862	2.808	1.864	1.713	1.508	1.183	0.794
75	-	-	-	-	-	3.843	3.625	3.480	3.463	2.991	2.936	1.983	1.756	1.551	1.228	0.838
80	-	-	-	-	-	-	3.772	3.620	3.603	3.120	3.064	2.101	1.799	1.592	1.272	0.880
85	-	-	-	-	-	-	-	3.761	3.744	3.249	3.191	2.216	1.841	1.634	1.315	0.921
90	-	-	-	-	-	-	-	-	-	3.378	3.319	2.329	1.944	1.674	1.357	0.961
95	-	-	-	-	-	-	-	-	-	3.507	3.446	2.440	2.054	1.713	1.398	0.999
100	-	-	-	-	-	-	-	-	-	3.635	3.572	2.550	2.162	1.752	1.438	1.035
105	-	-	-	-	-	-	-	-	-	-	3.837	2.803	2.408	1.839	1.515	1.101
110	-	-	-	-	-	-	-	-	-	-	-	3.069	2.667	2.081	1.598	1.171
115	-	-	-	-	-	-	-	-	-	-	-	3.349	2.939	2.346	1.687	1.246
120	-	-	-	-	-	-	-	-	-	-	-	3.644	3.226	2.623	1.783	1.328
125	-	-	-	-	-	-	-	-	-	-	-	-	3.529	2.913	1.970	1.416
130	-	-	-	-	-	-	-	-	-	-	-	-	3.848	3.218	2.293	1.512
135	-	-	-	-	-	-	-	-	-	-	-	-	-	3.539	2.617	1.618
140	-	-	-	-	-	-	-	-	-	-	-	-	-	3.876	2.943	1.733
145	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.271	1.895
150	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.601	2.312
155	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.661
160	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.956
165	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.209
170	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.429
175	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.622

- 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 6: Rectangular Bar
Fire Resistance Period: IO5 Minutes**

Thickness (mm) Required for a Design Temperature of

Section Factor (m-l)	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	-	-	-	-	-	-	3.867	3.773	3.761	3.380	3.339	2.473	2.063	1.691	1.302	0.875
35	-	-	-	-	-	-	-	-	-	3.509	3.468	2.596	2.189	1.735	1.349	0.924
40	-	-	-	-	-	-	-	-	-	3.638	3.596	2.716	2.312	1.778	1.396	0.972
45	-	-	-	-	-	-	-	-	-	3.767	3.725	2.834	2.431	1.820	1.441	1.018
50	-	-	-	-	-	-	-	-	-	-	3.852	2.950	2.548	1.902	1.486	1.061
55	-	-	-	-	-	-	-	-	-	-	-	3.064	2.661	2.039	1.529	1.103
60	-	-	-	-	-	-	-	-	-	-	-	3.176	2.772	2.166	1.572	1.144
65	-	-	-	-	-	-	-	-	-	-	-	3.285	2.880	2.285	1.613	1.183
70	-	-	-	-	-	-	-	-	-	-	-	3.393	2.985	2.396	1.654	1.220
75	-	-	-	-	-	-	-	-	-	-	-	3.499	3.088	2.500	1.693	1.256
80	-	-	-	-	-	-	-	-	-	-	-	3.602	3.188	2.598	1.732	1.291
85	-	-	-	-	-	-	-	-	-	-	-	3.705	3.286	2.690	1.770	1.325
90	-	-	-	-	-	-	-	-	-	-	-	3.805	3.381	2.777	1.807	1.357
95	-	-	-	-	-	-	-	-	-	-	-	-	3.474	2.859	1.843	1.389
100	-	-	-	-	-	-	-	-	-	-	-	-	3.565	2.937	1.964	1.419
105	-	-	-	-	-	-	-	-	-	-	-	-	3.846	3.208	2.281	1.498
110	-	-	-	-	-	-	-	-	-	-	-	-	-	3.493	2.601	1.583
115	-	-	-	-	-	-	-	-	-	-	-	-	-	3.790	2.922	1.674
120	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.245	1.773
125	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.570	2.088
130	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.711
135	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.181
140	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.549
145	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.844
150	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
155	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
160	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
165	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
170	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
175	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

