



# SC601/2 Loading Tables

## EN13381-10: Solid Steel Bars

**Nullifire**  
Smart Protection

Table 1: Rectangular Bar  
Fire Resistance Period: 15 Minutes

Thickness (mm) Required for a Design Temperature of

Section Factor (m <sup>-1</sup> )	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	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224
35	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224
40	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224
45	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224
50	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224
55	0.227	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224
60	0.266	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224
65	0.308	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224
70	0.352	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224
75	0.400	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224
80	0.451	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224
85	0.507	0.255	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224
90	0.567	0.308	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224
95	0.632	0.365	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224
100	0.703	0.426	0.279	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224
105	0.741	0.459	0.308	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224
110	0.783	0.495	0.340	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224
115	0.828	0.534	0.375	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224
120	0.878	0.577	0.413	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224
125	0.934	0.624	0.454	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224
130	0.996	0.676	0.499	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224
135	1.065	0.734	0.549	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224
140	1.143	0.799	0.604	0.229	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224
145	1.233	0.872	0.665	0.273	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224
150	1.335	0.954	0.734	0.322	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224
155	1.454	1.048	0.811	0.376	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224
160	1.593	1.156	0.898	0.436	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224
165	1.656	1.217	0.954	0.471	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224
170	1.724	1.284	1.015	0.510	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224
175	1.795	1.356	1.082	0.554	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224

- 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.



# SC601/2 Loading Tables

## EN13381-10: Solid Steel Bars

**Nullifire**  
Smart Protection

Table 1: Rectangular Bar  
Fire Resistance Period: 15 Minutes

Thickness (mm) Required for a Design Temperature of

Section Factor (m <sup>-1</sup> )	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)
180	1.870	1.435	1.155	0.603	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224
185	1.951	1.521	1.237	0.659	0.249	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224
190	2.035	1.615	1.329	0.723	0.281	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224
195	2.119	1.720	1.432	0.798	0.319	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224
200	2.208	1.835	1.549	0.885	0.364	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224
205	2.303	1.965	1.682	0.989	0.419	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224
210	2.403	2.072	1.836	1.114	0.487	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224
215	2.510	2.159	2.015	1.269	0.575	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224
220	2.625	2.252	2.114	1.465	0.691	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224
225	2.747	2.352	2.213	1.721	0.852	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224
230	2.877	2.460	2.319	2.038	1.091	0.316	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224
235	3.018	2.577	2.432	2.163	1.480	0.478	0.293	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224
240	3.170	2.703	2.553	2.296	2.056	0.802	0.528	0.352	0.332	0.224	0.224	0.224	0.224	0.224	0.224	0.224
245	3.333	2.840	2.682	2.436	2.211	1.774	1.234	0.888	0.848	0.224	0.224	0.224	0.224	0.224	0.224	0.224
250	3.511	2.989	2.820	2.584	2.373	2.178	2.137	2.111	2.108	2.026	0.232	0.232	0.232	0.232	0.232	0.232
255	3.704	3.152	2.969	2.741	2.542	2.356	2.317	2.292	2.289	2.211	2.202	2.092	2.039	0.232	0.232	0.232
260	3.915	3.332	3.130	2.907	2.718	2.540	2.503	2.478	2.475	2.399	2.390	2.276	2.223	2.142	0.232	0.232
265	4.146	3.530	3.304	3.084	2.901	2.730	2.694	2.669	2.667	2.592	2.583	2.464	2.410	2.328	2.172	0.232
270	-	3.750	3.493	3.272	3.094	2.927	2.891	2.866	2.863	2.789	2.780	2.655	2.601	2.517	2.360	2.051
275	-	3.996	3.699	3.473	3.295	3.129	3.094	3.069	3.066	2.992	2.982	2.850	2.795	2.709	2.550	2.242

- 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.



