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**Table I: Circular Solid Bar
Fire Resistance Period: 15 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	1.030	0.659	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478
30	0.928	0.598	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478
35	0.840	0.542	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478
40	0.763	0.485	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478
45	0.695	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478
50	0.634	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478
55	0.579	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478
60	0.531	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478
65	0.482	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478
70	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478
75	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478
80	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478
85	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478
90	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478
95	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478
100	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478
105	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478
110	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478
115	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478
120	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478
125	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478
130	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478
135	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478

Above figures are applicable to horizontal and vertical bars.

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: Circular Solid 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	3.032	1.993	1.611	1.084	0.755	0.542	0.506	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478
30	2.787	1.880	1.533	1.033	0.711	0.502	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478
35	2.576	1.776	1.459	0.982	0.666	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478
40	2.391	1.679	1.389	0.932	0.621	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478
45	2.228	1.589	1.321	0.882	0.575	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478
50	2.083	1.505	1.256	0.833	0.529	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478
55	1.953	1.427	1.194	0.784	0.482	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478
60	1.835	1.353	1.135	0.735	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478
65	1.729	1.284	1.078	0.687	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478
70	1.633	1.219	1.023	0.640	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478
75	1.487	1.101	0.915	0.543	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478
80	1.361	0.999	0.820	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478
85	1.249	0.908	0.737	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478
90	1.150	0.827	0.662	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478
95	1.061	0.755	0.596	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478
100	0.981	0.690	0.535	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478
105	0.910	0.631	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478
110	0.844	0.577	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478
115	0.785	0.528	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478
120	0.730	0.479	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478
125	0.680	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478
130	0.634	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478
135	0.591	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478

Above figures are applicable to horizontal and vertical bars.

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 3: Circular Solid 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	5.402	3.475	2.725	1.981	1.508	1.186	1.127	1.091	1.086	0.981	1.086	0.981	0.968	0.794	0.507	0.478
30	4.992	3.233	2.621	1.926	1.468	1.151	1.091	1.056	1.051	0.944	1.051	0.944	0.931	0.754	0.478	0.478
35	4.621	3.010	2.521	1.871	1.428	1.115	1.055	1.019	1.014	0.906	1.014	0.906	0.893	0.711	0.478	0.478
40	4.282	2.869	2.427	1.816	1.388	1.078	1.018	0.981	0.976	0.866	0.976	0.866	0.854	0.667	0.478	0.478
45	3.972	2.737	2.336	1.763	1.347	1.040	0.980	0.942	0.937	0.825	0.937	0.825	0.812	0.621	0.478	0.478
50	3.687	2.615	2.249	1.709	1.306	1.001	0.940	0.902	0.897	0.782	0.897	0.782	0.770	0.572	0.478	0.478
55	3.425	2.500	2.166	1.656	1.264	0.960	0.899	0.860	0.855	0.738	0.855	0.738	0.725	0.521	0.478	0.478
60	3.182	2.392	2.087	1.604	1.221	0.919	0.857	0.817	0.812	0.691	0.812	0.691	0.678	0.478	0.478	0.478
65	2.973	2.292	2.010	1.552	1.178	0.876	0.813	0.773	0.767	0.643	0.767	0.643	0.630	0.478	0.478	0.478
70	2.820	2.197	1.937	1.501	1.135	0.832	0.768	0.727	0.721	0.592	0.721	0.592	0.579	0.478	0.478	0.478
75	2.594	2.014	1.769	1.348	0.998	0.714	0.654	0.616	0.610	0.542	0.610	0.542	0.478	0.478	0.478	0.478
80	2.397	1.855	1.621	1.214	0.879	0.611	0.555	0.478	0.478	0.478	0.499	0.478	0.478	0.478	0.478	0.478
85	2.223	1.714	1.491	1.096	0.774	0.521	0.502	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478
90	2.069	1.588	1.375	0.991	0.681	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478
95	1.931	1.476	1.271	0.896	0.598	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478
100	1.808	1.375	1.178	0.811	0.523	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478
105	1.696	1.284	1.093	0.733	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478
110	1.595	1.201	1.016	0.663	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478
115	1.502	1.125	0.945	0.599	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478
120	1.417	1.055	0.881	0.540	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478
125	1.339	0.991	0.821	0.481	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478
130	1.267	0.932	0.766	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478
135	1.201	0.877	0.715	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478

Above figures are applicable to horizontal and vertical bars.