- 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 7: 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	-	3.732	3.190	1.799	1.367	1.012	0.932	0.884	0.878	0.722	0.704	0.427	0.318	0.214	0.214	0.214
30	3.465	2.648	2.118	1.443	1.057	0.749	0.678	0.637	0.632	0.495	0.479	0.236	0.214	0.214	0.214	0.214
35	2.679	1.905	1.633	1.174	0.826	0.551	0.489	0.452	0.447	0.325	0.311	0.214	0.214	0.214	0.214	0.214
40	2.094	1.595	1.386	0.963	0.646	0.398	0.342	0.308	0.303	0.214	0.214	0.214	0.214	0.214	0.214	0.214
45	1.724	1.381	1.186	0.793	0.503	0.276	0.225	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214
50	1.525	1.203	1.020	0.654	0.387	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214
55	1.359	1.054	0.881	0.537	0.290	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214
60	1.217	0.928	0.762	0.438	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214
65	1.095	0.818	0.660	0.353	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214
70	0.989	0.723	0.570	0.279	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214
75	0.959	0.702	0.554	0.270	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214
80	0.929	0.681	0.538	0.261	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214
85	0.901	0.660	0.522	0.252	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214
90	0.873	0.640	0.506	0.243	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214
95	0.845	0.620	0.490	0.234	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214
100	0.818	0.600	0.475	0.225	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214
105	0.792	0.581	0.459	0.216	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214
110	0.766	0.562	0.444	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214
115	0.741	0.543	0.429	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214
120	0.717	0.524	0.413	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214
125	0.693	0.505	0.398	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214
130	0.669	0.487	0.384	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214
135	0.646	0.469	0.369	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214

- 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 8: 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	-	-	-	-	-	3.319	2.955	2.728	2.699	1.970	1.888	1.473	1.340	1.135	0.787	0.279
30	-	-	-	-	2.935	1.793	1.706	1.650	1.643	1.469	1.449	1.133	1.014	0.833	0.529	0.214
35	-	-	-	2.987	1.820	1.465	1.387	1.338	1.332	1.177	1.158	0.878	0.770	0.609	0.340	0.214
40	-	3.772	3.278	2.134	1.528	1.209	1.139	1.095	1.090	0.949	0.933	0.679	0.582	0.436	0.214	0.214
45	3.854	3.073	2.599	1.685	1.296	1.006	0.942	0.901	0.896	0.768	0.753	0.520	0.431	0.299	0.214	0.214
50	3.269	2.523	2.072	1.466	1.106	0.839	0.780	0.742	0.738	0.619	0.606	0.391	0.308	0.214	0.214	0.214
55	2.792	2.079	1.733	1.283	0.948	0.700	0.646	0.610	0.606	0.496	0.483	0.282	0.214	0.214	0.214	0.214
60	2.396	1.762	1.551	1.127	0.815	0.583	0.532	0.498	0.494	0.391	0.380	0.214	0.214	0.214	0.214	0.214
65	2.062	1.595	1.394	0.994	0.701	0.482	0.435	0.403	0.399	0.302	0.291	0.214	0.214	0.214	0.214	0.214
70	1.794	1.450	1.258	0.878	0.603	0.395	0.350	0.320	0.316	0.224	0.214	0.214	0.214	0.214	0.214	0.214
75	1.754	1.424	1.239	0.869	0.598	0.391	0.347	0.317	0.313	0.221	0.214	0.214	0.214	0.214	0.214	0.214
80	1.715	1.399	1.220	0.860	0.593	0.388	0.344	0.313	0.310	0.219	0.214	0.214	0.214	0.214	0.214	0.214
85	1.677	1.374	1.201	0.851	0.588	0.384	0.340	0.310	0.307	0.216	0.214	0.214	0.214	0.214	0.214	0.214
90	1.640	1.349	1.183	0.842	0.583	0.380	0.337	0.307	0.303	0.214	0.214	0.214	0.214	0.214	0.214	0.214
95	1.604	1.325	1.164	0.833	0.579	0.377	0.334	0.304	0.300	0.214	0.214	0.214	0.214	0.214	0.214	0.214
100	1.568	1.301	1.146	0.824	0.574	0.373	0.330	0.301	0.297	0.214	0.214	0.214	0.214	0.214	0.214	0.214
105	1.533	1.277	1.128	0.815	0.569	0.369	0.327	0.298	0.294	0.214	0.214	0.214	0.214	0.214	0.214	0.214
110	1.499	1.254	1.110	0.805	0.564	0.365	0.323	0.295	0.291	0.214	0.214	0.214	0.214	0.214	0.214	0.214
115	1.466	1.231	1.092	0.796	0.559	0.361	0.320	0.291	0.288	0.214	0.214	0.214	0.214	0.214	0.214	0.214
120	1.434	1.208	1.074	0.787	0.554	0.358	0.316	0.288	0.285	0.214	0.214	0.214	0.214	0.214	0.214	0.214
125	1.402	1.185	1.056	0.778	0.549	0.354	0.313	0.285	0.281	0.214	0.214	0.214	0.214	0.214	0.214	0.214
130	1.371	1.163	1.039	0.769	0.543	0.350	0.309	0.282	0.278	0.214	0.214	0.214	0.214	0.214	0.214	0.214
135	1.341	1.141	1.022	0.760	0.538	0.346	0.306	0.278	0.275	0.214	0.214	0.214	0.214	0.214	0.214	0.214