# SC601/2 Loading Tables

## EN13381-10: Solid Steel Bars

**Nullifire**  
Smart Protection

Table 2: Rectangular Bar  
Fire Resistance Period: 30 Minutes

Thickness (mm) Required for a Design Temperature of

Section Factor (m <sup>-1</sup> )	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	0.806	0.634	0.530	0.278	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224
35	0.856	0.682	0.577	0.317	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224
40	0.909	0.733	0.626	0.358	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224
45	0.965	0.786	0.677	0.400	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224
50	1.024	0.843	0.731	0.445	0.229	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224
55	1.087	0.902	0.787	0.491	0.267	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224
60	1.154	0.964	0.846	0.540	0.307	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224
65	1.226	1.030	0.909	0.591	0.349	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224
70	1.304	1.099	0.974	0.644	0.393	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224
75	1.386	1.172	1.043	0.701	0.439	0.243	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224
80	1.475	1.250	1.116	0.760	0.487	0.285	0.244	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224
85	1.572	1.333	1.194	0.822	0.538	0.329	0.287	0.260	0.256	0.224	0.224	0.224	0.224	0.224	0.224	0.224
90	1.676	1.421	1.275	0.888	0.592	0.376	0.333	0.304	0.301	0.224	0.224	0.224	0.224	0.224	0.224	0.224
95	1.789	1.515	1.362	0.957	0.649	0.425	0.380	0.351	0.348	0.260	0.250	0.224	0.224	0.224	0.224	0.224
100	1.912	1.615	1.454	1.031	0.709	0.476	0.431	0.401	0.397	0.308	0.298	0.224	0.224	0.224	0.224	0.224
105	2.004	1.697	1.530	1.091	0.756	0.515	0.468	0.437	0.433	0.340	0.330	0.224	0.224	0.224	0.224	0.224
110	2.250	1.787	1.611	1.155	0.807	0.556	0.507	0.475	0.471	0.375	0.365	0.224	0.224	0.224	0.224	0.224
115	2.509	1.884	1.699	1.224	0.861	0.600	0.549	0.516	0.512	0.412	0.402	0.231	0.224	0.224	0.224	0.224
120	2.739	1.991	1.795	1.299	0.920	0.647	0.594	0.559	0.555	0.452	0.441	0.266	0.224	0.224	0.224	0.224
125	2.946	2.142	1.900	1.380	0.982	0.698	0.642	0.606	0.602	0.494	0.483	0.303	0.231	0.224	0.224	0.224
130	3.133	2.295	2.014	1.468	1.050	0.752	0.694	0.656	0.652	0.540	0.527	0.343	0.268	0.224	0.224	0.224
135	3.302	2.434	2.155	1.564	1.124	0.811	0.750	0.710	0.705	0.588	0.576	0.385	0.307	0.224	0.224	0.224
140	3.457	2.561	2.286	1.668	1.204	0.874	0.810	0.768	0.763	0.641	0.627	0.431	0.350	0.228	0.224	0.224
145	3.598	2.677	2.404	1.784	1.291	0.943	0.875	0.831	0.826	0.697	0.683	0.479	0.396	0.268	0.224	0.224
150	3.728	2.784	2.513	1.911	1.386	1.017	0.946	0.900	0.894	0.758	0.744	0.532	0.445	0.312	0.224	0.224
155	3.848	2.883	2.613	2.048	1.491	1.099	1.023	0.975	0.969	0.824	0.809	0.589	0.498	0.359	0.224	0.224
160	3.958	2.974	2.705	2.169	1.606	1.189	1.108	1.056	1.050	0.897	0.881	0.651	0.555	0.410	0.224	0.224
165	4.077	3.062	2.791	2.263	1.708	1.269	1.183	1.129	1.122	0.961	0.944	0.706	0.606	0.454	0.224	0.224
170	4.202	3.154	2.881	2.361	1.822	1.359	1.268	1.211	1.204	1.034	1.016	0.768	0.663	0.503	0.247	0.224
175	-	3.252	2.975	2.463	1.952	1.461	1.365	1.304	1.297	1.117	1.097	0.838	0.728	0.559	0.288	0.224

- 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.



