



# SC90I Loading Tables

## EN13381-6: Concrete Filled Hollow Columns

**Nullifire**  
Smart Protection

Table 1  
Fire Resistance Period: 30 Minutes  
Thickness (mm) Required for a Design Temperature of

Wall	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)
3.2	2.524	1.581	0.708	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656
3.5	2.348	1.491	0.703	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656
4.0	2.055	1.342	0.694	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656
4.5	1.762	1.193	0.686	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656
5.0	1.468	1.044	0.678	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656
5.5	1.175	0.895	0.669	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656
6.0	0.882	0.746	0.661	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656
6.3	0.706	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656
6.5	0.705	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656
7.0	0.703	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656
7.5	0.700	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656
8.0	0.697	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656
8.5	0.695	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656
9.0	0.692	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656
9.5	0.690	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656
10.0	0.687	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656
10.5	0.684	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656
11.0	0.682	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656
11.5	0.679	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656
12.0	0.677	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656
12.5	0.674	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656
13.0	0.672	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656
13.5	0.669	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656
14.0	0.666	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656
14.5	0.664	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656
15.0	0.661	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656
15.5	0.659	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656
16.0	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656

- Tables are applicable to equally to circular and square concrete filled hollow columns
- Tables are applicable to columns of 88.9 mm diameter/width and higher.

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  
Fire Resistance Period: 45 Minutes  
Thickness (mm) Required for a Design Temperature of

Wall	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)
3.2	-	-	-	-	-	2.539	2.479	1.698	1.637	0.656	0.656	0.656	0.656	0.656
3.5	-	-	-	-	-	2.357	2.303	1.597	1.542	0.656	0.656	0.656	0.656	0.656
4.0	-	-	-	-	-	2.053	2.009	1.429	1.384	0.656	0.656	0.656	0.656	0.656
4.5	-	-	-	-	-	1.750	1.715	1.261	1.225	0.656	0.656	0.656	0.656	0.656
5.0	-	-	-	-	-	1.446	1.420	1.093	1.067	0.656	0.656	0.656	0.656	0.656
5.5	-	-	-	-	-	1.142	1.126	0.925	0.909	0.656	0.656	0.656	0.656	0.656
6.0	-	-	-	-	-	0.838	0.832	0.757	0.751	0.656	0.656	0.656	0.656	0.656
6.3	1.312	0.974	0.743	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656
6.5	1.306	0.969	0.742	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656
7.0	1.291	0.954	0.737	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656
7.5	1.277	0.939	0.733	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656
8.0	1.262	0.924	0.728	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656
8.5	1.247	0.909	0.724	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656
9.0	1.233	0.894	0.719	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656
9.5	1.218	0.880	0.715	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656
10.0	1.203	0.865	0.710	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656
10.5	1.189	0.850	0.706	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656
11.0	1.174	0.835	0.701	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656
11.5	1.159	0.820	0.697	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656
12.0	1.145	0.805	0.692	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656
12.5	1.130	0.791	0.688	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656
13.0	1.115	0.776	0.683	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656
13.5	1.101	0.761	0.679	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656
14.0	1.086	0.746	0.674	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656
14.5	1.071	0.731	0.670	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656
15.0	1.057	0.716	0.665	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656
15.5	1.042	0.702	0.661	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656
16.0	1.027	0.687	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656

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# SC90I Loading Tables

## EN13381-6: Concrete Filled Hollow Columns

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Table 3  
Fire Resistance Period: 60 Minutes  
Thickness (mm) Required for a Design Temperature of