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 4: Circular Solid 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	-	5.444	4.470	2.878	2.261	1.830	1.747	1.697	1.689	1.537	1.518	1.272	1.184	1.060	0.866	0.604
30	-	5.132	4.227	2.818	2.226	1.804	1.721	1.671	1.663	1.511	1.492	1.242	1.153	1.027	0.828	0.562
35	-	4.842	3.999	2.759	2.191	1.776	1.694	1.644	1.637	1.484	1.465	1.212	1.120	0.992	0.788	0.517
40	-	4.571	3.786	2.701	2.155	1.748	1.667	1.616	1.609	1.455	1.437	1.179	1.086	0.955	0.746	0.478
45	-	4.317	3.586	2.643	2.119	1.719	1.638	1.587	1.580	1.426	1.407	1.146	1.050	0.916	0.700	0.478
50	-	4.078	3.398	2.586	2.083	1.690	1.609	1.558	1.551	1.395	1.377	1.110	1.012	0.874	0.651	0.478
55	5.239	3.854	3.220	2.529	2.046	1.659	1.579	1.527	1.520	1.363	1.345	1.073	0.972	0.830	0.599	0.478
60	4.928	3.643	3.052	2.472	2.008	1.628	1.547	1.496	1.489	1.330	1.311	1.033	0.930	0.783	0.543	0.478
65	4.639	3.444	2.942	2.417	1.970	1.595	1.515	1.463	1.456	1.295	1.276	0.992	0.885	0.733	0.487	0.478
70	4.371	3.255	2.851	2.361	1.932	1.562	1.482	1.429	1.422	1.259	1.240	0.948	0.838	0.679	0.478	0.478
75	3.964	2.927	2.622	2.153	1.742	1.393	1.318	1.269	1.262	1.110	1.093	0.821	0.718	0.570	0.478	0.478
80	3.600	2.711	2.422	1.970	1.576	1.246	1.176	1.129	1.123	0.981	0.965	0.710	0.613	0.478	0.478	0.478
85	3.273	2.520	2.245	1.808	1.430	1.117	1.051	1.007	1.001	0.868	0.853	0.613	0.522	0.478	0.478	0.478
90	2.989	2.350	2.088	1.664	1.300	1.003	0.940	0.899	0.893	0.768	0.754	0.528	0.478	0.478	0.478	0.478
95	2.802	2.198	1.947	1.534	1.184	0.901	0.842	0.803	0.797	0.679	0.666	0.478	0.478	0.478	0.478	0.478
100	2.634	2.061	1.820	1.418	1.080	0.810	0.753	0.717	0.711	0.599	0.587	0.478	0.478	0.478	0.478	0.478
105	2.483	1.937	1.705	1.312	0.985	0.728	0.674	0.639	0.634	0.527	0.516	0.478	0.478	0.478	0.478	0.478
110	2.345	1.824	1.600	1.216	0.899	0.653	0.602	0.568	0.564	0.478	0.478	0.478	0.478	0.478	0.478	0.478
115	2.219	1.721	1.505	1.128	0.821	0.585	0.536	0.504	0.493	0.478	0.478	0.478	0.478	0.478	0.478	0.478
120	2.104	1.627	1.417	1.047	0.749	0.523	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478
125	1.999	1.540	1.336	0.973	0.683	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478
130	1.901	1.460	1.261	0.904	0.622	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478
135	1.811	1.385	1.192	0.840	0.566	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478

Above figures are applicable to horizontal and vertical bars.

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: Circular Solid 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	-	-	-	5.453	3.014	2.474	2.368	2.302	2.292	2.094	2.069	1.749	1.636	1.474	1.226	0.887
30	-	-	-	5.159	2.984	2.456	2.351	2.285	2.276	2.078	2.053	1.731	1.616	1.452	1.199	0.856
35	-	-	-	4.889	2.953	2.438	2.333	2.268	2.259	2.062	2.037	1.712	1.595	1.429	1.171	0.822
40	-	-	-	4.642	2.922	2.418	2.315	2.251	2.241	2.044	2.020	1.692	1.573	1.404	1.141	0.785
45	-	-	5.316	4.414	2.891	2.399	2.297	2.232	2.223	2.027	2.002	1.670	1.549	1.378	1.109	0.745
50	-	-	5.076	4.203	2.859	2.379	2.278	2.213	2.205	2.008	1.983	1.648	1.525	1.350	1.074	0.702
55	-	5.469	4.851	4.008	2.827	2.358	2.258	2.194	2.185	1.989	1.964	1.625	1.499	1.321	1.037	0.654
60	-	5.211	4.638	3.827	2.795	2.337	2.238	2.174	2.165	1.969	1.944	1.600	1.472	1.289	0.998	0.602
65	-	4.968	4.436	3.658	2.762	2.315	2.217	2.153	2.144	1.948	1.923	1.574	1.443	1.256	0.955	0.545
70	-	4.738	4.245	3.500	2.729	2.292	2.196	2.131	2.123	1.926	1.901	1.547	1.412	1.220	0.909	0.487
75	-	4.275	3.775	2.957	2.486	2.072	1.982	1.922	1.914	1.730	1.707	1.376	1.251	1.072	0.780	0.478
80	5.053	3.864	3.359	2.725	2.273	1.881	1.797	1.740	1.732	1.560	1.539	1.229	1.111	0.943	0.670	0.478
85	4.653	3.495	3.000	2.520	2.086	1.714	1.634	1.580	1.573	1.411	1.391	1.100	0.988	0.831	0.574	0.478
90	4.291	3.164	2.801	2.337	1.919	1.565	1.489	1.439	1.432	1.279	1.261	0.986	0.881	0.732	0.478	0.478
95	3.962	2.919	2.623	2.173	1.770	1.433	1.361	1.313	1.307	1.162	1.145	0.884	0.785	0.644	0.478	0.478
100	3.661	2.746	2.462	2.025	1.636	1.314	1.246	1.201	1.194	1.057	1.041	0.794	0.699	0.565	0.478	0.478
105	3.386	2.590	2.317	1.891	1.515	1.207	1.142	1.099	1.093	0.963	0.948	0.712	0.622	0.487	0.478	0.478
110	3.132	2.447	2.185	1.768	1.405	1.110	1.048	1.007	1.001	0.877	0.863	0.638	0.552	0.478	0.478	0.478
115	2.937	2.317	2.064	1.657	1.305	1.022	0.962	0.923	0.918	0.799	0.786	0.571	0.483	0.478	0.478	0.478
120	2.791	2.198	1.953	1.554	1.213	0.941	0.884	0.846	0.841	0.728	0.716	0.510	0.478	0.478	0.478	0.478
125	2.658	2.089	1.851	1.460	1.128	0.867	0.812	0.776	0.771	0.663	0.651	0.478	0.478	0.478	0.478	0.478
130	2.535	1.987	1.757	1.373	1.050	0.798	0.746	0.711	0.706	0.603	0.591	0.478	0.478	0.478	0.478	0.478
135	2.421	1.893	1.669	1.292	0.978	0.735	0.684	0.651	0.647	0.547	0.537	0.478	0.478	0.478	0.478	0.478