# SC601/2 Loading Tables

## EN13381-10: Solid Steel Bars

**Nullifire**  
Smart Protection

Table 2: Rectangular Bar  
Fire Resistance Period: 30 Minutes

Thickness (mm) Required for a Design Temperature of

Section Factor (m <sup>-1</sup> )	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)
180	-	3.355	3.073	2.569	2.085	1.577	1.475	1.410	1.402	1.211	1.190	0.918	0.802	0.624	0.335	0.224
185	-	3.463	3.177	2.680	2.210	1.711	1.602	1.533	1.524	1.319	1.297	1.011	0.887	0.698	0.389	0.224
190	-	3.578	3.286	2.795	2.340	1.868	1.750	1.676	1.667	1.446	1.422	1.119	0.986	0.784	0.453	0.224
195	-	3.701	3.400	2.915	2.474	2.046	1.925	1.845	1.835	1.596	1.570	1.247	1.104	0.886	0.528	0.224
200	-	3.830	3.521	3.041	2.612	2.196	2.102	2.041	2.033	1.776	1.747	1.400	1.245	1.008	0.618	0.224
205	-	3.968	3.648	3.172	2.756	2.351	2.259	2.199	2.192	1.995	1.964	1.588	1.417	1.158	0.728	0.224
210	-	4.115	3.783	3.309	2.904	2.509	2.420	2.362	2.355	2.172	2.151	1.822	1.632	1.345	0.865	0.224
215	-	-	3.925	3.453	3.058	2.672	2.585	2.528	2.521	2.343	2.322	2.075	1.909	1.585	1.042	0.225
220	-	-	4.076	3.605	3.217	2.840	2.755	2.699	2.692	2.517	2.497	2.245	2.137	1.906	1.278	0.333
225	-	-	-	3.763	3.383	3.013	2.929	2.873	2.867	2.694	2.675	2.418	2.310	2.147	1.607	0.484
230	-	-	-	3.930	3.555	3.190	3.108	3.053	3.046	2.876	2.857	2.595	2.487	2.325	2.048	0.711
235	-	-	-	4.106	3.734	3.373	3.291	3.237	3.230	3.062	3.042	2.775	2.667	2.504	2.229	1.090
240	-	-	-	-	3.919	3.561	3.480	3.426	3.419	3.251	3.232	2.958	2.850	2.687	2.411	1.846
245	-	-	-	-	4.113	3.755	3.674	3.619	3.613	3.445	3.426	3.145	3.036	2.872	2.596	2.182
250	-	-	-	-	-	3.955	3.873	3.818	3.812	3.643	3.623	3.336	3.225	3.059	2.782	2.368
255	-	-	-	-	-	4.161	4.079	4.023	4.016	3.846	3.826	3.530	3.418	3.249	2.970	2.556
260	-	-	-	-	-	-	-	-	-	4.053	4.032	3.728	3.614	3.442	3.160	2.747
265	-	-	-	-	-	-	-	-	-	-	-	3.931	3.813	3.638	3.352	2.941
270	-	-	-	-	-	-	-	-	-	-	-	4.137	4.017	3.836	3.546	3.137
275	-	-	-	-	-	-	-	-	-	-	-	-	4.224	4.037	3.742	3.335

- 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.