Wall	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)
3.2	-	-	-	-	-	-	-	-	-	-	-	1.953	0.752	0.656
3.5	-	-	-	-	-	-	-	-	-	-	-	1.828	0.743	0.656
4.0	-	-	-	-	-	-	-	-	-	-	-	1.618	0.727	0.656
4.5	-	-	-	-	-	-	-	-	-	-	-	1.409	0.712	0.656
5.0	-	-	-	-	-	-	-	-	-	-	-	1.200	0.696	0.656
5.5	-	-	-	-	-	-	-	-	-	-	-	0.991	0.681	0.656
6.0	-	-	-	-	-	-	-	-	-	-	-	0.782	0.665	0.656
6.3	1.917	1.516	1.228	0.993	0.936	0.888	0.881	0.741	0.727	0.656	0.656	0.656	0.656	0.656
6.5	1.911	1.511	1.217	0.986	0.930	0.884	0.877	0.739	0.725	0.656	0.656	0.656	0.656	0.656
7.0	1.897	1.496	1.187	0.968	0.915	0.872	0.865	0.734	0.721	0.656	0.656	0.656	0.656	0.656
7.5	1.882	1.482	1.158	0.951	0.901	0.860	0.853	0.730	0.718	0.656	0.656	0.656	0.656	0.656
8.0	1.867	1.468	1.128	0.934	0.887	0.848	0.842	0.726	0.714	0.656	0.656	0.656	0.656	0.656
8.5	1.852	1.453	1.099	0.916	0.872	0.836	0.830	0.721	0.711	0.656	0.656	0.656	0.656	0.656
9.0	1.837	1.439	1.069	0.899	0.858	0.824	0.819	0.717	0.707	0.656	0.656	0.656	0.656	0.656
9.5	1.822	1.425	1.040	0.882	0.843	0.812	0.807	0.713	0.703	0.656	0.656	0.656	0.656	0.656
10.0	1.808	1.411	1.010	0.864	0.829	0.800	0.795	0.708	0.700	0.656	0.656	0.656	0.656	0.656
10.5	1.793	1.396	0.981	0.847	0.814	0.788	0.784	0.704	0.696	0.656	0.656	0.656	0.656	0.656
11.0	1.778	1.382	0.951	0.830	0.800	0.776	0.772	0.700	0.692	0.656	0.656	0.656	0.656	0.656
11.5	1.763	1.368	0.922	0.812	0.786	0.764	0.760	0.695	0.689	0.656	0.656	0.656	0.656	0.656
12.0	1.748	1.354	0.892	0.795	0.771	0.752	0.749	0.691	0.685	0.656	0.656	0.656	0.656	0.656
12.5	1.734	1.339	0.863	0.777	0.757	0.740	0.737	0.687	0.681	0.656	0.656	0.656	0.656	0.656
13.0	1.719	1.325	0.833	0.760	0.742	0.728	0.726	0.682	0.678	0.656	0.656	0.656	0.656	0.656
13.5	1.704	1.311	0.804	0.743	0.728	0.716	0.714	0.678	0.674	0.656	0.656	0.656	0.656	0.656
14.0	1.689	1.297	0.774	0.725	0.714	0.704	0.702	0.673	0.671	0.656	0.656	0.656	0.656	0.656
14.5	1.674	1.282	0.745	0.708	0.699	0.692	0.691	0.669	0.667	0.656	0.656	0.656	0.656	0.656
15.0	1.659	1.268	0.715	0.691	0.685	0.680	0.679	0.665	0.663	0.656	0.656	0.656	0.656	0.656
15.5	1.645	1.254	0.686	0.673	0.670	0.668	0.668	0.660	0.660	0.656	0.656	0.656	0.656	0.656
16.0	1.630	1.239	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656

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Table 4  
Fire Resistance Period: 75 Minutes  
Thickness (mm) Required for a Design Temperature of