Above figures are applicable to horizontal and vertical bars.

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: Circular Solid 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	-	-	-	-	-	4.681	2.988	2.907	2.896	2.651	2.619	2.227	2.088	1.888	1.585	1.170
30	-	-	-	-	-	4.229	2.980	2.900	2.889	2.645	2.614	2.220	2.079	1.877	1.570	1.149
35	-	-	-	-	-	3.919	2.972	2.893	2.881	2.640	2.608	2.212	2.069	1.866	1.553	1.127
40	-	-	-	-	-	3.691	2.964	2.885	2.874	2.634	2.603	2.204	2.059	1.853	1.536	1.103
45	-	-	-	-	-	3.518	2.956	2.877	2.866	2.627	2.597	2.195	2.049	1.840	1.517	1.077
50	-	-	-	-	-	3.382	2.947	2.869	2.858	2.621	2.590	2.186	2.038	1.826	1.497	1.048
55	-	-	-	-	5.279	3.271	2.938	2.861	2.850	2.614	2.584	2.177	2.026	1.812	1.475	1.017
60	-	-	-	-	5.053	3.180	2.929	2.852	2.842	2.607	2.577	2.167	2.013	1.796	1.452	0.983
65	-	-	-	-	4.848	3.104	2.919	2.843	2.833	2.600	2.570	2.156	2.000	1.779	1.427	0.945
70	-	-	-	-	4.662	3.039	2.909	2.834	2.824	2.592	2.563	2.145	1.986	1.761	1.400	0.903
75	-	-	5.186	4.772	3.701	2.752	2.646	2.575	2.566	2.349	2.322	1.932	1.783	1.574	1.236	0.773
80	-	5.182	4.689	4.109	2.970	2.517	2.417	2.351	2.342	2.139	2.113	1.747	1.608	1.411	1.094	0.661
85	-	4.745	4.246	3.523	2.741	2.310	2.216	2.153	2.145	1.954	1.930	1.586	1.455	1.269	0.971	0.564
90	-	4.351	3.849	3.010	2.538	2.128	2.039	1.979	1.971	1.791	1.768	1.443	1.319	1.144	0.862	0.478
95	5.217	3.994	3.490	2.811	2.357	1.965	1.880	1.824	1.816	1.645	1.624	1.316	1.199	1.033	0.766	0.478
100	4.862	3.670	3.164	2.632	2.193	1.819	1.738	1.685	1.677	1.515	1.495	1.203	1.091	0.934	0.680	0.478
105	4.537	3.374	2.929	2.469	2.046	1.687	1.610	1.559	1.552	1.398	1.379	1.101	0.995	0.845	0.603	0.478
110	4.237	3.102	2.769	2.321	1.911	1.567	1.494	1.445	1.439	1.292	1.274	1.009	0.907	0.764	0.533	0.478
115	3.960	2.914	2.623	2.186	1.789	1.459	1.389	1.342	1.336	1.195	1.179	0.925	0.828	0.478	0.478	0.478
120	3.704	2.770	2.489	2.062	1.677	1.359	1.292	1.247	1.241	1.107	1.091	0.848	0.755	0.478	0.478	0.478
125	3.466	2.637	2.366	1.947	1.573	1.268	1.203	1.161	1.155	1.026	1.011	0.778	0.688	0.478	0.478	0.478
130	3.245	2.515	2.252	1.841	1.478	1.184	1.122	1.081	1.075	0.952	0.937	0.713	0.627	0.478	0.478	0.478
135	3.038	2.402	2.146	1.743	1.390	1.106	1.046	1.007	1.001	0.883	0.869	0.654	0.571	0.478	0.478	0.478

Above figures are applicable to horizontal and vertical bars.

