CERTIFICATE OF APPROVAL
No CF 5077

This is to certify that, in accordance with
TS00 General Requirements for Certification of Fire Protection Products
The undermentioned products of

SHERWIN-WILLIAMS

Tower Works, Kestor Street, Bolton, BL2 2AL
Tel: 01204 521 771 Fax: 01204 382 115

Have been assessed against the requirements of the Technical Schedule(s) denoted below and are approved for use subject to the conditions appended hereto:

CERTIFIED PRODUCT	TECHNICAL SCHEDULE
FIRETEX FX1003 FIRETEX FX2003	TS15 Intumescent Coatings for Steelwork

Signed and sealed for and on behalf of Warringtonfire Testing and Certification Limited

Paul Duggan
Certification Manager

Issued: 12th April 2012
Revised: 29th May 2019
Valid to: 30th June 2019

CERTIFICATE No CF 5077
SHERWIN-WILLIAMS

FIRETEX FX1003/FX2003

1. This approval relates to the use of FIRETEX FX1003 and FIRETEX FX2003 for the fire protection of I-shaped and hollow steel sections. The precise scope is given in Tables 1 to 40 which show the total dry film thickness of FIRETEX FX1003 and FIRETEX FX2003 (excluding primer and top sealer) required to provide fire resistance periods in accordance with BS476: Part 21: 1987 of up to 120 minutes for differing sections, section factors and design temperatures.

2. This certification is provided to the client for their own purposes and we cannot opine on whether it will be accepted by Building Control authorities or any other third parties for any purpose.

3. The products are approved on the basis of:

   i) Initial type testing.
   ii) A design appraisal against TS15.
   iii) Certification of Quality Management systems to ISO 9001.
   iv) Inspection and surveillance of factory production control.
   v) Audit testing.

4. The data shown is applicable to steel sections blast cleaned to ISO 8501-1 SA2.5 or equivalent and primed with a suitable and compatible primer. Specifications of surface preparations, primers and top sealers are available from Sherwin-Williams whose responsibility is to ensure that FIRETEX FX1003 and FIRETEX FX2003 is compatible for use in respect of both ambient and fire conditions. The total dry film thickness of primer should not exceed that tested.

5. Specific data given in the tables applies to horizontal, vertical, flexural and compression members supporting loads up to the maximum design loads specified in BS449: Part 2.

6. The approval relates to on going production. Product and/or its immediate packaging is identified with the manufacturers' name, the product name or number, the CERTIFIRE name or name and mark, together with the CERTIFIRE certificate number and application where appropriate.

7. The data shown in the tables is based on an assessment that complies with the criteria for acceptability now incorporated within the CERTIFIRE scheme.

8. Tables relating to I-sections also apply to structural sections with re-entrant details including channels, angles and Tees.

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FIRETEX FX1003 and FIRETEX FX2003

Table 1: I-Section Beams: 15 Minutes									
Section Factor up to m^{-1}	Thickness (mm) Required for a Design Temperature of								
	350°C	400°C	450°C	500°C	550°C	600°C	620°C	650°C	700°C
30	0.190	0.190	0.190	0.190	0.190	0.190	0.190	0.190	0.190
35	0.190	0.190	0.190	0.190	0.190	0.190	0.190	0.190	0.190
40	0.190	0.190	0.190	0.190	0.190	0.190	0.190	0.190	0.190
45	0.190	0.190	0.190	0.190	0.190	0.190	0.190	0.190	0.190
50	0.190	0.190	0.190	0.190	0.190	0.190	0.190	0.190	0.190
55	0.190	0.190	0.190	0.190	0.190	0.190	0.190	0.190	0.190
60	0.190	0.190	0.190	0.190	0.190	0.190	0.190	0.190	0.190
65	0.190	0.190	0.190	0.190	0.190	0.190	0.190	0.190	0.190
70	0.190	0.190	0.190	0.190	0.190	0.190	0.190	0.190	0.190
75	0.190	0.190	0.190	0.190	0.190	0.190	0.190	0.190	0.190
80	0.190	0.190	0.190	0.190	0.190	0.190	0.190	0.190	0.190
85	0.190	0.190	0.190	0.190	0.190	0.190	0.190	0.190	0.190
90	0.190	0.190	0.190	0.190	0.190	0.190	0.190	0.190	0.190
95	0.190	0.190	0.190	0.190	0.190	0.190	0.190	0.190	0.190
100	0.190	0.190	0.190	0.190	0.190	0.190	0.190	0.190	0.190
105	0.190	0.190	0.190	0.190	0.190	0.190	0.190	0.190	0.190
110	0.190	0.190	0.190	0.190	0.190	0.190	0.190	0.190	0.190
115	0.190	0.190	0.190	0.190	0.190	0.190	0.190	0.190	0.190
120	0.190	0.190	0.190	0.190	0.190	0.190	0.190	0.190	0.190
125	0.190	0.190	0.190	0.190	0.190	0.190	0.190	0.190	0.190
130	0.190	0.190	0.190	0.190	0.190	0.190	0.190	0.190	0.190
135	0.193	0.190	0.190	0.190	0.190	0.190	0.190	0.190	0.190
140	0.198	0.190	0.190	0.190	0.190	0.190	0.190	0.190	0.190
145	0.202	0.190	0.190	0.190	0.190	0.190	0.190	0.190	0.190
150	0.207	0.190	0.190	0.190	0.190	0.190	0.190	0.190	0.190
155	0.211	0.190	0.190	0.190	0.190	0.190	0.190	0.190	0.190
160	0.216	0.190	0.190	0.190	0.190	0.190	0.190	0.190	0.190
165	0.220	0.190	0.190	0.190	0.190	0.190	0.190	0.190	0.190
170	0.225	0.190	0.190	0.190	0.190	0.190	0.190	0.190	0.190
175	0.230	0.190	0.190	0.190	0.190	0.190	0.190	0.190	0.190
180	0.234	0.190	0.190	0.190	0.190	0.190	0.190	0.190	0.190
185	0.239	0.190	0.190	0.190	0.190	0.190	0.190	0.190	0.190
190	0.243	0.190	0.190	0.190	0.190	0.190	0.190	0.190	0.190
195	0.248	0.190	0.190	0.190	0.190	0.190	0.190	0.190	0.190
200	0.252	0.190	0.190	0.190	0.190	0.190	0.190	0.190	0.190
205	0.257	0.190	0.190	0.190	0.190	0.190	0.190	0.190	0.190
210	0.261	0.190	0.190	0.190	0.190	0.190	0.190	0.190	0.190
215	0.266	0.190	0.190	0.190	0.190	0.190	0.190	0.190	0.190
220	0.270	0.190	0.190	0.190	0.190	0.190	0.190	0.190	0.190
225	0.275	0.190	0.190	0.190	0.190	0.190	0.190	0.190	0.190
230	0.280	0.190	0.190	0.190	0.190	0.190	0.190	0.190	0.190
235	0.284	0.190	0.190	0.190	0.190	0.190	0.190	0.190	0.190
240	0.289	0.190	0.190	0.190	0.190	0.190	0.190	0.190	0.190
245	0.293	0.190	0.190	0.190	0.190	0.190	0.190	0.190	0.190
250	0.298	0.190	0.190	0.190	0.190	0.190	0.190	0.190	0.190
255	0.302	0.190	0.190	0.190	0.190	0.190	0.190	0.190	0.190
260	0.307	0.190	0.190	0.190	0.190	0.190	0.190	0.190	0.190
265	0.311	0.190	0.190	0.190	0.190	0.190	0.190	0.190	0.190
270	0.316	0.190	0.190	0.190	0.190	0.190	0.190	0.190	0.190
275	0.320	0.190	0.190	0.190	0.190	0.190	0.190	0.190	0.190
280	0.325	0.190	0.190	0.190	0.190	0.190	0.190	0.190	0.190
285	0.330	0.190	0.190	0.190	0.190	0.190	0.190	0.190	0.190
290	0.334	0.190	0.190	0.190	0.190	0.190	0.190	0.190	0.190
295	0.339	0.190	0.190	0.190	0.190	0.190	0.190	0.190	0.190
300	0.343	0.190	0.190	0.190	0.190	0.190	0.190	0.190	0.190
305	0.348	0.190	0.190	0.190	0.190	0.190	0.190	0.190	0.190
310	0.352	0.190	0.190	0.190	0.190	0.190	0.190	0.190	0.190
315	0.357	0.190	0.190	0.190	0.190	0.190	0.190	0.190	0.190
320	0.361	0.190	0.190	0.190	0.190	0.190	0.190	0.190	0.190
325	0.366	0.190	0.190	0.190	0.190	0.190	0.190	0.190	0.190
330	0.370	0.190	0.190	0.190	0.190	0.190	0.190	0.190	0.190
335	0.375	0.190	0.190	0.190	0.190	0.190	0.190	0.190	0.190
340	0.380	0.190	0.190	0.190	0.190	0.190	0.190	0.190	0.190
345	0.384	0.190	0.190	0.190	0.190	0.190	0.190	0.190	0.190

Thickness is intumescent only. Table applies to beams with 3-sided protection and a concrete slab

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FIRETEX FX1003 and FIRETEX FX2003