# SC601/2 Loading Tables

## EN13381-10: Solid Steel Bars

**Nullifire**  
Smart Protection

Table 3: Rectangular Bar  
Fire Resistance Period: 45 Minutes

Thickness (mm) Required for a Design Temperature of

Section Factor (m <sup>-1</sup> )	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	1.547	1.438	1.345	1.021	0.737	0.510	0.463	0.431	0.428	0.330	0.320	0.224	0.224	0.224	0.224	0.224
35	1.618	1.505	1.411	1.076	0.783	0.550	0.502	0.470	0.466	0.367	0.356	0.224	0.224	0.224	0.224	0.224
40	1.693	1.576	1.479	1.133	0.830	0.592	0.542	0.510	0.506	0.405	0.394	0.224	0.224	0.224	0.224	0.224
45	1.773	1.650	1.550	1.192	0.880	0.635	0.585	0.551	0.547	0.445	0.434	0.250	0.224	0.224	0.224	0.224
50	1.857	1.729	1.624	1.255	0.932	0.680	0.628	0.594	0.590	0.486	0.475	0.291	0.224	0.224	0.224	0.224
55	1.947	1.811	1.703	1.320	0.986	0.727	0.674	0.639	0.635	0.529	0.518	0.333	0.258	0.224	0.224	0.224
60	2.061	1.897	1.785	1.388	1.042	0.777	0.722	0.687	0.682	0.574	0.563	0.378	0.301	0.224	0.224	0.224
65	2.271	1.989	1.872	1.459	1.101	0.828	0.772	0.736	0.732	0.621	0.609	0.424	0.347	0.229	0.224	0.224
70	2.519	2.118	1.963	1.534	1.164	0.882	0.825	0.787	0.783	0.670	0.658	0.472	0.394	0.276	0.224	0.224
75	2.813	2.288	2.080	1.613	1.229	0.938	0.880	0.841	0.837	0.722	0.709	0.523	0.444	0.324	0.224	0.224
80	3.170	2.488	2.258	1.696	1.297	0.998	0.937	0.898	0.893	0.776	0.763	0.575	0.496	0.376	0.224	0.224
85	3.611	2.727	2.469	1.784	1.369	1.060	0.998	0.957	0.952	0.833	0.819	0.631	0.550	0.429	0.224	0.224
90	4.169	3.018	2.722	1.876	1.445	1.125	1.061	1.019	1.015	0.892	0.879	0.689	0.607	0.485	0.275	0.224
95	-	3.379	3.034	1.973	1.525	1.194	1.128	1.085	1.080	0.955	0.941	0.750	0.666	0.544	0.331	0.224
100	-	3.840	3.426	2.183	1.609	1.267	1.198	1.154	1.149	1.020	1.006	0.814	0.729	0.606	0.391	0.224
105	-	3.935	3.532	2.422	1.686	1.331	1.259	1.214	1.208	1.075	1.060	0.862	0.775	0.648	0.427	0.224
110	-	4.018	3.624	2.618	1.769	1.398	1.324	1.277	1.271	1.132	1.117	0.914	0.824	0.692	0.466	0.224
115	-	4.091	3.704	2.782	1.858	1.471	1.394	1.344	1.338	1.194	1.178	0.968	0.876	0.739	0.507	0.224
120	-	4.157	3.776	2.921	1.953	1.548	1.468	1.416	1.410	1.259	1.243	1.027	0.931	0.789	0.550	0.224
125	-	4.217	3.840	3.040	2.090	1.632	1.547	1.493	1.487	1.329	1.312	1.088	0.989	0.843	0.597	0.240
130	-	-	3.897	3.143	2.293	1.721	1.632	1.576	1.569	1.404	1.386	1.155	1.052	0.899	0.646	0.282
135	-	-	3.949	3.234	2.464	1.817	1.724	1.665	1.658	1.484	1.465	1.225	1.118	0.960	0.698	0.327
140	-	-	3.996	3.314	2.611	1.922	1.823	1.761	1.753	1.571	1.551	1.301	1.190	1.025	0.754	0.375
145	-	-	4.039	3.386	2.738	2.040	1.931	1.865	1.857	1.664	1.643	1.383	1.267	1.094	0.814	0.426
150	-	-	4.078	3.449	2.849	2.210	2.057	1.978	1.969	1.765	1.743	1.470	1.350	1.169	0.878	0.481
155	-	-	4.114	3.507	2.947	2.357	2.217	2.124	2.113	1.875	1.851	1.565	1.439	1.249	0.947	0.541
160	-	-	4.147	3.559	3.034	2.486	2.356	2.271	2.260	1.994	1.969	1.668	1.536	1.336	1.022	0.606
165	-	-	-	3.680	3.166	2.629	2.502	2.418	2.407	2.140	2.110	1.783	1.644	1.435	1.104	0.667
170	-	-	-	3.806	3.303	2.775	2.651	2.568	2.558	2.296	2.266	1.913	1.766	1.546	1.196	0.735
175	-	-	-	3.937	3.444	2.925	2.803	2.722	2.712	2.454	2.425	2.060	1.904	1.671	1.300	0.812

- 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.



# SC601/2 Loading Tables

## EN13381-10: Solid Steel Bars

**Nullifire**  
Smart Protection

Table 3: Rectangular Bar  
Fire Resistance Period: 45 Minutes

Thickness (mm) Required for a Design Temperature of

Section Factor (m <sup>-1</sup> )	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)
180	-	-	-	4.073	3.589	3.079	2.959	2.879	2.869	2.616	2.587	2.218	2.061	1.815	1.420	0.900
185	-	-	-	4.215	3.739	3.237	3.118	3.040	3.030	2.781	2.753	2.379	2.223	1.980	1.558	1.002
190	-	-	-	-	3.894	3.399	3.282	3.204	3.195	2.949	2.921	2.543	2.388	2.151	1.719	1.121
195	-	-	-	-	4.054	3.565	3.450	3.373	3.364	3.120	3.093	2.710	2.555	2.321	1.909	1.261
200	-	-	-	-	4.220	3.736	3.621	3.545	3.536	3.295	3.268	2.879	2.725	2.493	2.106	1.430
205	-	-	-	-	-	3.911	3.798	3.722	3.713	3.474	3.447	3.052	2.898	2.667	2.282	1.635
210	-	-	-	-	-	4.091	3.978	3.903	3.894	3.656	3.629	3.228	3.074	2.843	2.460	1.893
215	-	-	-	-	-	-	4.164	4.088	4.079	3.842	3.815	3.407	3.253	3.022	2.639	2.125
220	-	-	-	-	-	-	-	-	-	4.032	4.005	3.590	3.434	3.203	2.820	2.304
225	-	-	-	-	-	-	-	-	-	4.226	4.198	3.776	3.619	3.386	3.003	2.485
230	-	-	-	-	-	-	-	-	-	-	-	3.965	3.807	3.572	3.188	2.668
235	-	-	-	-	-	-	-	-	-	-	-	4.158	3.998	3.760	3.374	2.854
240	-	-	-	-	-	-	-	-	-	-	-	-	4.192	3.951	3.562	3.042
245	-	-	-	-	-	-	-	-	-	-	-	-	-	4.145	3.752	3.232
250	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.944	3.425
255	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4.138	3.621
260	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.819
265	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4.019
270	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4.222
275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

- 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.