Wall	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)
3.2	-	-	-	-	-	-	-	-	-	-	-	-	-	2.011
3.5	-	-	-	-	-	-	-	-	-	-	-	-	-	1.880
4.0	-	-	-	-	-	-	-	-	-	-	-	-	-	1.662
4.5	-	-	-	-	-	-	-	-	-	-	-	-	-	1.443
5.0	-	-	-	-	-	-	-	-	-	-	-	-	-	1.224
5.5	-	-	-	-	-	-	-	-	-	-	-	-	-	1.006
6.0	-	-	-	-	-	-	-	-	-	-	-	-	-	0.787
6.3	2.523	2.058	1.713	1.444	1.382	1.320	1.309	1.130	1.113	0.883	0.795	0.672	0.656	0.656
6.5	2.517	2.053	1.708	1.438	1.375	1.314	1.303	1.124	1.107	0.878	0.792	0.671	0.656	0.656
7.0	2.502	2.039	1.695	1.423	1.359	1.298	1.287	1.109	1.093	0.867	0.785	0.671	0.656	0.656
7.5	2.487	2.025	1.683	1.407	1.344	1.282	1.271	1.094	1.078	0.855	0.778	0.670	0.656	0.656
8.0	2.472	2.011	1.670	1.392	1.328	1.266	1.256	1.079	1.063	0.843	0.771	0.669	0.656	0.656
8.5	2.457	1.998	1.657	1.377	1.312	1.251	1.240	1.064	1.049	0.832	0.763	0.668	0.656	0.656
9.0	2.442	1.984	1.645	1.361	1.296	1.235	1.224	1.050	1.034	0.820	0.756	0.667	0.656	0.656
9.5	2.427	1.970	1.632	1.346	1.280	1.219	1.209	1.035	1.019	0.808	0.749	0.666	0.656	0.656
10.0	2.412	1.957	1.619	1.331	1.264	1.203	1.193	1.020	1.005	0.796	0.742	0.666	0.656	0.656
10.5	2.397	1.943	1.606	1.315	1.248	1.187	1.177	1.005	0.990	0.785	0.735	0.665	0.656	0.656
11.0	2.382	1.929	1.594	1.300	1.232	1.171	1.161	0.990	0.975	0.773	0.728	0.664	0.656	0.656
11.5	2.367	1.916	1.581	1.285	1.216	1.156	1.146	0.976	0.960	0.761	0.720	0.663	0.656	0.656
12.0	2.352	1.902	1.568	1.269	1.200	1.140	1.130	0.961	0.946	0.750	0.713	0.662	0.656	0.656
12.5	2.337	1.888	1.555	1.254	1.184	1.124	1.114	0.946	0.931	0.738	0.706	0.662	0.656	0.656
13.0	2.322	1.874	1.543	1.239	1.168	1.108	1.099	0.931	0.916	0.726	0.699	0.661	0.656	0.656
13.5	2.307	1.861	1.530	1.223	1.152	1.092	1.083	0.916	0.902	0.715	0.692	0.660	0.656	0.656
14.0	2.292	1.847	1.517	1.208	1.136	1.077	1.067	0.901	0.887	0.703	0.685	0.659	0.656	0.656
14.5	2.277	1.833	1.505	1.193	1.120	1.061	1.052	0.887	0.872	0.691	0.677	0.658	0.656	0.656
15.0	2.262	1.820	1.492	1.177	1.104	1.045	1.036	0.872	0.858	0.679	0.670	0.658	0.656	0.656
15.5	2.247	1.806	1.479	1.162	1.088	1.029	1.020	0.857	0.843	0.668	0.663	0.657	0.656	0.656
16.0	2.232	1.792	1.466	1.147	1.072	1.013	1.004	0.842	0.828	0.656	0.656	0.656	0.656	0.656

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Table 5  
Fire Resistance Period: 90 Minutes  
Thickness (mm) Required for a Design Temperature of