Table 2: I-Section Beams: 30 Minutes									
Section Factor up to m^{-1}	Thickness (mm) Required for a Design Temperature of								
	350°C	400°C	450°C	500°C	550°C	600°C	620°C	650°C	700°C
30	0.200	0.190	0.190	0.190	0.190	0.190	0.190	0.190	0.190
35	0.217	0.190	0.190	0.190	0.190	0.190	0.190	0.190	0.190
40	0.233	0.190	0.190	0.190	0.190	0.190	0.190	0.190	0.190
45	0.250	0.190	0.190	0.190	0.190	0.190	0.190	0.190	0.190
50	0.266	0.190	0.190	0.190	0.190	0.190	0.190	0.190	0.190
55	0.283	0.190	0.190	0.190	0.190	0.190	0.190	0.190	0.190
60	0.300	0.198	0.190	0.190	0.190	0.190	0.190	0.190	0.190
65	0.316	0.210	0.190	0.190	0.190	0.190	0.190	0.190	0.190
70	0.333	0.222	0.190	0.190	0.190	0.190	0.190	0.190	0.190
75	0.349	0.233	0.190	0.190	0.190	0.190	0.190	0.190	0.190
80	0.366	0.245	0.190	0.190	0.190	0.190	0.190	0.190	0.190
85	0.382	0.257	0.190	0.190	0.190	0.190	0.190	0.190	0.190
90	0.399	0.268	0.190	0.190	0.190	0.190	0.190	0.190	0.190
95	0.415	0.280	0.190	0.190	0.190	0.190	0.190	0.190	0.190
100	0.432	0.292	0.190	0.190	0.190	0.190	0.190	0.190	0.190
105	0.448	0.303	0.197	0.190	0.190	0.190	0.190	0.190	0.190
110	0.465	0.315	0.208	0.190	0.190	0.190	0.190	0.190	0.190
115	0.481	0.327	0.219	0.190	0.190	0.190	0.190	0.190	0.190
120	0.498	0.338	0.231	0.190	0.190	0.190	0.190	0.190	0.190
125	0.514	0.350	0.242	0.190	0.190	0.190	0.190	0.190	0.190
130	0.534	0.362	0.253	0.190	0.190	0.190	0.190	0.190	0.190
135	0.558	0.373	0.265	0.190	0.190	0.190	0.190	0.190	0.190
140	0.581	0.385	0.276	0.190	0.190	0.190	0.190	0.190	0.190
145	0.605	0.397	0.287	0.190	0.190	0.190	0.190	0.190	0.190
150	0.629	0.408	0.299	0.190	0.190	0.190	0.190	0.190	0.190
155	0.653	0.420	0.310	0.195	0.190	0.190	0.190	0.190	0.190
160	0.677	0.432	0.321	0.205	0.190	0.190	0.190	0.190	0.190
165	0.701	0.443	0.332	0.214	0.190	0.190	0.190	0.190	0.190
170	0.725	0.455	0.344	0.224	0.190	0.190	0.190	0.190	0.190
175	0.749	0.467	0.355	0.234	0.190	0.190	0.190	0.190	0.190
180	0.773	0.478	0.366	0.244	0.190	0.190	0.190	0.190	0.190
185	0.797	0.490	0.378	0.254	0.190	0.190	0.190	0.190	0.190
190	0.821	0.502	0.389	0.264	0.190	0.190	0.190	0.190	0.190
195	0.845	0.513	0.400	0.274	0.190	0.190	0.190	0.190	0.190
200	0.879	0.525	0.412	0.283	0.190	0.190	0.190	0.190	0.190
205	0.915	0.539	0.423	0.293	0.190	0.190	0.190	0.190	0.190
210	0.952	0.554	0.434	0.303	0.190	0.190	0.190	0.190	0.190
215	0.988	0.568	0.446	0.313	0.190	0.190	0.190	0.190	0.190
220	1.025	0.583	0.457	0.323	0.190	0.190	0.190	0.190	0.190
225	1.062	0.597	0.468	0.333	0.190	0.190	0.190	0.190	0.190
230	1.098	0.612	0.480	0.343	0.190	0.190	0.190	0.190	0.190
235	1.135	0.626	0.491	0.352	0.190	0.190	0.190	0.190	0.190
240	1.171	0.641	0.502	0.362	0.190	0.190	0.190	0.190	0.190
245	1.212	0.655	0.514	0.372	0.190	0.190	0.190	0.190	0.190
250	1.265	0.669	0.525	0.382	0.190	0.190	0.190	0.190	0.190
255	1.318	0.684	0.536	0.392	0.190	0.190	0.190	0.190	0.190
260	1.371	0.698	0.547	0.402	0.190	0.190	0.190	0.190	0.190
265	1.424	0.713	0.558	0.412	0.195	0.190	0.190	0.190	0.190
270	1.477	0.727	0.568	0.421	0.204	0.190	0.190	0.190	0.190
275	1.530	0.742	0.579	0.431	0.214	0.190	0.190	0.190	0.190
280	1.583	0.756	0.590	0.441	0.224	0.190	0.190	0.190	0.190
285	1.636	0.771	0.601	0.451	0.234	0.190	0.190	0.190	0.190
290	1.688	0.785	0.612	0.461	0.243	0.190	0.190	0.190	0.190
295	1.741	0.799	0.623	0.471	0.253	0.190	0.190	0.190	0.190
300	1.794	0.814	0.633	0.480	0.263	0.190	0.190	0.190	0.190
305	1.847	0.828	0.644	0.490	0.273	0.190	0.190	0.190	0.190
310	1.900	0.843	0.655	0.500	0.282	0.190	0.190	0.190	0.190
315	1.953	0.865	0.666	0.510	0.292	0.190	0.190	0.190	0.190
320	2.006	0.895	0.677	0.520	0.302	0.190	0.190	0.190	0.190
325	2.059	0.926	0.688	0.530	0.311	0.190	0.190	0.190	0.190
330	2.112	0.956	0.698	0.540	0.321	0.190	0.190	0.190	0.190
335	2.165	0.986	0.709	0.549	0.331	0.190	0.190	0.190	0.190
340	2.218	1.016	0.720	0.559	0.341	0.190	0.190	0.190	0.190
345	2.271	1.047	0.731	0.569	0.350	0.190	0.190	0.190	0.190

Thickness is intumescent only. Table applies to beams with 3-sided protection and a concrete slab.

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FIRETEX FX1003 and FIRETEX FX2003

Table 3: I-Section Beams: 45 Minutes									
Section Factor up to m^{-1}	Thickness (mm) Required for a Design Temperature of								
	350°C	400°C	450°C	500°C	550°C	600°C	620°C	650°C	700°C
30	0.368	0.222	0.190	0.190	0.190	0.190	0.190	0.190	0.190
35	0.383	0.246	0.193	0.190	0.190	0.190	0.190	0.190	0.190
40	0.397	0.269	0.210	0.190	0.190	0.190	0.190	0.190	0.190
45	0.412	0.293	0.226	0.192	0.190	0.190	0.190	0.190	0.190
50	0.427	0.317	0.243	0.205	0.190	0.190	0.190	0.190	0.190
55	0.442	0.341	0.259	0.218	0.190	0.190	0.190	0.190	0.190
60	0.456	0.365	0.276	0.231	0.190	0.190	0.190	0.190	0.190
65	0.471	0.389	0.293	0.243	0.198	0.190	0.190	0.190	0.190
70	0.486	0.413	0.309	0.256	0.207	0.190	0.190	0.190	0.190
75	0.500	0.437	0.326	0.269	0.216	0.190	0.190	0.190	0.190
80	0.515	0.461	0.342	0.282	0.225	0.190	0.190	0.190	0.190
85	0.547	0.485	0.359	0.294	0.234	0.190	0.190	0.190	0.190
90	0.612	0.508	0.375	0.307	0.243	0.190	0.190	0.190	0.190
95	0.677	0.532	0.392	0.320	0.252	0.193	0.190	0.190	0.190
100	0.742	0.554	0.409	0.333	0.262	0.200	0.190	0.190	0.190
105	0.807	0.576	0.425	0.345	0.271	0.207	0.190	0.190	0.190
110	0.872	0.598	0.442	0.358	0.280	0.214	0.190	0.190	0.190
115	0.938	0.621	0.458	0.371	0.289	0.221	0.190	0.190	0.190
120	1.003	0.643	0.475	0.384	0.298	0.228	0.194	0.190	0.190
125	1.068	0.665	0.491	0.396	0.307	0.235	0.201	0.190	0.190
130	1.133	0.687	0.508	0.409	0.317	0.242	0.208	0.190	0.190
135	1.198	0.709	0.525	0.422	0.326	0.249	0.215	0.190	0.190
140	1.280	0.732	0.542	0.435	0.335	0.256	0.222	0.190	0.190
145	1.362	0.754	0.560	0.447	0.344	0.263	0.229	0.190	0.190
150	1.444	0.776	0.577	0.460	0.353	0.270	0.236	0.190	0.190
155	1.526	0.798	0.595	0.473	0.362	0.277	0.243	0.190	0.190
160	1.608	0.820	0.613	0.486	0.371	0.284	0.250	0.192	0.190
165	1.690	0.843	0.630	0.498	0.381	0.291	0.257	0.197	0.190
170	1.772	0.881	0.648	0.511	0.390	0.298	0.264	0.202	0.190
175	1.854	0.928	0.666	0.524	0.399	0.305	0.271	0.207	0.190
180	1.936	0.975	0.683	0.539	0.408	0.312	0.278	0.211	0.190
185	2.017	1.022	0.701	0.555	0.417	0.319	0.285	0.216	0.190
190	2.099	1.068	0.719	0.571	0.426	0.325	0.292	0.221	0.190
195	2.181	1.115	0.736	0.587	0.435	0.332	0.299	0.226	0.190
200	2.263	1.162	0.754	0.603	0.445	0.339	0.306	0.231	0.190
205	2.345	1.211	0.771	0.619	0.454	0.346	0.313	0.236	0.192
210	2.410	1.272	0.789	0.635	0.463	0.353	0.320	0.241	0.197
215	2.438	1.332	0.807	0.651	0.472	0.360	0.327	0.246	0.202
220	2.467	1.393	0.824	0.667	0.481	0.367	0.334	0.251	0.207
225	2.496	1.454	0.842	0.682	0.490	0.374	0.341	0.256	0.211
230	2.525	1.514	0.877	0.698	0.500	0.381	0.348	0.260	0.216
235	2.554	1.575	0.925	0.714	0.509	0.388	0.355	0.265	0.221
240	2.582	1.636	0.974	0.730	0.518	0.395	0.362	0.270	0.226
245	2.611	1.696	1.023	0.746	0.528	0.402	0.369	0.275	0.230
250	2.640	1.757	1.072	0.762	0.543	0.409	0.376	0.280	0.235
255	2.669	1.818	1.120	0.778	0.557	0.416	0.383	0.285	0.240
260	2.698	1.878	1.169	0.794	0.571	0.423	0.389	0.290	0.244
265	2.726	1.939	1.224	0.809	0.586	0.430	0.396	0.295	0.249
270	2.755	1.999	1.287	0.825	0.600	0.437	0.403	0.300	0.254
275	2.784	2.060	1.351	0.841	0.614	0.444	0.410	0.305	0.259
280	2.813	2.121	1.415	0.862	0.629	0.451	0.417	0.309	0.263
285	2.842	2.181	1.479	0.888	0.643	0.458	0.424	0.314	0.268
290	2.870	2.242	1.543	0.914	0.657	0.465	0.431	0.319	0.273
295	2.899	2.303	1.607	0.940	0.672	0.472	0.438	0.324	0.278
300	2.928	2.363	1.670	0.966	0.686	0.479	0.445	0.329	0.282
305	2.957	2.409	1.734	0.992	0.700	0.486	0.452	0.334	0.287
310	2.986	2.433	1.798	1.018	0.715	0.493	0.459	0.339	0.292
315	3.014	2.457	1.862	1.044	0.729	0.499	0.466	0.344	0.297
320	3.043	2.481	1.926	1.070	0.743	0.506	0.473	0.349	0.301
325	3.072	2.504	1.990	1.097	0.758	0.513	0.480	0.354	0.306
330	3.101	2.528	2.053	1.123	0.772	0.520	0.487	0.358	0.311
335	3.130	2.552	2.117	1.149	0.786	0.530	0.494	0.363	0.316
340	3.158	2.576	2.181	1.175	0.801	0.546	0.501	0.368	0.320
345	3.187	2.599	2.245	1.201	0.815	0.562	0.508	0.373	0.325