# SC601/2 Loading Tables

## EN13381-10: Solid Steel Bars

**Nullifire**  
Smart Protection

Table 4: Rectangular Bar  
Fire Resistance Period: 60 Minutes

Thickness (mm) Required for a Design Temperature of

Section Factor (m <sup>-1</sup> )	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	2.452	2.280	2.187	1.764	1.383	1.083	1.020	0.979	0.975	0.850	0.837	0.634	0.546	0.410	0.224	0.224
35	2.616	2.391	2.293	1.834	1.442	1.134	1.070	1.029	1.024	0.897	0.884	0.680	0.591	0.454	0.224	0.224
40	2.798	2.513	2.409	1.908	1.504	1.188	1.122	1.080	1.075	0.946	0.932	0.727	0.638	0.500	0.268	0.224
45	3.002	2.649	2.538	1.984	1.568	1.244	1.177	1.133	1.128	0.997	0.983	0.777	0.686	0.547	0.313	0.224
50	3.233	2.801	2.682	2.088	1.635	1.302	1.233	1.189	1.184	1.050	1.035	0.828	0.737	0.596	0.360	0.224
55	3.495	2.971	2.842	2.230	1.704	1.362	1.292	1.247	1.241	1.105	1.090	0.882	0.789	0.648	0.409	0.224
60	3.797	3.163	3.023	2.391	1.778	1.426	1.354	1.307	1.302	1.162	1.147	0.938	0.844	0.701	0.461	0.224
65	4.146	3.383	3.228	2.575	1.854	1.492	1.418	1.370	1.365	1.223	1.207	0.996	0.901	0.757	0.514	0.224
70	-	3.635	3.464	2.788	1.934	1.562	1.486	1.436	1.431	1.286	1.270	1.057	0.961	0.816	0.570	0.240
75	-	3.929	3.736	3.038	2.018	1.634	1.556	1.506	1.500	1.351	1.335	1.121	1.023	0.877	0.628	0.292
80	-	-	4.054	3.333	2.271	1.711	1.630	1.578	1.572	1.420	1.404	1.188	1.088	0.940	0.689	0.345
85	-	-	-	3.690	2.598	1.791	1.708	1.655	1.648	1.493	1.476	1.258	1.157	1.007	0.753	0.401
90	-	-	-	4.128	3.015	1.875	1.790	1.735	1.728	1.569	1.552	1.331	1.228	1.077	0.819	0.460
95	-	-	-	-	3.564	1.964	1.876	1.819	1.812	1.649	1.631	1.408	1.304	1.151	0.889	0.520
100	-	-	-	-	-	2.242	1.966	1.908	1.901	1.733	1.715	1.489	1.383	1.228	0.962	0.584
105	-	-	-	-	-	2.658	2.173	1.990	1.983	1.809	1.790	1.557	1.447	1.288	1.015	0.630
110	-	-	-	-	-	2.944	2.550	2.274	2.241	1.889	1.869	1.629	1.516	1.351	1.070	0.678
115	-	-	-	-	-	3.151	2.820	2.590	2.563	1.975	1.954	1.706	1.589	1.418	1.129	0.730
120	-	-	-	-	-	3.309	3.023	2.826	2.803	2.169	2.094	1.787	1.666	1.488	1.191	0.784
125	-	-	-	-	-	3.433	3.182	3.009	2.988	2.435	2.370	1.874	1.748	1.564	1.257	0.842
130	-	-	-	-	-	3.533	3.308	3.155	3.137	2.645	2.588	1.966	1.836	1.644	1.327	0.904
135	-	-	-	-	-	3.616	3.412	3.274	3.257	2.814	2.763	2.111	1.930	1.730	1.402	0.970
140	-	-	-	-	-	3.685	3.499	3.373	3.358	2.954	2.908	2.298	2.035	1.821	1.482	1.041
145	-	-	-	-	-	3.743	3.572	3.457	3.443	3.072	3.030	2.456	2.215	1.920	1.568	1.117
150	-	-	-	-	-	3.794	3.635	3.528	3.515	3.172	3.133	2.591	2.368	2.026	1.660	1.199
155	-	-	-	-	-	3.838	3.690	3.590	3.578	3.258	3.222	2.709	2.501	2.182	1.759	1.287
160	-	-	-	-	-	3.876	3.737	3.644	3.633	3.333	3.299	2.811	2.616	2.318	1.866	1.383
165	-	-	-	-	-	4.036	3.899	3.806	3.795	3.498	3.465	2.972	2.778	2.482	1.997	1.489
170	-	-	-	-	-	4.200	4.064	3.972	3.961	3.667	3.634	3.135	2.942	2.648	2.161	1.609
175	-	-	-	-	-	-	-	4.142	4.131	3.839	3.806	3.301	3.108	2.817	2.333	1.745

- 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.