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 Solid 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	-	-	-	-	-	-	-	-	-	-	-	2.705	2.541	2.303	1.945	1.453
30	-	-	-	-	-	-	-	-	-	-	-	2.708	2.542	2.303	1.940	1.443
35	-	-	-	-	-	-	-	-	-	-	-	2.712	2.544	2.303	1.936	1.432
40	-	-	-	-	-	-	-	-	-	-	-	2.716	2.546	2.303	1.931	1.421
45	-	-	-	-	-	-	-	-	-	-	5.221	2.720	2.548	2.303	1.925	1.408
50	-	-	-	-	-	-	-	-	-	5.261	4.899	2.724	2.550	2.303	1.920	1.395
55	-	-	-	-	-	-	-	-	-	4.969	4.665	2.729	2.553	2.302	1.914	1.380
60	-	-	-	-	-	-	-	-	-	4.747	4.487	2.734	2.555	2.302	1.907	1.363
65	-	-	-	-	-	-	-	-	-	4.572	4.347	2.739	2.557	2.302	1.900	1.345
70	-	-	-	-	-	-	-	-	-	4.431	4.234	2.744	2.560	2.302	1.892	1.325
75	-	-	-	-	-	4.981	4.524	4.120	4.073	2.969	2.936	2.488	2.316	2.076	1.692	1.163
80	-	-	-	-	5.104	3.653	3.124	2.961	2.951	2.717	2.687	2.266	2.105	1.879	1.519	1.024
85	-	-	-	5.199	4.234	2.907	2.799	2.727	2.717	2.497	2.468	2.072	1.921	1.708	1.368	0.903
90	-	-	5.042	4.585	3.465	2.690	2.588	2.519	2.510	2.302	2.275	1.901	1.758	1.557	1.235	0.797
95	-	5.125	4.625	4.035	2.943	2.496	2.400	2.334	2.326	2.129	2.103	1.749	1.613	1.423	1.118	0.703
100	-	4.750	4.247	3.539	2.750	2.323	2.231	2.169	2.160	1.973	1.950	1.612	1.484	1.303	1.013	0.619
105	-	4.407	3.902	3.089	2.576	2.166	2.079	2.019	2.012	1.833	1.811	1.490	1.367	1.195	0.919	0.544
110	5.342	4.092	3.587	2.874	2.417	2.025	1.941	1.884	1.877	1.707	1.685	1.379	1.262	1.097	0.834	0.478
115	5.023	3.803	3.298	2.715	2.273	1.895	1.815	1.761	1.754	1.591	1.571	1.278	1.166	1.009	0.757	0.478
120	4.728	3.536	3.031	2.569	2.140	1.777	1.700	1.648	1.641	1.486	1.467	1.186	1.079	0.928	0.687	0.478
125	4.453	3.288	2.880	2.434	2.018	1.669	1.595	1.545	1.538	1.389	1.371	1.102	0.999	0.854	0.622	0.478
130	4.198	3.058	2.747	2.310	1.906	1.569	1.498	1.450	1.443	1.300	1.283	1.024	0.925	0.786	0.563	0.478
135	3.959	2.910	2.623	2.195	1.802	1.476	1.408	1.362	1.356	1.218	1.202	0.953	0.857	0.723	0.509	0.478

Above figures are applicable to horizontal and vertical bars.