Thickness is intumescent only. Table applies to beams with 3-sided protection and a concrete slab.

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FIRETEX FX1003 and FIRETEX FX2003

Table 4: I-Section Beams: 60 Minutes									
Section Factor up to m^{-1}	Thickness (mm) Required for a Design Temperature of								
	350°C	400°C	450°C	500°C	550°C	600°C	620°C	650°C	700°C
30	0.646	0.415	0.281	0.223	0.199	0.190	0.190	0.190	0.190
35	0.696	0.452	0.306	0.241	0.212	0.190	0.190	0.190	0.190
40	0.746	0.488	0.332	0.260	0.224	0.190	0.190	0.190	0.190
45	0.796	0.525	0.357	0.279	0.236	0.200	0.190	0.190	0.190
50	0.846	0.568	0.382	0.297	0.248	0.210	0.195	0.190	0.190
55	0.896	0.612	0.408	0.316	0.260	0.220	0.203	0.190	0.190
60	0.946	0.656	0.433	0.334	0.272	0.230	0.212	0.197	0.190
65	0.996	0.700	0.458	0.353	0.284	0.240	0.221	0.205	0.192
70	1.045	0.744	0.484	0.372	0.297	0.250	0.230	0.213	0.198
75	1.095	0.788	0.509	0.390	0.309	0.260	0.239	0.222	0.204
80	1.145	0.832	0.539	0.409	0.321	0.270	0.247	0.230	0.210
85	1.195	0.876	0.576	0.428	0.333	0.280	0.256	0.238	0.216
90	1.302	0.920	0.613	0.446	0.345	0.290	0.265	0.246	0.223
95	1.414	0.963	0.650	0.465	0.357	0.300	0.274	0.254	0.229
100	1.526	1.007	0.687	0.484	0.370	0.310	0.282	0.262	0.235
105	1.639	1.051	0.724	0.502	0.382	0.320	0.291	0.270	0.241
110	1.751	1.095	0.761	0.521	0.394	0.329	0.300	0.278	0.247
115	1.863	1.139	0.798	0.541	0.406	0.339	0.309	0.286	0.254
120	1.976	1.183	0.836	0.562	0.418	0.349	0.318	0.294	0.260
125	2.088	1.249	0.870	0.583	0.430	0.359	0.326	0.302	0.266
130	2.200	1.330	0.903	0.604	0.443	0.369	0.335	0.310	0.272
135	2.313	1.411	0.935	0.625	0.455	0.379	0.344	0.318	0.279
140	2.419	1.492	0.968	0.646	0.467	0.389	0.353	0.326	0.285
145	2.506	1.573	1.001	0.667	0.479	0.399	0.361	0.334	0.291
150	2.592	1.654	1.034	0.688	0.491	0.409	0.370	0.343	0.297
155	2.678	1.735	1.066	0.709	0.503	0.419	0.379	0.351	0.303
160	2.765	1.816	1.099	0.730	0.515	0.429	0.388	0.359	0.310
165	2.851	1.897	1.132	0.751	0.530	0.439	0.397	0.367	0.316
170	2.938	1.978	1.164	0.772	0.554	0.449	0.405	0.375	0.322
175	3.024	2.059	1.197	0.793	0.577	0.459	0.414	0.383	0.328
180	3.110	2.140	1.273	0.814	0.601	0.469	0.423	0.391	0.334
185	3.197	2.221	1.354	0.835	0.625	0.479	0.432	0.399	0.341
190	3.283	2.302	1.434	0.866	0.648	0.489	0.441	0.407	0.347
195	3.370	2.383	1.515	0.927	0.672	0.498	0.449	0.415	0.353
200	3.456	2.429	1.595	0.988	0.696	0.508	0.458	0.423	0.359
205	3.542	2.466	1.676	1.049	0.719	0.518	0.467	0.431	0.366
210	3.629	2.504	1.756	1.110	0.743	0.534	0.476	0.439	0.372
215	3.715	2.541	1.837	1.171	0.767	0.560	0.484	0.447	0.378
220		2.578	1.917	1.233	0.791	0.586	0.493	0.455	0.384
225		2.615	1.998	1.296	0.814	0.612	0.502	0.463	0.390
230		2.653	2.078	1.359	0.838	0.639	0.511	0.472	0.397
235		2.690	2.159	1.422	0.873	0.665	0.520	0.480	0.403
240		2.727	2.239	1.485	0.919	0.691	0.533	0.488	0.409
245		2.764	2.320	1.548	0.965	0.717	0.555	0.496	0.415
250		2.802	2.400	1.611	1.012	0.744	0.577	0.504	0.421
255		2.839	2.436	1.675	1.058	0.770	0.599	0.512	0.428
260		2.876	2.472	1.738	1.105	0.796	0.621	0.520	0.434
265		2.913	2.508	1.801	1.151	0.822	0.643	0.535	0.440
270		2.951	2.544	1.864	1.197	0.849	0.664	0.562	0.446
275		2.988	2.580	1.927	1.250	0.876	0.686	0.590	0.453
280		3.025	2.616	1.990	1.302	0.904	0.708	0.617	0.459
285		3.063	2.652	2.053	1.355	0.932	0.730	0.644	0.465
290		3.100	2.688	2.116	1.407	0.960	0.752	0.672	0.471
295		3.137	2.724	2.179	1.460	0.987	0.774	0.699	0.477
300		3.174	2.760	2.242	1.512	1.015	0.795	0.727	0.484
305		3.212	2.796	2.305	1.564	1.043	0.817	0.754	0.490
310		3.249	2.832	2.368	1.617	1.071	0.839	0.781	0.496
315		3.286	2.868	2.412	1.669	1.098	0.877	0.809	0.502
320		3.323	2.904	2.437	1.722	1.126	0.931	0.836	0.508
325		3.361	2.940	2.462	1.774	1.154	0.985	0.861	0.515
330		3.398	2.976	2.486	1.827	1.182	1.039	0.884	0.521
335		3.435	3.012	2.511	1.879	1.212	1.094	0.906	0.527
340		3.472	3.048	2.536	1.932	1.248	1.148	0.929	0.533
345		3.510	3.084	2.560	1.984	1.284	1.202	0.951	0.540

Thickness is intumescent only. Table applies to beams with 3-sided protection and a concrete slab.