Wall	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)
3.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6.3	-	2.600	2.198	1.895	1.828	1.752	1.737	1.519	1.500	1.227	1.127	0.989	0.743	0.656
6.5	-	2.595	2.194	1.890	1.822	1.746	1.731	1.513	1.495	1.221	1.121	0.983	0.741	0.656
7.0	-	2.581	2.183	1.876	1.808	1.732	1.717	1.500	1.481	1.208	1.107	0.968	0.736	0.656
7.5	-	2.568	2.173	1.863	1.794	1.718	1.703	1.486	1.468	1.194	1.094	0.953	0.732	0.656
8.0	-	2.555	2.162	1.849	1.779	1.703	1.689	1.472	1.454	1.181	1.080	0.938	0.728	0.656
8.5	-	2.542	2.151	1.836	1.765	1.689	1.675	1.459	1.441	1.167	1.067	0.923	0.723	0.656
9.0	-	2.529	2.141	1.822	1.751	1.675	1.660	1.445	1.427	1.154	1.053	0.908	0.719	0.656
9.5	-	2.516	2.130	1.809	1.736	1.660	1.646	1.431	1.414	1.141	1.039	0.894	0.714	0.656
10.0	-	2.503	2.119	1.795	1.722	1.646	1.632	1.418	1.400	1.127	1.026	0.879	0.710	0.656
10.5	-	2.489	2.109	1.782	1.708	1.632	1.618	1.404	1.387	1.114	1.012	0.864	0.705	0.656
11.0	-	2.476	2.098	1.768	1.693	1.617	1.603	1.390	1.373	1.100	0.998	0.849	0.701	0.656
11.5	-	2.463	2.087	1.755	1.679	1.603	1.589	1.377	1.360	1.087	0.985	0.834	0.696	0.656
12.0	-	2.450	2.077	1.741	1.665	1.589	1.575	1.363	1.347	1.073	0.971	0.819	0.692	0.656
12.5	-	2.437	2.066	1.728	1.650	1.575	1.561	1.349	1.333	1.060	0.958	0.805	0.687	0.656
13.0	-	2.424	2.055	1.714	1.636	1.560	1.546	1.336	1.320	1.046	0.944	0.790	0.683	0.656
13.5	-	2.411	2.045	1.701	1.622	1.546	1.532	1.322	1.306	1.033	0.930	0.775	0.678	0.656
14.0	-	2.398	2.034	1.687	1.607	1.532	1.518	1.308	1.293	1.019	0.917	0.760	0.674	0.656
14.5	-	2.384	2.023	1.674	1.593	1.517	1.504	1.295	1.279	1.006	0.903	0.745	0.669	0.656
15.0	-	2.371	2.013	1.660	1.579	1.503	1.490	1.281	1.266	0.993	0.889	0.730	0.665	0.656
15.5	-	2.358	2.002	1.647	1.564	1.489	1.475	1.267	1.252	0.979	0.876	0.715	0.660	0.656
16.0	-	2.345	1.991	1.633	1.550	1.474	1.461	1.254	1.239	0.966	0.862	0.701	0.656	0.656

- Tables are applicable to equally to circular and square concrete filled hollow columns
- Tables are applicable to columns of 88.9 mm diameter/width and higher.

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.



# SC90I Loading Tables

## EN13381-6: Concrete Filled Hollow Columns

**Nullifire**  
Smart Protection

Table 6  
Fire Resistance Period: 105 Minutes

Thickness (mm) Required for a Design Temperature of

Wall	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)
3.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6.3	-	-	2.683	2.347	2.275	2.184	2.165	1.908	1.887	1.570	1.458	1.306	1.031	0.783
6.5	-	-	2.680	2.342	2.269	2.179	2.160	1.903	1.882	1.566	1.453	1.300	1.026	0.780
7.0	-	-	2.671	2.330	2.257	2.166	2.147	1.890	1.870	1.554	1.441	1.287	1.012	0.774
7.5	-	-	2.663	2.319	2.244	2.153	2.135	1.878	1.858	1.542	1.429	1.274	0.999	0.767
8.0	-	-	2.654	2.307	2.231	2.140	2.122	1.865	1.845	1.530	1.417	1.261	0.985	0.761
8.5	-	-	2.645	2.295	2.219	2.127	2.109	1.853	1.833	1.519	1.405	1.248	0.971	0.754
9.0	-	-	2.637	2.283	2.206	2.115	2.096	1.840	1.821	1.507	1.393	1.234	0.958	0.747
9.5	-	-	2.628	2.272	2.193	2.102	2.084	1.828	1.809	1.495	1.381	1.221	0.944	0.741
10.0	-	-	2.620	2.260	2.181	2.089	2.071	1.815	1.796	1.484	1.369	1.208	0.930	0.734
10.5	-	-	2.611	2.248	2.168	2.076	2.058	1.803	1.784	1.472	1.357	1.195	0.917	0.728
11.0	-	-	2.602	2.237	2.155	2.063	2.045	1.790	1.772	1.460	1.345	1.181	0.903	0.721
11.5	-	-	2.594	2.225	2.142	2.051	2.033	1.778	1.760	1.449	1.333	1.168	0.889	0.715
12.0	-	-	2.585	2.213	2.130	2.038	2.020	1.765	1.747	1.437	1.321	1.155	0.876	0.708
12.5	-	-	2.577	2.202	2.117	2.025	2.007	1.753	1.735	1.425	1.309	1.142	0.862	0.702
13.0	-	-	2.568	2.190	2.104	2.012	1.994	1.740	1.723	1.413	1.297	1.128	0.848	0.695
13.5	-	-	2.560	2.178	2.092	1.999	1.982	1.728	1.710	1.402	1.285	1.115	0.835	0.689
14.0	-	-	2.551	2.166	2.079	1.987	1.969	1.715	1.698	1.390	1.273	1.102	0.821	0.682
14.5	-	-	2.542	2.155	2.066	1.974	1.956	1.703	1.686	1.378	1.261	1.089	0.808	0.676
15.0	-	-	2.534	2.143	2.053	1.961	1.943	1.690	1.674	1.367	1.249	1.076	0.794	0.669
15.5	-	-	2.525	2.131	2.041	1.948	1.931	1.678	1.661	1.355	1.237	1.062	0.780	0.663
16.0	-	-	2.517	2.120	2.028	1.936	1.918	1.665	1.649	1.343	1.225	1.049	0.767	0.656