- 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 9: 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	-	-	-	-	-	-	-	-	-	-	-	-	3.637	2.776	1.719	1.128
30	-	-	-	-	-	-	-	-	-	3.693	3.618	2.427	2.010	1.671	1.317	0.820
35	-	-	-	-	-	3.337	3.071	2.908	2.887	2.374	2.314	1.662	1.533	1.339	1.023	0.591
40	-	-	-	-	3.316	2.325	2.111	1.977	1.960	1.706	1.685	1.376	1.259	1.082	0.798	0.415
45	-	-	-	3.538	2.468	1.735	1.659	1.610	1.603	1.449	1.430	1.148	1.040	0.879	0.620	0.275
50	-	-	-	2.825	1.835	1.502	1.432	1.387	1.381	1.238	1.221	0.961	0.861	0.713	0.477	0.214
55	-	3.789	3.313	2.266	1.607	1.308	1.242	1.201	1.195	1.063	1.047	0.805	0.712	0.575	0.358	0.214
60	-	3.273	2.817	1.817	1.423	1.143	1.083	1.043	1.038	0.914	0.899	0.673	0.586	0.459	0.259	0.214
65	3.582	2.840	2.404	1.635	1.265	1.003	0.946	0.908	0.904	0.787	0.773	0.560	0.479	0.360	0.214	0.214
70	3.186	2.472	2.055	1.477	1.129	0.881	0.827	0.792	0.787	0.677	0.664	0.462	0.386	0.275	0.214	0.214
75	3.031	2.377	2.000	1.468	1.126	0.878	0.825	0.790	0.785	0.675	0.662	0.461	0.385	0.275	0.214	0.214
80	2.895	2.295	1.952	1.459	1.123	0.876	0.823	0.787	0.783	0.673	0.660	0.460	0.384	0.274	0.214	0.214
85	2.775	2.223	1.912	1.449	1.119	0.874	0.820	0.785	0.781	0.671	0.658	0.459	0.384	0.274	0.214	0.214
90	2.667	2.160	1.876	1.440	1.116	0.871	0.818	0.783	0.779	0.669	0.656	0.458	0.383	0.274	0.214	0.214
95	2.570	2.104	1.845	1.431	1.113	0.869	0.816	0.781	0.776	0.667	0.654	0.457	0.382	0.274	0.214	0.214
100	2.483	2.054	1.817	1.422	1.110	0.866	0.814	0.779	0.774	0.665	0.652	0.456	0.382	0.274	0.214	0.214
105	2.404	2.009	1.796	1.413	1.107	0.864	0.811	0.777	0.772	0.663	0.650	0.455	0.381	0.273	0.214	0.214
110	2.332	1.968	1.775	1.404	1.104	0.861	0.809	0.774	0.770	0.661	0.648	0.454	0.381	0.273	0.214	0.214
115	2.266	1.931	1.755	1.395	1.100	0.859	0.807	0.772	0.768	0.659	0.646	0.453	0.380	0.273	0.214	0.214
120	2.206	1.898	1.735	1.386	1.097	0.856	0.804	0.770	0.766	0.657	0.644	0.452	0.379	0.273	0.214	0.214
125	2.150	1.867	1.714	1.377	1.094	0.854	0.802	0.768	0.763	0.655	0.642	0.451	0.379	0.273	0.214	0.214
130	2.098	1.839	1.694	1.368	1.091	0.851	0.800	0.766	0.761	0.653	0.640	0.450	0.378	0.273	0.214	0.214
135	2.050	1.813	1.674	1.358	1.087	0.848	0.797	0.763	0.759	0.651	0.638	0.449	0.377	0.272	0.214	0.214