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Table 5: I-Section Beams: 75 Minutes

Section Factor up to m^{-1}	Thickness (mm) Required for a Design Temperature of								
	350°C	400°C	450°C	500°C	550°C	600°C	620°C	650°C	700°C
30	1.007	0.677	0.455	0.345	0.235	0.216	0.210	0.200	0.191
35	1.055	0.754	0.500	0.363	0.253	0.229	0.223	0.210	0.199
40	1.104	0.830	0.543	0.380	0.271	0.243	0.235	0.221	0.208
45	1.152	0.907	0.581	0.398	0.289	0.257	0.247	0.232	0.217
50	1.200	0.984	0.620	0.415	0.307	0.271	0.260	0.242	0.225
55	1.380	1.060	0.659	0.433	0.324	0.284	0.272	0.253	0.234
60	1.560	1.137	0.697	0.450	0.342	0.298	0.285	0.264	0.243
65	1.740	1.215	0.736	0.468	0.360	0.312	0.297	0.275	0.251
70	1.920	1.297	0.775	0.485	0.378	0.325	0.310	0.285	0.260
75	2.100	1.379	0.813	0.503	0.396	0.339	0.322	0.296	0.269
80	2.280	1.462	0.852	0.520	0.414	0.353	0.335	0.307	0.278
85	2.448	1.544	0.891	0.558	0.432	0.366	0.347	0.317	0.286
90	2.592	1.626	0.929	0.603	0.450	0.380	0.360	0.328	0.295
95	2.736	1.709	0.968	0.647	0.467	0.394	0.372	0.339	0.304
100	2.880	1.791	1.007	0.692	0.485	0.408	0.385	0.350	0.312
105	3.024	1.873	1.045	0.737	0.503	0.421	0.397	0.360	0.321
110	3.168	1.956	1.084	0.782	0.521	0.435	0.410	0.371	0.330
115	3.312	2.038	1.123	0.826	0.549	0.449	0.422	0.382	0.338
120	3.456	2.120	1.161	0.880	0.580	0.462	0.435	0.393	0.347
125	3.600	2.203	1.200	0.944	0.610	0.476	0.447	0.403	0.356
130	3.744	2.285	1.319	1.008	0.641	0.490	0.460	0.414	0.365
135		2.367	1.438	1.073	0.672	0.503	0.472	0.425	0.373
140		2.438	1.557	1.137	0.703	0.517	0.484	0.435	0.382
145		2.501	1.676	1.201	0.734	0.540	0.497	0.446	0.391
150		2.563	1.795	1.289	0.764	0.576	0.509	0.457	0.399
155		2.626	1.914	1.378	0.795	0.611	0.522	0.468	0.408
160		2.689	2.033	1.466	0.826	0.647	0.548	0.478	0.417
165		2.752	2.152	1.554	0.862	0.682	0.580	0.489	0.425
170		2.815	2.271	1.642	0.916	0.718	0.611	0.500	0.434
175		2.877	2.390	1.730	0.970	0.753	0.642	0.510	0.443
180		2.940	2.443	1.818	1.025	0.788	0.673	0.521	0.452
185		3.003	2.490	1.906	1.079	0.824	0.704	0.543	0.460
190		3.066	2.537	1.995	1.134	0.861	0.736	0.572	0.469
195		3.128	2.584	2.083	1.188	0.900	0.767	0.601	0.478
200		3.191	2.631	2.171	1.352	0.940	0.798	0.630	0.486
205		3.254	2.678	2.259	1.546	0.980	0.829	0.659	0.495
210		3.317	2.725	2.347	1.740	1.020	0.862	0.688	0.504
215		3.380	2.772	2.414	1.934	1.060	0.899	0.717	0.512
220		3.442	2.819	2.449	2.128	1.100	0.935	0.746	0.521
225		3.505	2.866	2.484	2.322	1.140	0.971	0.774	0.538
230		3.568	2.913	2.519	2.416	1.180	1.008	0.803	0.560
235		3.631	2.960	2.554	2.442	1.226	1.044	0.832	0.583
240		3.693	3.007	2.589	2.469	1.280	1.081	0.864	0.605
245			3.054	2.624	2.495	1.333	1.117	0.901	0.628
250			3.101	2.659	2.521	1.386	1.153	0.938	0.651
255			3.148	2.694	2.548	1.440	1.190	0.974	0.673
260			3.195	2.729	2.574	1.493	1.243	1.011	0.696
265			3.242	2.764	2.600	1.547	1.302	1.048	0.718
270			3.289	2.799	2.627	1.600	1.362	1.085	0.741
275			3.336	2.834	2.653	1.654	1.421	1.121	0.764
280			3.383	2.868	2.680	1.707	1.481	1.158	0.786
285			3.430	2.903	2.706	1.761	1.541	1.195	0.809
290			3.477	2.938	2.732	1.814	1.600	1.252	0.831
295			3.524	2.973	2.759	1.867	1.660	1.313	0.856
300			3.572	3.008	2.785	1.921	1.719	1.373	0.891
305			3.619	3.043	2.811	1.974	1.779	1.434	0.925
310			3.666	3.078	2.838	2.028	1.838	1.495	0.960
315			3.713	3.113	2.864	2.081	1.898	1.555	0.994
320				3.148	2.890	2.135	1.958	1.616	1.029
325				3.183	2.917	2.188	2.017	1.677	1.063
330				3.218	2.943	2.242	2.077	1.737	1.098
335				3.253	2.970	2.295	2.136	1.798	1.132
340				3.288	2.996	2.348	2.196	1.859	1.167
345				3.323	3.022	2.402	2.255	1.919	1.201

Thickness is intumescent only. Table applies to beams with 3-sided protection and a concrete slab.

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Table 6: I-Section Beams: 90 Minutes									
Section Factor up to m^{-1}	Thickness (mm) Required for a Design Temperature of								
	350°C	400°C	450°C	500°C	550°C	600°C	620°C	650°C	700°C
30	1.004	1.004	0.704	0.485	0.389	0.308	0.245	0.231	0.217
35	1.906	1.114	0.757	0.536	0.403	0.326	0.262	0.247	0.230
40	2.475	1.215	0.810	0.588	0.417	0.344	0.280	0.263	0.243
45	2.640	1.285	0.863	0.640	0.431	0.361	0.297	0.280	0.256
50	2.805	1.355	0.915	0.692	0.446	0.379	0.314	0.296	0.269
55	2.970	1.424	0.968	0.744	0.460	0.397	0.331	0.312	0.281
60	3.135	1.494	1.021	0.796	0.474	0.415	0.349	0.328	0.294
65	3.300	1.564	1.074	0.847	0.488	0.433	0.366	0.345	0.307
70	3.465	1.633	1.127	0.899	0.502	0.451	0.383	0.361	0.320
75	3.631	1.703	1.180	0.951	0.516	0.468	0.400	0.377	0.333
80		1.773	1.261	1.003	0.545	0.486	0.418	0.393	0.346
85		1.842	1.361	1.055	0.597	0.504	0.435	0.410	0.359
90		1.912	1.461	1.107	0.649	0.522	0.452	0.426	0.372
95		1.982	1.561	1.158	0.701	0.550	0.469	0.442	0.385
100		2.052	1.661	1.218	0.753	0.580	0.487	0.458	0.398
105		2.121	1.761	1.311	0.805	0.610	0.504	0.475	0.411
110		2.191	1.861	1.403	0.857	0.640	0.521	0.491	0.424
115		2.261	1.961	1.496	0.910	0.670	0.552	0.507	0.436
120		2.330	2.060	1.588	0.962	0.700	0.586	0.523	0.449
125		2.400	2.160	1.680	1.014	0.730	0.620	0.553	0.462
130		2.701	2.260	1.773	1.066	0.760	0.654	0.585	0.475
135		3.002	2.360	1.865	1.118	0.790	0.688	0.616	0.488
140		3.303	2.438	1.958	1.170	0.820	0.722	0.647	0.501
145		3.604	2.500	2.050	1.239	0.851	0.756	0.678	0.514
150			2.563	2.142	1.331	0.908	0.790	0.710	0.529
155			2.626	2.235	1.423	0.966	0.825	0.741	0.557
160			2.689	2.327	1.514	1.023	0.860	0.772	0.584
165			2.752	2.412	1.606	1.080	0.898	0.804	0.612
170			2.814	2.468	1.697	1.138	0.937	0.835	0.639
175			2.877	2.525	1.789	1.195	0.976	0.875	0.667
180			2.940	2.581	1.881	1.262	1.014	0.924	0.694
185			3.003	2.638	1.972	1.331	1.053	0.973	0.722
190			3.066	2.694	2.064	1.399	1.091	1.021	0.749
195			3.128	2.751	2.156	1.468	1.130	1.070	0.777
200			3.191	2.807	2.247	1.536	1.169	1.119	0.804
205			3.254	2.863	2.339	1.604	1.211	1.168	0.832
210			3.317	2.920	2.416	1.673	1.272	1.219	0.864
215			3.380	2.976	2.464	1.741	1.332	1.277	0.906
220			3.442	3.033	2.512	1.810	1.393	1.334	0.948
225			3.505	3.089	2.560	1.878	1.454	1.392	0.990
230			3.568	3.146	2.608	1.946	1.514	1.450	1.032
235			3.631	3.202	2.656	2.015	1.575	1.507	1.074
240			3.693	3.258	2.704	2.083	1.636	1.565	1.116
245				3.315	2.752	2.152	1.696	1.622	1.158
250				3.371	2.800	2.220	1.757	1.680	1.200
255				3.428	2.848	2.288	1.818	1.738	1.236
260				3.484	2.896	2.357	1.878	1.795	1.272
265				3.541	2.944	2.424	1.939	1.853	1.308
270				3.597	2.992	2.487	1.999	1.910	1.344
275				3.653	3.040	2.551	2.060	1.968	1.380
280				3.710	3.088	2.615	2.121	2.026	1.416
285					3.136	2.679	2.181	2.083	1.452
290					3.184	2.743	2.242	2.141	1.488
295					3.232	2.807	2.303	2.198	1.524
300					3.280	2.870	2.363	2.256	1.560
305					3.328	2.934	2.435	2.314	1.596
310					3.376	2.998	2.524	2.371	1.632
315					3.424	3.062	2.613	2.425	1.668
320					3.472	3.126	2.702	2.474	1.704
325					3.520	3.190	2.792	2.523	1.740
330					3.568	3.253	2.881	2.572	1.776
335					3.616	3.317	2.970	2.621	1.812
340					3.664	3.381	3.059	2.670	1.848
345					3.712	3.445	3.148	2.719	1.884

Thickness is intumescent only. Table applies to beams with 3-sided protection and a concrete slab.