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 8: Circular Solid Bar
Fire Resistance Period: 120 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	-	-	-	-	-	-	-	-	-	-	-	-	2.993	2.717	2.304	1.735
30	-	-	-	-	-	-	-	-	-	-	-	-	3.006	2.728	2.311	1.736
35	-	-	-	-	-	-	-	-	-	-	-	-	3.071	2.739	2.318	1.737
40	-	-	-	-	-	-	-	-	-	-	-	-	3.348	2.752	2.326	1.738
45	-	-	-	-	-	-	-	-	-	-	-	-	3.503	2.765	2.334	1.740
50	-	-	-	-	-	-	-	-	-	-	-	-	3.603	2.779	2.342	1.741
55	-	-	-	-	-	-	-	-	-	-	-	-	3.673	2.793	2.352	1.742
60	-	-	-	-	-	-	-	-	-	-	-	-	3.724	2.809	2.362	1.744
65	-	-	-	-	-	-	-	-	-	-	-	5.286	3.763	2.826	2.372	1.745
70	-	-	-	-	-	-	-	-	-	-	-	5.136	3.794	2.844	2.384	1.747
75	-	-	-	-	-	-	-	-	-	-	-	3.189	2.849	2.578	2.147	1.554
80	-	-	-	-	-	-	-	-	-	4.620	4.428	2.785	2.603	2.347	1.943	1.387
85	-	-	-	-	-	5.303	4.873	4.474	4.430	3.147	3.007	2.558	2.387	2.146	1.765	1.242
90	-	-	-	-	5.443	4.117	3.625	3.233	3.182	2.813	2.782	2.358	2.197	1.969	1.609	1.115
95	-	-	-	-	4.650	3.068	2.919	2.845	2.835	2.612	2.583	2.181	2.027	1.812	1.470	1.003
100	-	-	5.330	4.967	3.940	2.827	2.723	2.653	2.644	2.431	2.404	2.022	1.876	1.671	1.346	0.903
105	-	5.440	4.937	4.450	3.299	2.646	2.547	2.480	2.471	2.269	2.242	1.879	1.740	1.545	1.235	0.813
110	-	5.082	4.578	3.980	2.923	2.482	2.387	2.323	2.314	2.121	2.097	1.749	1.617	1.431	1.135	0.732
115	-	4.754	4.248	3.550	2.756	2.332	2.241	2.180	2.172	1.987	1.964	1.632	1.505	1.327	1.044	0.659
120	-	4.450	3.944	3.156	2.604	2.195	2.108	2.049	2.041	1.865	1.843	1.524	1.403	1.232	0.961	0.592
125	5.440	4.169	3.662	2.922	2.463	2.070	1.986	1.930	1.922	1.753	1.731	1.426	1.309	1.145	0.885	0.531
130	5.150	3.907	3.402	2.779	2.334	1.954	1.873	1.819	1.812	1.649	1.629	1.335	1.223	1.066	0.815	0.478
135	4.880	3.664	3.159	2.647	2.214	1.847	1.769	1.717	1.710	1.554	1.534	1.252	1.144	0.992	0.751	0.478

Above figures are applicable to horizontal and vertical bars.

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: Rectangular Solid Bar
Fire Resistance Period: 15 Minutes**

Thickness (mm) Required for a Design Temperature of

Section Factor up to m ²	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	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490
35	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490
40	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490
45	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490
50	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490
55	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490
60	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490
65	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490
70	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490
75	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490
80	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490
85	0.572	0.519	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490
90	0.711	0.519	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490
95	0.871	0.569	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490
100	1.058	0.639	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490
105	1.142	0.710	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490
110	1.229	0.784	0.562	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490
115	1.322	0.862	0.635	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490
120	1.419	0.945	0.711	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490
125	1.522	1.032	0.792	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490
130	1.632	1.124	0.878	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490
135	1.747	1.221	0.969	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490
140	1.870	1.325	1.065	0.524	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490
145	2.001	1.435	1.167	0.620	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490
150	2.140	1.552	1.276	0.722	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490
155	2.289	1.677	1.392	0.829	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490
160	2.448	1.811	1.517	0.942	0.512	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490
165	2.620	1.954	1.650	1.062	0.638	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490
170	2.804	2.108	1.793	1.188	0.764	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490
175	3.003	2.275	1.947	1.323	0.896	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490

Above figures are applicable to horizontal and vertical bars.

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: Rectangular Solid Bar
Fire Resistance Period: 30 Minutes**