# SC601/2 Loading Tables

## EN13381-10: Solid Steel Bars

**Nullifire**  
Smart Protection

Table 4: Rectangular Bar  
Fire Resistance Period: 60 Minutes

Thickness (mm) Required for a Design Temperature of

Section Factor (m <sup>-1</sup> )	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)
180	-	-	-	-	-	-	-	-	-	4.014	3.981	3.470	3.278	2.987	2.506	1.899
185	-	-	-	-	-	-	-	-	-	4.192	4.160	3.642	3.449	3.160	2.680	2.073
190	-	-	-	-	-	-	-	-	-	-	-	3.817	3.624	3.335	2.856	2.245
195	-	-	-	-	-	-	-	-	-	-	-	3.995	3.801	3.512	3.034	2.419
200	-	-	-	-	-	-	-	-	-	-	-	4.176	3.981	3.692	3.214	2.595
205	-	-	-	-	-	-	-	-	-	-	-	-	4.165	3.873	3.395	2.774
210	-	-	-	-	-	-	-	-	-	-	-	-	-	4.058	3.578	2.954
215	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.763	3.137
220	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.949	3.322
225	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4.137	3.510
230	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.699
235	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.892
240	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4.086
245	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
250	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
255	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
260	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
265	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
270	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

- 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.





# SC601/2 Loading Tables

## EN13381-10: Solid Steel Bars

**Nullifire**  
Smart Protection

Table 5: Circular 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)
15	3.497	2.697	2.295	1.542	0.958	0.470	0.362	0.293	0.284	0.224	0.224	0.224	0.224	0.224	0.224	0.224
20	2.587	2.108	1.802	1.152	0.702	0.374	0.306	0.264	0.258	0.224	0.224	0.224	0.224	0.224	0.224	0.224
25	2.093	1.795	1.518	0.940	0.577	0.331	0.282	0.251	0.247	0.224	0.224	0.224	0.224	0.224	0.224	0.224
30	1.650	1.456	1.238	0.729	0.401	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224
35	1.340	1.186	1.004	0.545	0.242	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224
40	1.102	0.965	0.806	0.383	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224
45	0.913	0.782	0.636	0.239	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224
50	0.760	0.627	0.489	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224
55	0.633	0.494	0.360	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224
60	0.526	0.379	0.246	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224
65	0.435	0.279	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224
70	0.356	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224
75	0.328	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224
80	0.302	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224
85	0.278	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224
90	0.256	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224
95	0.237	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224
100	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224
105	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224
110	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224
115	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224
120	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224
125	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224
130	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224
135	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224

- 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.