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Table 7: I-Section Beams: 105 Minutes

Section Factor up to m^{-1}	Thickness (mm) Required for a Design Temperature of								
	350°C	400°C	450°C	500°C	550°C	600°C	620°C	650°C	700°C
30	2.840	1.753	1.001	0.750	0.518	0.428	0.391	0.334	0.248
35	3.076	2.018	1.061	0.801	0.566	0.452	0.412	0.357	0.270
40	3.313	2.284	1.122	0.852	0.615	0.477	0.432	0.380	0.292
45	3.549	2.486	1.182	0.903	0.664	0.501	0.453	0.403	0.314
50		2.640	1.332	0.954	0.713	0.525	0.473	0.426	0.337
55		2.793	1.522	1.005	0.761	0.566	0.494	0.449	0.359
60		2.946	1.712	1.056	0.810	0.606	0.515	0.472	0.381
65		3.100	1.902	1.107	0.859	0.647	0.545	0.495	0.403
70		3.253	2.092	1.158	0.908	0.687	0.586	0.518	0.425
75		3.407	2.281	1.225	0.956	0.728	0.627	0.544	0.447
80		3.560	2.435	1.358	1.005	0.768	0.668	0.571	0.469
85		3.714	2.527	1.492	1.054	0.809	0.709	0.598	0.491
90			2.620	1.625	1.103	0.849	0.750	0.625	0.514
95			2.713	1.758	1.151	0.890	0.791	0.652	0.537
100			2.806	1.892	1.200	0.930	0.832	0.679	0.561
105			2.898	2.025	1.302	0.971	0.873	0.706	0.586
110			2.991	2.159	1.404	1.011	0.914	0.733	0.611
115			3.084	2.292	1.506	1.052	0.955	0.760	0.635
120			3.176	2.416	1.609	1.092	0.996	0.787	0.660
125			3.269	2.498	1.711	1.133	1.037	0.814	0.684
130			3.362	2.579	1.813	1.173	1.078	0.841	0.709
135			3.454	2.661	1.915	1.232	1.119	0.894	0.733
140			3.547	2.743	2.017	1.328	1.160	0.959	0.758
145			3.640	2.825	2.119	1.423	1.201	1.023	0.783
150			3.732	2.907	2.222	1.519	1.274	1.087	0.807
155				2.989	2.324	1.614	1.347	1.152	0.832
160				3.071	2.419	1.710	1.420	1.218	0.865
165				3.153	2.495	1.806	1.493	1.288	0.923
170				3.235	2.570	1.901	1.565	1.359	0.982
175				3.317	2.646	1.997	1.638	1.429	1.040
180				3.398	2.722	2.093	1.711	1.500	1.099
185				3.480	2.797	2.188	1.784	1.570	1.157
190				3.562	2.873	2.284	1.857	1.641	1.213
195				3.644	2.948	2.379	1.930	1.711	1.261
200				3.726	3.024	2.444	2.003	1.781	1.310
205					3.100	2.500	2.075	1.852	1.358
210					3.175	2.556	2.148	1.922	1.407
215					3.251	2.612	2.221	1.993	1.455
220					3.326	2.668	2.294	2.063	1.504
225					3.402	2.725	2.367	2.134	1.552
230					3.478	2.781	2.438	2.204	1.600
235					3.553	2.837	2.509	2.275	1.649
240					3.629	2.893	2.579	2.345	1.697
245					3.704	2.949	2.650	2.415	1.746
250						3.005	2.720	2.482	1.794
255						3.061	2.790	2.549	1.843
260						3.117	2.861	2.616	1.891
265						3.173	2.931	2.683	1.940
270						3.229	3.002	2.750	1.988
275						3.286	3.072	2.817	2.037
280						3.342	3.142	2.884	2.085
285						3.398	3.213	2.951	2.133
290						3.454	3.283	3.019	2.182
295						3.510	3.354	3.086	2.230
300						3.566	3.424	3.153	2.279
305						3.622	3.494	3.220	2.327
310						3.678	3.565	3.287	2.376
315						3.734	3.635	3.354	2.425
320							3.706	3.421	2.474
325								3.488	2.523
330								3.555	2.572
335								3.622	2.621
340								3.689	2.670
345									2.719

Thickness is intumescent only. Table applies to beams with 3-sided protection and a concrete slab.

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FIRETEX FX1003 and FIRETEX FX2003

Table 8: I-Section Beams: 120 Minutes

Section Factor up to m^{-1}	Thickness (mm) Required for a Design Temperature of								
	350°C	400°C	450°C	500°C	550°C	600°C	620°C	650°C	700°C
30	3.440	2.663	1.255	1.031	0.814	0.539	0.492	0.449	0.370
35	3.727	2.883	1.725	1.123	0.873	0.586	0.542	0.484	0.398
40		3.103	2.194	1.226	0.933	0.633	0.591	0.519	0.426
45		3.323	2.458	1.390	0.992	0.680	0.641	0.560	0.455
50		3.544	2.562	1.554	1.052	0.728	0.691	0.601	0.483
55			2.666	1.718	1.111	0.775	0.741	0.643	0.511
60			2.770	1.883	1.170	0.822	0.791	0.685	0.538
65			2.873	2.047	1.253	0.869	0.841	0.726	0.564
70			2.977	2.211	1.359	0.917	0.891	0.768	0.590
75			3.081	2.375	1.465	0.964	0.941	0.809	0.615
80			3.185	2.497	1.571	1.011	0.990	0.851	0.641
85			3.289	2.611	1.677	1.058	1.040	0.893	0.667
90			3.392	2.726	1.784	1.106	1.090	0.934	0.693
95			3.496	2.840	1.890	1.153	1.140	0.976	0.719
100			3.600	2.955	1.996	1.200	1.190	1.017	0.744
105			3.704	3.069	2.102	1.290	1.270	1.059	0.770
110				3.183	2.208	1.380	1.358	1.101	0.796
115				3.298	2.314	1.470	1.445	1.142	0.822
120				3.412	2.420	1.560	1.533	1.184	0.848
125				3.527	2.527	1.650	1.620	1.268	0.921
130				3.641	2.633	1.740	1.708	1.381	0.999
135					2.739	1.830	1.796	1.493	1.077
140					2.846	1.920	1.883	1.605	1.155
145					2.952	2.010	1.971	1.717	1.229
150					3.059	2.100	2.058	1.829	1.296
155					3.165	2.190	2.146	1.941	1.362
160					3.271	2.280	2.234	2.054	1.429
165					3.378	2.370	2.321	2.166	1.496
170					3.484	2.461	2.408	2.278	1.563
175					3.591	2.552	2.482	2.390	1.630
180					3.697	2.643	2.557	2.462	1.697
185						2.734	2.631	2.531	1.764
190						2.825	2.706	2.599	1.831
195						2.916	2.780	2.668	1.898
200						3.007	2.855	2.736	1.964
205						3.098	2.929	2.804	2.031
210						3.189	3.004	2.873	2.098
215						3.280	3.078	2.941	2.165
220						3.371	3.153	3.010	2.232
225						3.462	3.227	3.078	2.299
230						3.553	3.302	3.146	2.366
235						3.644	3.376	3.215	2.429
240						3.736	3.451	3.283	2.489
245							3.525	3.352	2.548
250							3.600	3.420	2.608
255							3.675	3.488	2.667
260							3.749	3.557	2.727
265								3.625	2.786
270								3.694	2.846
275									2.905
280									2.965
285									3.024
290									3.084
295									3.144
300									3.203
305									3.263
310									3.322
315									3.382
320									3.441
325									3.501
330									3.560
335									3.620
340									3.679
345									3.739

Thickness is intumescent only. Table applies to beams with 3-sided protection and a concrete slab.