- 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 IO: Circular Bar
Fire Resistance Period: 75 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	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.285
30	-	-	-	-	-	-	-	-	-	-	-	-	-	3.682	2.538	1.542
35	-	-	-	-	-	-	-	-	-	-	-	3.418	3.004	2.424	1.705	1.220
40	-	-	-	-	-	-	-	-	-	3.378	3.319	2.413	2.086	1.729	1.400	0.972
45	-	-	-	-	-	3.344	3.116	2.976	2.958	2.523	2.472	1.775	1.648	1.458	1.159	0.775
50	-	-	-	-	3.504	2.599	2.406	2.287	2.271	1.901	1.855	1.531	1.413	1.239	0.964	0.614
55	-	-	-	3.851	2.825	2.029	1.863	1.791	1.784	1.630	1.610	1.328	1.218	1.056	0.803	0.482
60	-	-	-	3.247	2.284	1.704	1.633	1.588	1.582	1.438	1.419	1.156	1.053	0.903	0.668	0.370
65	-	-	3.787	2.749	1.841	1.523	1.457	1.414	1.409	1.273	1.256	1.009	0.912	0.771	0.553	0.274
70	-	3.799	3.331	2.333	1.655	1.367	1.304	1.264	1.258	1.131	1.114	0.881	0.790	0.658	0.453	0.214
75	-	3.606	3.177	2.271	1.653	1.365	1.303	1.263	1.257	1.129	1.113	0.880	0.790	0.658	0.453	0.214
80	-	3.439	3.044	2.219	1.652	1.364	1.302	1.261	1.256	1.128	1.112	0.879	0.789	0.658	0.453	0.214
85	-	3.294	2.930	2.175	1.650	1.363	1.301	1.260	1.255	1.127	1.111	0.879	0.789	0.657	0.453	0.214
90	3.773	3.167	2.830	2.137	1.649	1.362	1.299	1.259	1.254	1.126	1.110	0.878	0.788	0.657	0.453	0.214
95	3.619	3.054	2.742	2.104	1.648	1.361	1.298	1.258	1.253	1.124	1.108	0.877	0.788	0.657	0.453	0.214
100	3.481	2.953	2.664	2.075	1.646	1.359	1.297	1.257	1.251	1.123	1.107	0.876	0.787	0.657	0.453	0.214
105	3.356	2.862	2.594	2.049	1.645	1.358	1.296	1.256	1.250	1.122	1.106	0.876	0.787	0.657	0.453	0.214
110	3.242	2.780	2.531	2.026	1.643	1.357	1.295	1.254	1.249	1.121	1.105	0.875	0.786	0.657	0.453	0.214
115	3.137	2.706	2.474	2.006	1.642	1.356	1.293	1.253	1.248	1.119	1.103	0.874	0.786	0.657	0.453	0.214
120	3.041	2.638	2.423	1.987	1.641	1.355	1.292	1.252	1.247	1.118	1.102	0.873	0.785	0.657	0.453	0.214
125	2.952	2.576	2.375	1.971	1.639	1.353	1.291	1.251	1.246	1.117	1.101	0.873	0.785	0.656	0.453	0.214
130	2.871	2.519	2.332	1.955	1.638	1.352	1.290	1.250	1.244	1.116	1.100	0.872	0.784	0.656	0.453	0.214
135	2.795	2.466	2.293	1.941	1.636	1.351	1.288	1.248	1.243	1.114	1.098	0.871	0.784	0.656	0.453	0.214