# SC601/2 Loading Tables

## EN13381-10: Solid Steel Bars

**Nullifire**  
Smart Protection

Table 6: 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)
15	-	-	-	-	-	-	-	-	-	3.745	3.685	2.749	2.335	1.842	1.224	0.515
20	-	-	-	3.862	3.103	2.335	2.146	2.023	2.010	1.797	1.772	1.449	1.302	1.102	0.756	0.363
25	-	-	3.759	2.902	2.170	1.662	1.567	1.507	1.500	1.334	1.315	1.069	0.965	0.826	0.586	0.314
30	-	3.683	3.301	2.516	1.871	1.444	1.356	1.301	1.295	1.140	1.122	0.884	0.784	0.648	0.408	0.224
35	3.984	3.215	2.915	2.198	1.637	1.244	1.163	1.112	1.106	0.960	0.944	0.710	0.614	0.479	0.240	0.224
40	3.312	2.822	2.587	1.932	1.425	1.062	0.986	0.938	0.932	0.793	0.778	0.547	0.452	0.319	0.224	0.224
45	2.747	2.486	2.304	1.701	1.234	0.894	0.823	0.777	0.771	0.638	0.623	0.392	0.299	0.224	0.224	0.224
50	2.266	2.198	2.058	1.495	1.059	0.739	0.672	0.628	0.622	0.494	0.479	0.246	0.224	0.224	0.224	0.224
55	1.948	1.948	1.833	1.309	0.900	0.596	0.531	0.489	0.484	0.359	0.344	0.224	0.224	0.224	0.224	0.224
60	1.736	1.736	1.633	1.141	0.754	0.463	0.401	0.360	0.355	0.232	0.224	0.224	0.224	0.224	0.224	0.224
65	1.550	1.550	1.455	0.989	0.619	0.340	0.280	0.239	0.234	0.224	0.224	0.224	0.224	0.224	0.224	0.224
70	1.386	1.386	1.296	0.850	0.494	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224
75	1.296	1.291	1.199	0.773	0.442	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224
80	1.223	1.207	1.113	0.707	0.397	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224
85	1.156	1.131	1.037	0.649	0.358	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224
90	1.096	1.062	0.969	0.598	0.324	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224
95	1.040	1.000	0.907	0.552	0.294	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224
100	0.989	0.943	0.851	0.511	0.267	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224
105	0.943	0.891	0.800	0.475	0.243	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224
110	0.899	0.844	0.754	0.441	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224
115	0.859	0.800	0.711	0.411	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224
120	0.822	0.759	0.672	0.383	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224
125	0.787	0.721	0.635	0.358	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224
130	0.754	0.686	0.601	0.335	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224
135	0.724	0.653	0.570	0.313	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224

- 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.



# SC601/2 Loading Tables

## EN13381-10: Solid Steel Bars

**Nullifire**  
Smart Protection

Table 7: 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)
15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.639
20	-	-	-	-	-	-	-	-	-	-	-	3.599	3.287	2.859	2.094	1.598
25	-	-	-	-	4.206	3.468	3.291	3.174	3.160	2.810	2.770	2.226	1.999	1.803	1.475	1.130
30	-	-	-	-	3.656	2.975	2.815	2.710	2.698	2.387	2.352	1.933	1.789	1.599	1.276	0.927
35	-	-	-	3.900	3.212	2.586	2.440	2.347	2.335	2.058	2.027	1.727	1.590	1.406	1.086	0.733
40	-	-	-	3.496	2.847	2.270	2.138	2.054	2.044	1.840	1.818	1.533	1.402	1.222	0.906	0.549
45	-	4.207	3.905	3.152	2.541	2.010	1.907	1.843	1.835	1.649	1.628	1.351	1.224	1.047	0.733	0.373
50	-	3.799	3.556	2.856	2.281	1.812	1.715	1.655	1.647	1.470	1.450	1.178	1.055	0.881	0.569	0.224
55	4.025	3.444	3.248	2.599	2.057	1.628	1.537	1.480	1.473	1.303	1.284	1.015	0.894	0.723	0.412	0.224
60	3.524	3.132	2.976	2.372	1.862	1.458	1.372	1.317	1.310	1.147	1.128	0.861	0.742	0.572	0.261	0.224
65	3.083	2.856	2.733	2.172	1.683	1.300	1.217	1.165	1.158	1.000	0.982	0.714	0.596	0.427	0.224	0.224
70	2.693	2.610	2.516	1.992	1.518	1.152	1.073	1.022	1.016	0.862	0.844	0.575	0.458	0.289	0.224	0.224
75	2.507	2.485	2.390	1.835	1.387	1.044	0.971	0.923	0.917	0.774	0.758	0.506	0.397	0.242	0.224	0.224
80	2.349	2.349	2.251	1.699	1.274	0.953	0.884	0.839	0.833	0.700	0.685	0.448	0.346	0.224	0.224	0.224
85	2.199	2.199	2.097	1.580	1.176	0.874	0.809	0.767	0.762	0.637	0.622	0.398	0.304	0.224	0.224	0.224
90	2.034	2.034	1.954	1.474	1.091	0.805	0.744	0.704	0.699	0.582	0.568	0.356	0.267	0.224	0.224	0.224
95	1.919	1.919	1.844	1.380	1.016	0.745	0.687	0.650	0.645	0.534	0.521	0.319	0.235	0.224	0.224	0.224
100	1.822	1.822	1.744	1.296	0.949	0.691	0.637	0.601	0.597	0.491	0.479	0.287	0.224	0.224	0.224	0.224
105	1.733	1.733	1.653	1.221	0.889	0.644	0.592	0.558	0.554	0.454	0.442	0.258	0.224	0.224	0.224	0.224
110	1.651	1.651	1.570	1.152	0.835	0.601	0.552	0.520	0.516	0.420	0.409	0.233	0.224	0.224	0.224	0.224
115	1.575	1.575	1.494	1.090	0.786	0.563	0.515	0.485	0.481	0.390	0.380	0.224	0.224	0.224	0.224	0.224
120	1.506	1.506	1.423	1.033	0.742	0.528	0.483	0.453	0.450	0.363	0.353	0.224	0.224	0.224	0.224	0.224
125	1.441	1.441	1.359	0.980	0.702	0.496	0.453	0.425	0.421	0.338	0.328	0.224	0.224	0.224	0.224	0.224
130	1.381	1.381	1.298	0.932	0.665	0.467	0.426	0.399	0.395	0.315	0.306	0.224	0.224	0.224	0.224	0.224
135	1.324	1.324	1.243	0.888	0.630	0.440	0.400	0.375	0.372	0.295	0.286	0.224	0.224	0.224	0.224	0.224