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Table 9: I-Section Columns: 15 Minutes

Section Factor up to m^{-1}	Thickness (mm) Required for a Design Temperature of							
	350°C	400°C	450°C	500°C	550°C	600°C	650°C	700°C
30	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
35	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
40	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
45	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
50	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
55	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
60	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
65	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
70	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
75	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
80	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
85	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
90	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
95	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
100	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
105	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
110	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
115	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
120	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
125	0.201	0.200	0.200	0.200	0.200	0.200	0.200	0.200
130	0.203	0.200	0.200	0.200	0.200	0.200	0.200	0.200
135	0.205	0.200	0.200	0.200	0.200	0.200	0.200	0.200
140	0.208	0.200	0.200	0.200	0.200	0.200	0.200	0.200
145	0.210	0.200	0.200	0.200	0.200	0.200	0.200	0.200
150	0.213	0.200	0.200	0.200	0.200	0.200	0.200	0.200
155	0.215	0.200	0.200	0.200	0.200	0.200	0.200	0.200
160	0.218	0.200	0.200	0.200	0.200	0.200	0.200	0.200
165	0.220	0.200	0.200	0.200	0.200	0.200	0.200	0.200
170	0.223	0.200	0.200	0.200	0.200	0.200	0.200	0.200
175	0.225	0.200	0.200	0.200	0.200	0.200	0.200	0.200
180	0.227	0.200	0.200	0.200	0.200	0.200	0.200	0.200
185	0.230	0.200	0.200	0.200	0.200	0.200	0.200	0.200
190	0.232	0.200	0.200	0.200	0.200	0.200	0.200	0.200
195	0.235	0.200	0.200	0.200	0.200	0.200	0.200	0.200
200	0.237	0.200	0.200	0.200	0.200	0.200	0.200	0.200
205	0.240	0.200	0.200	0.200	0.200	0.200	0.200	0.200
210	0.242	0.200	0.200	0.200	0.200	0.200	0.200	0.200
215	0.245	0.200	0.200	0.200	0.200	0.200	0.200	0.200
220	0.247	0.200	0.200	0.200	0.200	0.200	0.200	0.200
225	0.249	0.200	0.200	0.200	0.200	0.200	0.200	0.200
230	0.252	0.200	0.200	0.200	0.200	0.200	0.200	0.200
235	0.254	0.200	0.200	0.200	0.200	0.200	0.200	0.200
240	0.257	0.200	0.200	0.200	0.200	0.200	0.200	0.200
245	0.259	0.200	0.200	0.200	0.200	0.200	0.200	0.200
250	0.262	0.200	0.200	0.200	0.200	0.200	0.200	0.200
255	0.264	0.200	0.200	0.200	0.200	0.200	0.200	0.200
260	0.267	0.200	0.200	0.200	0.200	0.200	0.200	0.200
265	0.269	0.200	0.200	0.200	0.200	0.200	0.200	0.200
270	0.271	0.200	0.200	0.200	0.200	0.200	0.200	0.200
275	0.274	0.200	0.200	0.200	0.200	0.200	0.200	0.200
280	0.276	0.200	0.200	0.200	0.200	0.200	0.200	0.200
285	0.279	0.200	0.200	0.200	0.200	0.200	0.200	0.200
290	0.281	0.200	0.200	0.200	0.200	0.200	0.200	0.200
295	0.284	0.203	0.200	0.200	0.200	0.200	0.200	0.200
300	0.286	0.206	0.200	0.200	0.200	0.200	0.200	0.200
305	0.288	0.209	0.200	0.200	0.200	0.200	0.200	0.200
310	0.291	0.212	0.200	0.200	0.200	0.200	0.200	0.200
315	0.293	0.215	0.200	0.200	0.200	0.200	0.200	0.200
320	0.296	0.218	0.200	0.200	0.200	0.200	0.200	0.200
325	0.298	0.220	0.200	0.200	0.200	0.200	0.200	0.200
330	0.301	0.223	0.200	0.200	0.200	0.200	0.200	0.200
335	0.303	0.226	0.200	0.200	0.200	0.200	0.200	0.200
340	0.306	0.229	0.200	0.200	0.200	0.200	0.200	0.200
345	0.308	0.232	0.200	0.200	0.200	0.200	0.200	0.200
350	0.310	0.235	0.200	0.200	0.200	0.200	0.200	0.200
355	0.313	0.238	0.200	0.200	0.200	0.200	0.200	0.200
360	0.315	0.240	0.200	0.200	0.200	0.200	0.200	0.200
365	0.318	0.243	0.200	0.200	0.200	0.200	0.200	0.200
370	0.320	0.246	0.200	0.200	0.200	0.200	0.200	0.200
375	0.323	0.249	0.200	0.200	0.200	0.200	0.200	0.200
380	0.325	0.252	0.200	0.200	0.200	0.200	0.200	0.200
385	0.328	0.255	0.200	0.200	0.200	0.200	0.200	0.200

Thickness is intumescent only. Table applies to columns with 4-sided protection. Table also applies to beams with 4-sided protection up to a maximum protection thickness of 3.750mm.

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Table 10: I-Section Columns: 30 Minutes								
Section Factor up to m^{-1}	Thickness (mm) Required for a Design Temperature of							
	350°C	400°C	450°C	500°C	550°C	600°C	650°C	700°C
30	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
35	0.215	0.200	0.200	0.200	0.200	0.200	0.200	0.200
40	0.237	0.200	0.200	0.200	0.200	0.200	0.200	0.200
45	0.259	0.206	0.200	0.200	0.200	0.200	0.200	0.200
50	0.281	0.216	0.200	0.200	0.200	0.200	0.200	0.200
55	0.303	0.225	0.200	0.200	0.200	0.200	0.200	0.200
60	0.325	0.235	0.205	0.200	0.200	0.200	0.200	0.200
65	0.347	0.244	0.211	0.200	0.200	0.200	0.200	0.200
70	0.369	0.253	0.217	0.200	0.200	0.200	0.200	0.200
75	0.391	0.263	0.223	0.200	0.200	0.200	0.200	0.200
80	0.413	0.272	0.229	0.200	0.200	0.200	0.200	0.200
85	0.435	0.282	0.234	0.200	0.200	0.200	0.200	0.200
90	0.458	0.291	0.240	0.200	0.200	0.200	0.200	0.200
95	0.480	0.301	0.246	0.200	0.200	0.200	0.200	0.200
100	0.502	0.310	0.252	0.200	0.200	0.200	0.200	0.200
105	0.524	0.319	0.258	0.202	0.200	0.200	0.200	0.200
110	0.546	0.329	0.264	0.206	0.200	0.200	0.200	0.200
115	0.568	0.338	0.269	0.210	0.200	0.200	0.200	0.200
120	0.590	0.348	0.275	0.214	0.200	0.200	0.200	0.200
125	0.612	0.357	0.281	0.218	0.204	0.200	0.200	0.200
130	0.634	0.367	0.287	0.222	0.209	0.200	0.200	0.200
135	0.656	0.376	0.293	0.226	0.213	0.200	0.200	0.200
140	0.678	0.385	0.299	0.231	0.217	0.200	0.200	0.200
145	0.700	0.395	0.305	0.235	0.221	0.200	0.200	0.200
150	0.722	0.404	0.310	0.239	0.226	0.200	0.200	0.200
155	0.744	0.414	0.316	0.243	0.230	0.200	0.200	0.200
160	0.766	0.423	0.322	0.247	0.234	0.200	0.200	0.200
165	0.787	0.433	0.328	0.251	0.238	0.200	0.200	0.200
170	0.808	0.442	0.334	0.255	0.243	0.200	0.200	0.200
175	0.830	0.451	0.340	0.259	0.247	0.200	0.200	0.200
180	0.851	0.461	0.345	0.264	0.251	0.200	0.200	0.200
185	0.872	0.470	0.351	0.268	0.255	0.200	0.200	0.200
190	0.893	0.480	0.357	0.272	0.260	0.200	0.200	0.200
195	0.914	0.489	0.363	0.276	0.264	0.200	0.200	0.200
200	0.936	0.499	0.369	0.280	0.268	0.200	0.200	0.200
205	0.957	0.508	0.375	0.284	0.272	0.200	0.200	0.200
210	0.978	0.517	0.380	0.288	0.276	0.201	0.200	0.200
215	0.999	0.527	0.386	0.292	0.281	0.203	0.200	0.200
220	1.021	0.536	0.392	0.297	0.285	0.206	0.200	0.200
225	1.042	0.546	0.398	0.301	0.289	0.208	0.200	0.200
230	1.063	0.555	0.404	0.305	0.293	0.210	0.200	0.200
235	1.084	0.565	0.410	0.309	0.298	0.212	0.200	0.200
240	1.105	0.574	0.416	0.313	0.302	0.215	0.200	0.200
245	1.127	0.583	0.421	0.317	0.306	0.217	0.200	0.200
250	1.148	0.593	0.427	0.321	0.310	0.219	0.200	0.200
255	1.169	0.602	0.433	0.325	0.315	0.221	0.200	0.200
260	1.192	0.612	0.439	0.330	0.319	0.224	0.200	0.200
265	1.215	0.621	0.445	0.334	0.323	0.226	0.200	0.200
270	1.238	0.631	0.451	0.338	0.327	0.228	0.200	0.200
275	1.261	0.640	0.456	0.342	0.331	0.230	0.202	0.200
280	1.284	0.649	0.462	0.346	0.336	0.233	0.204	0.200
285	1.307	0.659	0.468	0.350	0.340	0.235	0.206	0.200
290	1.330	0.668	0.474	0.354	0.344	0.237	0.208	0.200
295	1.353	0.678	0.480	0.358	0.348	0.239	0.210	0.200
300	1.376	0.687	0.486	0.363	0.353	0.242	0.212	0.200
305	1.399	0.697	0.491	0.367	0.357	0.244	0.214	0.200
310	1.422	0.706	0.497	0.371	0.361	0.246	0.216	0.200
315	1.445	0.715	0.503	0.375	0.365	0.248	0.218	0.200
320	1.468	0.725	0.509	0.379	0.370	0.251	0.220	0.200
325	1.491	0.734	0.515	0.383	0.374	0.253	0.222	0.200
330	1.514	0.744	0.521	0.387	0.378	0.255	0.224	0.200
335	1.537	0.754	0.526	0.391	0.382	0.257	0.226	0.200
340	1.560	0.767	0.532	0.396	0.387	0.260	0.228	0.200
345	1.583	0.780	0.538	0.400	0.391	0.262	0.230	0.200
350	1.606	0.793	0.544	0.404	0.395	0.264	0.232	0.200
355	1.629	0.805	0.550	0.408	0.399	0.266	0.234	0.200
360	1.652	0.818	0.556	0.412	0.403	0.269	0.236	0.200
365	1.675	0.831	0.562	0.416	0.408	0.271	0.237	0.202
370	1.698	0.844	0.567	0.420	0.412	0.273	0.239	0.203
375	1.721	0.856	0.573	0.425	0.416	0.275	0.241	0.205
380	1.744	0.869	0.579	0.429	0.420	0.278	0.243	0.207
385	1.767	0.882	0.585	0.433	0.425	0.280	0.245	0.208