Thickness (mm) Required for a Design Temperature of

Section Factor up to m ²	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	0.823	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490
35	0.911	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490
40	1.006	0.586	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490
45	1.110	0.689	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490
50	1.222	0.799	0.528	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490
55	1.346	0.917	0.653	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490
60	1.482	1.043	0.784	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490
65	1.632	1.179	0.923	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490
70	1.799	1.326	1.070	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490
75	1.986	1.485	1.225	0.626	0.519	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490
80	2.196	1.657	1.389	0.803	0.519	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490
85	2.434	1.845	1.563	0.981	0.519	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490
90	2.705	2.051	1.748	1.162	0.620	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490
95	3.019	2.276	1.945	1.345	0.813	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490
100	3.297	2.525	2.155	1.530	1.000	0.552	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490
105	3.403	2.643	2.264	1.632	1.100	0.650	0.556	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490
110	3.514	2.767	2.379	1.738	1.204	0.752	0.657	0.592	0.584	0.490	0.490	0.490	0.490	0.490	0.490	0.490
115	3.630	2.898	2.500	1.848	1.312	0.857	0.761	0.696	0.688	0.490	0.490	0.490	0.490	0.490	0.490	0.490
120	3.753	3.036	2.627	1.964	1.425	0.968	0.870	0.805	0.796	0.594	0.575	0.490	0.490	0.490	0.490	0.490
125	3.882	3.158	2.761	2.085	1.543	1.082	0.983	0.917	0.909	0.703	0.683	0.490	0.490	0.490	0.490	0.490
130	4.018	3.285	2.903	2.212	1.666	1.202	1.102	1.035	1.026	0.817	0.797	0.490	0.490	0.490	0.490	0.490
135	4.163	3.419	3.053	2.345	1.795	1.327	1.225	1.158	1.149	0.936	0.915	0.490	0.490	0.490	0.490	0.490
140	4.315	3.559	3.195	2.485	1.931	1.458	1.354	1.286	1.277	1.060	1.038	0.667	0.528	0.490	0.490	0.490
145	4.477	3.707	3.345	2.632	2.072	1.595	1.489	1.420	1.411	1.190	1.167	0.788	0.648	0.490	0.490	0.490
150	4.648	3.863	3.504	2.787	2.221	1.738	1.630	1.560	1.551	1.326	1.301	0.915	0.773	0.566	0.490	0.490
155	4.831	4.028	3.670	2.950	2.377	1.888	1.777	1.707	1.698	1.468	1.443	1.047	0.903	0.694	0.490	0.490
160	5.025	4.202	3.847	3.139	2.542	2.046	1.932	1.861	1.851	1.617	1.590	1.186	1.040	0.828	0.490	0.490
165	5.233	4.388	4.034	3.360	2.715	2.212	2.095	2.023	2.013	1.773	1.745	1.332	1.183	0.968	0.626	0.490
170	5.456	4.584	4.232	3.594	2.899	2.386	2.266	2.193	2.183	1.937	1.908	1.485	1.334	1.115	0.771	0.490
175	-	4.793	4.443	3.843	3.129	2.570	2.446	2.371	2.361	2.110	2.080	1.646	1.492	1.269	0.924	0.578

Above figures are applicable to horizontal and vertical bars.

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: Rectangular Solid Bar
Fire Resistance Period: 45 Minutes**

Thickness (mm) Required for a Design Temperature of

Section Factor up to m ²	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	1.897	1.493	1.261	0.631	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490
35	2.028	1.617	1.391	0.799	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490
40	2.170	1.750	1.528	0.969	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490
45	2.324	1.891	1.671	1.141	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490
50	2.492	2.042	1.822	1.314	0.640	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490
55	2.676	2.204	1.980	1.490	0.859	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490
60	2.879	2.377	2.147	1.668	1.070	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490
65	3.111	2.564	2.323	1.847	1.275	0.558	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490
70	3.378	2.766	2.508	2.029	1.473	0.814	0.646	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490
75	3.647	2.984	2.705	2.213	1.665	1.049	0.897	0.788	0.774	0.490	0.490	0.490	0.490	0.490	0.490	0.490
80	3.918	3.226	2.913	2.398	1.850	1.267	1.127	1.027	1.014	0.697	0.665	0.490	0.490	0.490	0.490	0.490
85	4.192	3.471	3.137	2.586	2.030	1.469	1.338	1.244	1.232	0.939	0.909	0.490	0.490	0.490	0.490	0.490
90	4.468	3.715	3.367	2.776	2.205	1.657	1.532	1.444	1.433	1.157	1.129	0.625	0.490	0.490	0.490	0.490
95	4.747	3.957	3.594	2.969	2.375	1.832	1.712	1.628	1.617	1.354	1.327	0.856	0.671	0.532	0.490	0.490
100	5.028	4.198	3.818	3.186	2.539	1.996	1.878	1.797	1.787	1.533	1.507	1.062	0.888	0.637	0.490	0.490
105	5.175	4.334	3.955	3.349	2.670	2.122	2.002	1.920	1.910	1.652	1.625	1.172	0.996	0.743	0.490	0.490
110	5.330	4.476	4.099	3.520	2.807	2.253	2.131	2.048	2.038	1.776	1.748	1.287	1.109	0.853	0.490	0.490
115	-	4.625	4.249	3.698	2.949	2.389	2.265	2.181	2.171	1.904	1.876	1.406	1.226	0.967	0.535	0.490
120	-	4.780	4.406	3.885	3.127	2.531	2.405	2.320	2.309	2.038	2.008	1.530	1.347	1.085	0.651	0.490
125	-	4.943	4.571	4.080	3.368	2.679	2.550	2.464	2.453	2.177	2.147	1.659	1.474	1.208	0.771	0.490
130	-	5.115	4.743	4.286	3.624	2.833	2.702	2.615	2.603	2.322	2.291	1.794	1.605	1.336	0.896	0.499
135	-	5.295	4.925	4.502	3.898	2.994	2.860	2.772	2.760	2.473	2.441	1.934	1.742	1.469	1.026	0.519
140	-	-	5.115	4.729	4.191	3.293	3.025	2.936	2.924	2.631	2.597	2.080	1.885	1.608	1.161	0.540
145	-	-	5.316	4.969	4.505	3.677	3.395	3.191	3.164	2.796	2.761	2.232	2.035	1.753	1.302	0.680
150	-	-	-	5.222	4.843	4.102	3.833	3.628	3.602	2.969	2.933	2.391	2.191	1.904	1.450	0.829
155	-	-	-	-	5.206	4.574	4.325	4.122	4.098	3.338	3.236	2.558	2.354	2.062	1.603	0.986
160	-	-	-	-	-	5.103	4.883	4.686	4.663	3.911	3.804	2.733	2.525	2.227	1.764	1.153
165	-	-	-	-	-	-	-	5.334	5.314	4.587	4.475	2.916	2.703	2.399	1.933	1.330
170	-	-	-	-	-	-	-	-	-	5.397	5.283	3.292	2.891	2.581	2.109	1.519
175	-	-	-	-	-	-	-	-	-	-	-	4.140	3.220	2.771	2.294	1.721