- 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.



# SC601/2 Loading Tables

## EN13381-10: Solid Steel Bars

**Nullifire**  
Smart Protection

Table 8: 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)
15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.376
25	-	-	-	-	-	-	-	-	-	-	-	3.888	3.604	3.238	2.596	1.946
30	-	-	-	-	-	-	-	-	-	4.041	4.000	3.353	3.104	2.778	2.205	1.722
35	-	-	-	-	-	4.147	3.980	3.870	3.856	3.529	3.492	2.938	2.718	2.425	1.933	1.509
40	-	-	-	-	-	3.683	3.529	3.428	3.416	3.119	3.085	2.607	2.412	2.146	1.732	1.306
45	-	-	-	-	3.917	3.300	3.157	3.066	3.054	2.783	2.753	2.338	2.162	1.928	1.541	1.113
50	-	-	-	4.204	3.553	2.977	2.846	2.762	2.752	2.503	2.475	2.113	1.956	1.741	1.358	0.928
55	-	-	-	3.859	3.241	2.703	2.581	2.504	2.495	2.267	2.241	1.922	1.773	1.562	1.183	0.752
60	-	-	-	3.556	2.969	2.466	2.353	2.282	2.274	2.064	2.040	1.744	1.599	1.392	1.016	0.584
65	-	4.183	3.988	3.288	2.730	2.260	2.155	2.090	2.081	1.887	1.865	1.575	1.433	1.229	0.856	0.422
70	-	3.865	3.706	3.049	2.519	2.078	1.980	1.918	1.910	1.723	1.701	1.414	1.275	1.073	0.703	0.268
75	-	3.795	3.638	2.945	2.368	1.897	1.804	1.745	1.737	1.562	1.542	1.270	1.141	0.955	0.615	0.224
80	-	3.720	3.563	2.828	2.192	1.742	1.654	1.598	1.591	1.427	1.408	1.150	1.029	0.857	0.541	0.224
85	4.194	3.637	3.480	2.695	1.995	1.608	1.525	1.472	1.466	1.311	1.293	1.048	0.934	0.773	0.479	0.224
90	4.069	3.545	3.388	2.542	1.858	1.491	1.413	1.363	1.357	1.211	1.194	0.960	0.853	0.701	0.426	0.224
95	3.926	3.444	3.284	2.363	1.737	1.389	1.315	1.267	1.261	1.123	1.107	0.884	0.782	0.639	0.379	0.224
100	3.762	3.331	3.167	2.154	1.630	1.298	1.228	1.183	1.177	1.046	1.031	0.817	0.720	0.585	0.339	0.224
105	3.572	3.205	3.034	1.967	1.534	1.218	1.151	1.108	1.102	0.977	0.963	0.758	0.666	0.537	0.303	0.224
110	3.349	3.062	2.881	1.863	1.448	1.146	1.082	1.041	1.035	0.916	0.902	0.705	0.617	0.494	0.271	0.224
115	3.083	2.899	2.703	1.768	1.370	1.080	1.019	0.980	0.975	0.861	0.847	0.658	0.573	0.456	0.243	0.224
120	2.762	2.713	2.495	1.682	1.299	1.021	0.963	0.925	0.920	0.811	0.798	0.615	0.534	0.421	0.224	0.224
125	2.497	2.497	2.247	1.603	1.235	0.967	0.911	0.875	0.871	0.766	0.753	0.577	0.499	0.390	0.224	0.224
130	2.244	2.244	1.995	1.530	1.175	0.918	0.864	0.830	0.825	0.724	0.712	0.541	0.466	0.361	0.224	0.224
135	1.996	1.996	1.915	1.463	1.121	0.873	0.821	0.788	0.784	0.686	0.675	0.509	0.437	0.336	0.224	0.224

- 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.