Thickness is intumescent only. Table applies to columns with 4-sided protection. Table also applies to beams with 4-sided protection up to a maximum protection thickness of 3.750mm

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FIRETEX FX1003 and FIRETEX FX2003

Table 11: I-Section Columns: 45 Minutes								
Section Factor up to m^{-1}	Thickness (mm) Required for a Design Temperature of							
	350°C	400°C	450°C	500°C	550°C	600°C	650°C	700°C
30	0.434	0.258	0.207	0.200	0.200	0.200	0.200	0.200
35	0.504	0.289	0.223	0.200	0.200	0.200	0.200	0.200
40	0.574	0.321	0.239	0.204	0.200	0.200	0.200	0.200
45	0.643	0.352	0.255	0.215	0.200	0.200	0.200	0.200
50	0.713	0.383	0.271	0.225	0.200	0.200	0.200	0.200
55	0.776	0.414	0.287	0.235	0.200	0.200	0.200	0.200
60	0.832	0.446	0.303	0.246	0.200	0.200	0.200	0.200
65	0.887	0.477	0.319	0.256	0.203	0.200	0.200	0.200
70	0.943	0.508	0.335	0.266	0.210	0.203	0.200	0.200
75	0.998	0.539	0.351	0.277	0.218	0.208	0.200	0.200
80	1.054	0.571	0.367	0.287	0.225	0.213	0.200	0.200
85	1.109	0.602	0.383	0.298	0.232	0.219	0.200	0.200
90	1.165	0.633	0.398	0.308	0.240	0.224	0.200	0.200
95	1.204	0.664	0.414	0.318	0.247	0.229	0.200	0.200
100	1.240	0.696	0.430	0.329	0.255	0.235	0.201	0.200
105	1.276	0.727	0.446	0.339	0.262	0.240	0.206	0.200
110	1.312	0.756	0.462	0.349	0.269	0.245	0.210	0.200
115	1.348	0.777	0.478	0.360	0.277	0.250	0.215	0.200
120	1.384	0.798	0.494	0.370	0.284	0.256	0.219	0.200
125	1.420	0.820	0.510	0.381	0.292	0.261	0.224	0.200
130	1.456	0.841	0.526	0.391	0.299	0.266	0.228	0.200
135	1.492	0.862	0.542	0.401	0.306	0.272	0.233	0.200
140	1.528	0.884	0.558	0.412	0.314	0.277	0.237	0.200
145	1.564	0.905	0.574	0.422	0.321	0.282	0.241	0.203
150	1.600	0.926	0.590	0.432	0.329	0.287	0.246	0.207
155	1.636	0.948	0.606	0.443	0.336	0.293	0.250	0.210
160	1.672	0.969	0.622	0.453	0.343	0.298	0.255	0.214
165	1.710	0.990	0.638	0.464	0.351	0.303	0.259	0.218
170	1.757	1.011	0.654	0.474	0.358	0.308	0.264	0.221
175	1.804	1.033	0.670	0.484	0.366	0.314	0.268	0.225
180	1.852	1.054	0.686	0.495	0.373	0.319	0.273	0.228
185	1.899	1.075	0.702	0.505	0.380	0.324	0.277	0.232
190	1.946	1.097	0.718	0.515	0.388	0.330	0.282	0.235
195	1.993	1.118	0.734	0.526	0.395	0.335	0.286	0.239
200	2.041	1.139	0.750	0.536	0.403	0.340	0.291	0.243
205	2.088	1.161	0.766	0.547	0.410	0.345	0.295	0.246
210	2.135	1.184	0.782	0.557	0.417	0.351	0.300	0.250
215	2.182	1.212	0.798	0.567	0.425	0.356	0.304	0.253
220	2.229	1.240	0.814	0.578	0.432	0.361	0.308	0.257
225	2.277	1.267	0.830	0.588	0.440	0.367	0.313	0.260
230	2.324	1.295	0.846	0.598	0.447	0.372	0.317	0.264
235	2.371	1.323	0.862	0.609	0.454	0.377	0.322	0.268
240	2.418	1.351	0.878	0.619	0.462	0.382	0.326	0.271
245	2.466	1.378	0.893	0.630	0.469	0.388	0.331	0.275
250	2.513	1.406	0.909	0.640	0.477	0.393	0.335	0.278
255	2.560	1.434	0.925	0.650	0.484	0.398	0.340	0.282
260	2.607	1.461	0.941	0.661	0.491	0.404	0.344	0.286
265	2.654	1.489	0.957	0.671	0.499	0.409	0.349	0.289
270	2.702	1.517	0.973	0.681	0.506	0.414	0.353	0.293
275	2.749	1.545	0.989	0.692	0.514	0.419	0.358	0.296
280	2.796	1.572	1.005	0.702	0.521	0.425	0.362	0.300
285	2.843	1.600	1.021	0.713	0.528	0.430	0.367	0.303
290	2.893	1.628	1.037	0.723	0.536	0.435	0.371	0.307
295	2.943	1.655	1.053	0.733	0.543	0.440	0.375	0.311
300	2.994	1.683	1.069	0.744	0.551	0.446	0.380	0.314
305	3.044	1.712	1.085	0.760	0.558	0.451	0.384	0.318
310	3.094	1.741	1.101	0.786	0.565	0.456	0.389	0.321
315	3.145	1.770	1.117	0.812	0.573	0.462	0.393	0.325
320	3.195	1.799	1.133	0.838	0.580	0.467	0.398	0.328
325	3.245	1.828	1.148	0.864	0.588	0.472	0.402	0.332
330	3.296	1.857	1.164	0.890	0.595	0.477	0.407	0.336
335	3.346	1.887	1.182	0.917	0.602	0.483	0.411	0.339
340	3.396	1.916	1.204	0.943	0.610	0.488	0.416	0.343
345	3.447	1.945	1.226	0.969	0.617	0.493	0.420	0.346
350	3.497	1.974	1.247	0.995	0.625	0.499	0.425	0.350
355	3.547	2.003	1.269	1.021	0.632	0.504	0.429	0.353
360	3.598	2.033	1.291	1.047	0.639	0.509	0.434	0.357
365	3.648	2.062	1.312	1.073	0.647	0.514	0.438	0.361
370	3.698	2.091	1.334	1.099	0.654	0.520	0.442	0.364
375	3.748	2.120	1.355	1.125	0.662	0.525	0.447	0.368
380	3.799	2.149	1.377	1.151	0.669	0.530	0.451	0.371
385	3.849	2.179	1.399	1.177	0.676	0.535	0.456	0.375

Thickness is intumescent only. Table applies to columns with 4-sided protection. Table also applies to beams with 4-sided protection up to a maximum protection thickness of 3.750mm.