- 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 II: Circular Bar
Fire Resistance Period: 90 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	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.889
35	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.122	1.883
40	-	-	-	-	-	-	-	-	-	-	-	-	3.635	3.069	2.213	1.529
45	-	-	-	-	-	-	-	-	-	-	-	3.095	2.762	2.286	1.698	1.274
50	-	-	-	-	-	-	3.854	3.707	3.688	3.235	3.182	2.407	2.122	1.765	1.452	1.067
55	-	-	-	-	-	3.348	3.140	3.012	2.996	2.601	2.554	1.883	1.725	1.538	1.248	0.896
60	-	-	-	-	3.616	2.759	2.577	2.465	2.450	2.104	2.060	1.639	1.520	1.346	1.077	0.751
65	-	-	-	-	3.052	2.281	2.121	2.022	2.009	1.759	1.738	1.457	1.346	1.182	0.932	0.628
70	-	-	-	3.531	2.582	1.887	1.781	1.736	1.730	1.584	1.565	1.299	1.194	1.041	0.806	0.521
75	-	-	-	3.363	2.511	1.881	1.781	1.736	1.729	1.583	1.564	1.299	1.194	1.041	0.806	0.521
80	-	-	-	3.223	2.451	1.876	1.781	1.735	1.729	1.583	1.564	1.298	1.194	1.041	0.806	0.521
85	-	-	-	3.104	2.401	1.872	1.781	1.735	1.729	1.583	1.563	1.298	1.193	1.041	0.806	0.521
90	-	-	3.784	3.001	2.358	1.868	1.781	1.735	1.729	1.582	1.563	1.298	1.193	1.041	0.806	0.521
95	-	-	3.639	2.912	2.321	1.865	1.781	1.735	1.729	1.582	1.562	1.297	1.193	1.041	0.806	0.521
100	-	3.851	3.511	2.834	2.288	1.862	1.780	1.735	1.729	1.581	1.562	1.297	1.193	1.041	0.806	0.521
105	-	3.715	3.396	2.764	2.259	1.860	1.780	1.735	1.728	1.581	1.562	1.296	1.192	1.040	0.806	0.521
110	-	3.592	3.293	2.703	2.234	1.858	1.780	1.734	1.728	1.580	1.561	1.296	1.192	1.040	0.806	0.521
115	-	3.480	3.199	2.647	2.211	1.856	1.780	1.734	1.728	1.580	1.561	1.295	1.192	1.040	0.806	0.521
120	-	3.378	3.114	2.597	2.191	1.854	1.780	1.734	1.728	1.580	1.560	1.295	1.191	1.040	0.806	0.521
125	3.755	3.284	3.037	2.552	2.172	1.852	1.780	1.734	1.728	1.579	1.560	1.295	1.191	1.040	0.806	0.521
130	3.643	3.199	2.966	2.511	2.155	1.851	1.780	1.734	1.727	1.579	1.559	1.294	1.191	1.040	0.806	0.521
135	3.539	3.120	2.901	2.473	2.140	1.850	1.780	1.733	1.727	1.578	1.559	1.294	1.191	1.040	0.806	0.521

- 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 I2: Circular Bar
Fire Resistance Period: IO5 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	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
35	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.211
40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.503	2.335
45	-	-	-	-	-	-	-	-	-	-	-	-	-	3.519	2.672	1.774
50	-	-	-	-	-	-	-	-	-	-	-	3.591	3.256	2.779	2.055	1.520
55	-	-	-	-	-	-	-	-	-	3.775	3.723	2.926	2.634	2.212	1.693	1.310
60	-	-	-	-	-	-	3.720	3.585	3.567	3.152	3.104	2.403	2.142	1.789	1.487	1.133
65	-	-	-	-	-	3.350	3.155	3.035	3.019	2.649	2.605	1.981	1.779	1.594	1.311	0.981
70	-	-	-	-	3.691	2.863	2.688	2.581	2.566	2.235	2.194	1.717	1.599	1.424	1.159	0.851
75	-	-	-	-	3.518	2.776	2.617	2.519	2.506	2.202	2.164	1.717	1.598	1.424	1.159	0.851
80	-	-	-	-	3.375	2.702	2.556	2.467	2.455	2.175	2.140	1.717	1.598	1.424	1.159	0.851
85	-	-	-	-	3.253	2.639	2.504	2.422	2.411	2.150	2.118	1.717	1.598	1.424	1.159	0.851
90	-	-	-	-	3.149	2.584	2.459	2.383	2.372	2.129	2.099	1.717	1.598	1.424	1.159	0.851
95	-	-	-	3.720	3.059	2.536	2.420	2.348	2.338	2.111	2.082	1.717	1.598	1.424	1.159	0.851
100	-	-	-	3.593	2.980	2.494	2.385	2.318	2.309	2.094	2.068	1.717	1.598	1.424	1.159	0.851
105	-	-	-	3.480	2.911	2.456	2.353	2.291	2.282	2.080	2.054	1.717	1.598	1.424	1.159	0.851
110	-	-	-	3.379	2.849	2.422	2.326	2.267	2.258	2.066	2.043	1.717	1.598	1.424	1.159	0.851
115	-	-	-	3.288	2.793	2.392	2.300	2.245	2.236	2.054	2.032	1.717	1.598	1.424	1.159	0.851
120	-	-	3.806	3.207	2.744	2.365	2.278	2.225	2.217	2.044	2.022	1.717	1.598	1.424	1.159	0.851
125	-	-	3.699	3.133	2.699	2.340	2.257	2.207	2.199	2.034	2.013	1.717	1.597	1.424	1.159	0.851
130	-	-	3.600	3.066	2.658	2.317	2.238	2.190	2.183	2.025	2.005	1.717	1.597	1.424	1.159	0.851
135	-	3.773	3.509	3.004	2.620	2.296	2.221	2.175	2.168	2.016	1.998	1.716	1.597	1.424	1.159	0.851

- 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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