Above figures are applicable to horizontal and vertical bars.

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 I2: Rectangular Solid Bar
Fire Resistance Period: 60 Minutes**

Thickness (mm) Required for a Design Temperature of

Section Factor up to m ²	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	2.972	2.587	2.437	2.140	1.620	0.569	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490
35	3.194	2.745	2.595	2.317	1.837	0.926	0.612	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490
40	3.454	2.914	2.760	2.495	2.046	1.244	0.978	0.767	0.738	0.490	0.490	0.490	0.490	0.490	0.490	0.490
45	3.717	3.112	2.934	2.675	2.248	1.530	1.299	1.118	1.094	0.507	0.490	0.490	0.490	0.490	0.490	0.490
50	3.982	3.363	3.140	2.857	2.443	1.788	1.585	1.426	1.405	0.848	0.783	0.490	0.490	0.490	0.490	0.490
55	4.249	3.612	3.384	3.041	2.631	2.022	1.839	1.697	1.679	1.189	1.132	0.490	0.490	0.490	0.490	0.490
60	4.518	3.860	3.623	3.327	2.813	2.235	2.067	1.938	1.921	1.481	1.431	0.500	0.490	0.490	0.490	0.490
65	4.790	4.106	3.859	3.597	2.989	2.430	2.273	2.154	2.138	1.735	1.690	0.811	0.490	0.490	0.490	0.490
70	5.064	4.351	4.091	3.853	3.248	2.610	2.460	2.348	2.333	1.958	1.915	1.122	0.786	0.490	0.490	0.490
75	5.340	4.595	4.320	4.095	3.523	2.775	2.630	2.523	2.510	2.154	2.114	1.386	1.083	0.611	0.490	0.490
80	-	4.837	4.545	4.325	3.773	2.928	2.786	2.683	2.670	2.329	2.290	1.612	1.334	0.910	0.490	0.490
85	-	5.077	4.766	4.542	4.002	3.095	2.930	2.829	2.816	2.485	2.448	1.808	1.550	1.163	0.544	0.490
90	-	5.316	4.984	4.750	4.211	3.340	3.078	2.962	2.949	2.626	2.590	1.980	1.737	1.380	0.779	0.490
95	-	-	5.199	4.947	4.404	3.556	3.304	3.121	3.097	2.753	2.718	2.132	1.901	1.569	1.013	0.490
100	-	-	5.411	5.134	4.583	3.748	3.505	3.328	3.305	2.869	2.834	2.267	2.046	1.734	1.216	0.491
105	-	-	-	5.340	4.837	4.038	3.795	3.614	3.592	3.014	2.977	2.400	2.176	1.860	1.338	0.609
110	-	-	-	-	5.107	4.349	4.108	3.924	3.902	3.284	3.209	2.538	2.311	1.991	1.464	0.728
115	-	-	-	-	5.392	4.684	4.447	4.260	4.239	3.610	3.531	2.682	2.452	2.126	1.595	0.852
120	-	-	-	-	-	5.047	4.815	4.627	4.607	3.968	3.886	2.831	2.597	2.267	1.731	0.983
125	-	-	-	-	-	5.440	5.218	5.029	5.009	4.365	4.278	2.986	2.749	2.413	1.872	1.120
130	-	-	-	-	-	-	-	5.470	5.451	4.804	4.714	3.321	2.907	2.566	2.019	1.264
135	-	-	-	-	-	-	-	-	-	5.296	5.201	3.792	3.127	2.724	2.172	1.416
140	-	-	-	-	-	-	-	-	-	-	-	4.319	3.652	2.889	2.331	1.576
145	-	-	-	-	-	-	-	-	-	-	-	4.912	4.230	3.106	2.497	1.746
150	-	-	-	-	-	-	-	-	-	-	-	-	4.870	3.731	2.671	1.925
155	-	-	-	-	-	-	-	-	-	-	-	-	-	4.398	2.852	2.115
160	-	-	-	-	-	-	-	-	-	-	-	-	-	5.112	3.041	2.317
165	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.771	2.531
170	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4.503	2.760
175	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5.233	3.004

Above figures are applicable to horizontal and vertical bars.