- Tables are applicable to equally to circular and square concrete filled hollow columns
- Tables are applicable to columns of 88.9 mm diameter/width and higher.

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.



# SC901 Loading Tables

## EN13381-6: Concrete Filled Hollow Columns

**Nullifire**  
Smart Protection

**Table 7**  
**Fire Resistance Period: 120 Minutes**

Thickness (mm) Required for a Design Temperature of

Wall	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)
3.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6.3	-	-	-	2.798	2.721	2.615	2.593	2.297	2.274	1.914	1.790	1.623	1.320	1.064
6.5	-	-	-	2.794	2.716	2.611	2.589	2.293	2.270	1.910	1.786	1.618	1.315	1.058
7.0	-	-	-	2.784	2.705	2.600	2.577	2.281	2.258	1.900	1.775	1.607	1.304	1.041
7.5	-	-	-	2.774	2.694	2.588	2.566	2.270	2.247	1.890	1.765	1.595	1.292	1.025
8.0	-	-	-	2.764	2.683	2.577	2.555	2.259	2.236	1.880	1.754	1.583	1.280	1.008
8.5	-	-	-	2.754	2.672	2.566	2.544	2.247	2.225	1.870	1.744	1.572	1.269	0.992
9.0	-	-	-	2.745	2.661	2.555	2.532	2.236	2.214	1.860	1.734	1.560	1.257	0.975
9.5	-	-	-	2.735	2.650	2.543	2.521	2.224	2.203	1.850	1.723	1.549	1.245	0.959
10.0	-	-	-	2.725	2.639	2.532	2.510	2.213	2.192	1.840	1.713	1.537	1.234	0.942
10.5	-	-	-	2.715	2.628	2.521	2.498	2.202	2.181	1.830	1.703	1.525	1.222	0.926
11.0	-	-	-	2.705	2.617	2.509	2.487	2.190	2.170	1.820	1.692	1.514	1.211	0.909
11.5	-	-	-	2.695	2.606	2.498	2.476	2.179	2.159	1.810	1.682	1.502	1.199	0.893
12.0	-	-	-	2.685	2.595	2.487	2.465	2.168	2.148	1.800	1.672	1.491	1.187	0.876
12.5	-	-	-	2.675	2.584	2.476	2.453	2.156	2.137	1.790	1.661	1.479	1.176	0.860
13.0	-	-	-	2.665	2.573	2.464	2.442	2.145	2.126	1.780	1.651	1.467	1.164	0.844
13.5	-	-	-	2.656	2.561	2.453	2.431	2.134	2.115	1.771	1.640	1.456	1.152	0.827
14.0	-	-	-	2.646	2.550	2.442	2.420	2.122	2.104	1.761	1.630	1.444	1.141	0.811
14.5	-	-	-	2.636	2.539	2.430	2.408	2.111	2.093	1.751	1.620	1.433	1.129	0.794
15.0	-	-	-	2.626	2.528	2.419	2.397	2.100	2.082	1.741	1.609	1.421	1.117	0.778
15.5	-	-	-	2.616	2.517	2.408	2.386	2.088	2.071	1.731	1.599	1.409	1.106	0.761
16.0	-	-	-	2.606	2.506	2.397	2.375	2.077	2.060	1.721	1.589	1.398	1.094	0.745

- Tables are applicable to equally to circular and square concrete filled hollow columns
- Tables are applicable to columns of 88.9 mm diameter/width and higher.

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.