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 I3: Rectangular Solid Bar Fire Resistance Period: 75 Minutes Thickness (mm) Required for a Design Temperature of																
Section Factor up to m ²	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	4.566	4.011	3.905	3.905	3.905	3.905	3.165	2.927	2.909	2.287	2.200	0.490	0.490	0.490	0.490	0.490
35	4.831	4.261	4.150	4.150	4.150	4.150	3.861	3.463	3.413	2.620	2.547	0.660	0.490	0.490	0.490	0.490
40	5.099	4.510	4.391	4.391	4.391	4.391	4.345	4.039	4.003	2.887	2.824	1.302	0.626	0.490	0.490	0.490
45	5.368	4.757	4.628	4.628	4.628	4.628	4.628	4.445	4.417	3.246	3.062	1.763	1.088	0.490	0.490	0.490
50	-	5.003	4.862	4.862	4.862	4.862	4.975	4.746	4.722	3.756	3.602	2.110	1.550	0.541	0.490	0.490
55	-	5.247	5.091	5.091	5.091	5.091	5.191	4.979	4.958	4.111	3.976	2.381	1.898	1.059	0.490	0.490
60	-	-	5.317	5.317	5.317	5.317	5.366	5.164	5.145	4.372	4.250	2.598	2.170	1.449	0.490	0.490
65	-	-	-	-	-	-	-	5.315	5.296	4.572	4.459	2.776	2.389	1.754	0.606	0.490
70	-	-	-	-	-	-	-	5.440	5.422	4.730	4.624	2.925	2.568	1.999	0.992	0.490
75	-	-	-	-	-	-	-	-	-	4.859	4.758	3.064	2.718	2.200	1.300	0.490
80	-	-	-	-	-	-	-	-	-	4.965	4.868	3.340	2.845	2.368	1.552	0.490
85	-	-	-	-	-	-	-	-	-	5.054	4.961	3.559	2.954	2.510	1.761	0.720
90	-	-	-	-	-	-	-	-	-	5.130	5.040	3.738	3.059	2.633	1.937	0.965
95	-	-	-	-	-	-	-	-	-	5.196	5.108	3.886	3.278	2.739	2.088	1.171
100	-	-	-	-	-	-	-	-	-	5.253	5.167	4.011	3.462	2.832	2.219	1.346
105	-	-	-	-	-	-	-	-	-	-	-	4.393	3.867	2.978	2.359	1.478
110	-	-	-	-	-	-	-	-	-	-	-	4.807	4.303	3.320	2.504	1.618
115	-	-	-	-	-	-	-	-	-	-	-	5.260	4.773	3.832	2.655	1.763
120	-	-	-	-	-	-	-	-	-	-	-	-	5.280	4.373	2.811	1.917
125	-	-	-	-	-	-	-	-	-	-	-	-	-	4.945	2.973	2.077
130	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.476	2.247
135	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4.215	2.425
140	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4.953	2.613
145	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.811
150	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.022
155	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4.198
160	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5.056
165	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
170	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
175	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Above figures are applicable to horizontal and vertical bars.

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 I4: Rectangular Solid Bar
Fire Resistance Period: 90 Minutes**

Thickness (mm) Required for a Design Temperature of

Section Factor up to m ²	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	-	-	-	-	-	-	-	-	-	-	-	-	-	1.904	0.490	0.490
35	-	-	-	-	-	-	-	-	-	-	-	-	-	2.647	0.490	0.490
40	-	-	-	-	-	-	-	-	-	-	-	-	-	3.031	0.490	0.490
45	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.917	0.490
50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.556	0.490
55	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.978	0.490
60	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.277	0.490
65	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.500	0.752
70	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.673	1.126
75	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.811	1.410
80	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.923	1.634
85	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.017	1.815
90	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.350	1.964
95	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.681	2.089
100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.923	2.195
105	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4.668	2.348
110	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5.411	2.507
115	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.675
120	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.850
125	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.035
130	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
135	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
140	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
145	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
150	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
155	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
160	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
165	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
170	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
175	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Above figures are applicable to horizontal and vertical bars.

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 I5: Rectangular Solid Bar
Fire Resistance Period: IO5 Minutes**

Thickness (mm) Required for a Design Temperature of

Section Factor up to m ²	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	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.490
35	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.490
40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.490
45	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.892
50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.665
55	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.086
60	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.351
65	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.532
70	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.665
75	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.766
80	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.846
85	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.910
90	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.963
95	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.007
100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
105	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
110	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
115	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
120	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
125	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
130	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
135	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
140	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
145	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
150	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
155	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
160	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
165	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
170	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
175	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Above figures are applicable to horizontal and vertical bars.

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.