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Table 12: I-Section Columns: 60 Minutes								
Section Factor up to m^{-1}	Thickness (mm) Required for a Design Temperature of							
	350°C	400°C	450°C	500°C	550°C	600°C	650°C	700°C
30	0.725	0.504	0.348	0.225	0.200	0.200	0.200	0.200
35	0.827	0.569	0.391	0.252	0.202	0.200	0.200	0.200
40	0.929	0.635	0.434	0.280	0.215	0.202	0.200	0.200
45	1.031	0.700	0.477	0.308	0.228	0.213	0.200	0.200
50	1.133	0.762	0.519	0.335	0.241	0.225	0.200	0.200
55	1.224	0.813	0.562	0.363	0.253	0.237	0.205	0.200
60	1.308	0.863	0.605	0.391	0.266	0.248	0.213	0.200
65	1.392	0.914	0.648	0.418	0.279	0.260	0.222	0.200
70	1.476	0.964	0.691	0.446	0.292	0.271	0.231	0.202
75	1.560	1.015	0.734	0.474	0.304	0.283	0.239	0.209
80	1.644	1.065	0.764	0.501	0.317	0.294	0.248	0.216
85	1.723	1.115	0.787	0.529	0.330	0.306	0.257	0.222
90	1.792	1.166	0.810	0.557	0.343	0.317	0.265	0.229
95	1.861	1.213	0.833	0.584	0.355	0.329	0.274	0.236
100	1.930	1.260	0.856	0.612	0.368	0.340	0.283	0.243
105	1.999	1.307	0.879	0.639	0.381	0.352	0.291	0.249
110	2.068	1.354	0.902	0.667	0.393	0.363	0.300	0.256
115	2.137	1.400	0.925	0.695	0.406	0.375	0.309	0.263
120	2.206	1.447	0.948	0.722	0.419	0.386	0.317	0.270
125	2.275	1.494	0.971	0.750	0.432	0.398	0.326	0.276
130	2.344	1.541	0.994	0.763	0.444	0.409	0.334	0.283
135	2.413	1.587	1.017	0.775	0.457	0.421	0.343	0.290
140	2.482	1.634	1.040	0.788	0.470	0.432	0.352	0.297
145	2.551	1.681	1.063	0.800	0.483	0.444	0.360	0.303
150	2.620	1.726	1.086	0.813	0.495	0.455	0.369	0.310
155	2.689	1.770	1.108	0.825	0.508	0.467	0.378	0.317
160	2.758	1.814	1.131	0.838	0.521	0.479	0.386	0.324
165	2.827	1.858	1.154	0.851	0.534	0.490	0.395	0.330
170	2.904	1.902	1.179	0.863	0.546	0.502	0.404	0.337
175	2.984	1.946	1.221	0.876	0.559	0.513	0.412	0.344
180	3.065	1.990	1.262	0.888	0.572	0.525	0.421	0.350
185	3.145	2.034	1.304	0.901	0.584	0.536	0.430	0.357
190	3.226	2.078	1.346	0.913	0.597	0.548	0.438	0.364
195	3.306	2.122	1.387	0.926	0.610	0.559	0.447	0.371
200	3.387	2.166	1.429	0.938	0.623	0.571	0.455	0.377
205	3.467	2.210	1.471	0.951	0.635	0.582	0.464	0.384
210	3.548	2.254	1.512	0.964	0.648	0.594	0.473	0.391
215	3.628	2.298	1.554	0.976	0.661	0.605	0.481	0.398
220	3.709	2.342	1.595	0.989	0.674	0.617	0.490	0.404
225	3.789	2.386	1.637	1.001	0.686	0.628	0.499	0.411
230	3.870	2.430	1.679	1.014	0.699	0.640	0.507	0.418
235	3.950	2.474	1.718	1.026	0.712	0.651	0.516	0.425
240	4.005	2.518	1.756	1.039	0.725	0.663	0.525	0.431
245	4.018	2.562	1.794	1.052	0.737	0.674	0.533	0.438
250	4.031	2.606	1.832	1.064	0.750	0.686	0.542	0.445
255	4.044	2.650	1.870	1.077	0.776	0.698	0.551	0.452
260	4.057	2.694	1.908	1.089	0.801	0.709	0.559	0.458
265	4.070	2.738	1.945	1.102	0.827	0.721	0.568	0.465
270	4.083	2.782	1.983	1.114	0.852	0.732	0.576	0.472
275	4.095	2.826	2.021	1.127	0.878	0.744	0.585	0.479
280	4.108	2.871	2.059	1.140	0.903	0.756	0.594	0.485
285	4.121	2.918	2.097	1.152	0.929	0.770	0.602	0.492
290	4.134	2.965	2.134	1.165	0.954	0.783	0.611	0.499
295	4.147	3.012	2.172	1.184	0.980	0.797	0.620	0.506
300	4.160	3.059	2.210	1.236	1.005	0.810	0.628	0.512
305	4.173	3.106	2.248	1.288	1.031	0.824	0.637	0.519
310	4.186	3.153	2.286	1.339	1.056	0.837	0.646	0.526
315	4.199	3.200	2.324	1.391	1.082	0.851	0.654	0.533
320	4.212	3.247	2.361	1.443	1.107	0.864	0.663	0.539
325	4.225	3.294	2.399	1.495	1.133	0.878	0.672	0.546
330	4.238	3.341	2.437	1.546	1.158	0.891	0.680	0.553
335	4.251	3.388	2.475	1.598	1.184	0.905	0.689	0.560
340	4.264	3.435	2.513	1.650	1.210	0.918	0.698	0.566
345	4.277	3.483	2.550	1.701	1.235	0.932	0.706	0.573
350	4.289	3.530	2.588	1.724	1.261	0.946	0.715	0.580
355	4.302	3.577	2.626	1.748	1.287	0.959	0.723	0.587
360	4.315	3.624	2.664	1.772	1.313	0.973	0.732	0.593
365	4.328	3.671	2.702	1.795	1.339	0.986	0.741	0.600
370	4.341	3.718	2.739	1.819	1.365	1.000	0.749	0.607
375	4.354	3.765	2.777	1.843	1.391	1.013	0.758	0.614
380	4.367	3.812	2.815	1.866	1.417	1.027	0.767	0.620
385	4.380	3.859	2.853	1.890	1.442	1.040	0.775	0.627

Thickness is intumescent only. Table applies to columns with 4-sided protection. Table also applies to beams with 4-sided protection up to a maximum protection thickness of 3.750mm.

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Table 13: I-Section Columns: 75 Minutes								
Section Factor up to m^{-1}	Thickness (mm) Required for a Design Temperature of							
	350°C	400°C	450°C	500°C	550°C	600°C	650°C	700°C
30	1.004	0.750	0.566	0.423	0.308	0.225	0.200	0.200
35	1.154	0.833	0.639	0.472	0.344	0.250	0.208	0.200
40	1.364	0.916	0.713	0.520	0.381	0.276	0.225	0.200
45	1.585	0.999	0.772	0.569	0.417	0.301	0.242	0.210
50	1.745	1.083	0.815	0.617	0.453	0.327	0.259	0.224
55	1.839	1.166	0.859	0.666	0.489	0.352	0.275	0.237
60	1.933	1.266	0.903	0.714	0.526	0.377	0.292	0.251
65	2.027	1.368	0.947	0.757	0.562	0.403	0.309	0.264
70	2.121	1.470	0.991	0.784	0.598	0.428	0.326	0.278
75	2.216	1.572	1.035	0.811	0.635	0.454	0.343	0.291
80	2.310	1.673	1.079	0.838	0.671	0.479	0.360	0.305
85	2.404	1.753	1.123	0.864	0.707	0.504	0.376	0.319
90	2.498	1.825	1.167	0.891	0.743	0.530	0.393	0.332
95	2.592	1.897	1.233	0.918	0.765	0.555	0.410	0.346
100	2.686	1.969	1.303	0.945	0.784	0.581	0.427	0.359
105	2.780	2.041	1.373	0.972	0.803	0.606	0.444	0.373
110	2.889	2.113	1.444	0.999	0.822	0.631	0.460	0.387
115	3.039	2.184	1.514	1.025	0.840	0.657	0.477	0.400
120	3.189	2.256	1.585	1.052	0.859	0.682	0.494	0.414
125	3.339	2.328	1.655	1.079	0.878	0.708	0.511	0.427
130	3.489	2.400	1.720	1.106	0.897	0.733	0.528	0.441
135	3.639	2.472	1.775	1.133	0.916	0.754	0.545	0.454
140	3.788	2.544	1.830	1.160	0.934	0.768	0.561	0.468
145	3.938	2.616	1.885	1.277	0.953	0.781	0.578	0.482
150	4.013	2.688	1.940	1.516	0.972	0.794	0.595	0.495
155	4.035	2.760	1.995	1.707	0.991	0.807	0.612	0.509
160	4.058	2.831	2.050	1.740	1.009	0.820	0.629	0.522
165	4.080	2.895	2.105	1.772	1.028	0.834	0.645	0.536
170	4.103	2.955	2.161	1.804	1.047	0.847	0.662	0.549
175	4.125	3.016	2.216	1.836	1.066	0.860	0.679	0.563
180	4.147	3.076	2.271	1.868	1.085	0.873	0.696	0.577
185	4.170	3.137	2.326	1.900	1.103	0.887	0.713	0.590
190	4.192	3.197	2.381	1.932	1.122	0.900	0.730	0.604
195	4.214	3.258	2.436	1.964	1.141	0.913	0.746	0.617
200	4.237	3.318	2.491	1.996	1.160	0.926	0.761	0.631
205	4.259	3.378	2.546	2.028	1.186	0.939	0.775	0.644
210	4.281	3.439	2.601	2.060	1.243	0.953	0.790	0.658
215	4.304	3.499	2.657	2.093	1.300	0.966	0.804	0.672
220	4.326	3.560	2.712	2.125	1.357	0.979	0.818	0.685
225	4.348	3.620	2.767	2.157	1.414	0.992	0.833	0.699
230	4.371	3.681	2.822	2.189	1.471	1.006	0.847	0.712
235	4.393	3.741	2.873	2.221	1.529	1.019	0.861	0.726
240	4.415	3.802	2.919	2.253	1.586	1.032	0.875	0.739
245	4.438	3.862	2.965	2.285	1.643	1.045	0.890	0.753
250	4.460	3.923	3.011	2.317	1.700	1.058	0.904	0.767
255	4.482	3.983	3.057	2.349	1.754	1.072	0.918	0.780
260	4.505	4.018	3.103	2.381	1.807	1.085	0.933	0.794
265	4.527	4.044	3.149	2.414	1.861	1.098	0.947	0.807
270	4.549	4.069	3.196	2.446	1.915	1.111	0.961	0.821
275	4.572	4.095	3.242	2.478	1.969	1.124	0.975	0.835
280	4.594	4.120	3.288	2.510	2.022	1.138	0.990	0.848
285	4.616	4.146	3.334	2.542	2.076	1.151	1.004	0.862
290	4.639	4.171	3.380	2.574	2.130	1.164	1.018	0.876
295	4.661	4.197	3.426	2.606	2.184	1.184	1.033	0.889
300	4.683	4.222	3.473	2.638	2.237	1.236	1.047	0.903
305	4.706	4.248	3.519	2.670	2.291	1.288	1.061	0.916
310	4.728	4.273	3.565	2.702	2.345	1.339	1.075	0.930
315	4.750	4.299	3.611	2.734	2.399	1.391	1.090	0.944
320	4.773	4.324	3.657	2.767	2.452	1.443	1.104	0.957
325	4.795	4.350	3.703	2.799	2.506	1.495	1.118	0.971
330	4.817	4.375	3.749	2.831	2.560	1.546	1.133	0.984
335	4.840	4.401	3.796	2.864	2.614	1.598	1.147	0.998
340	4.862	4.426	3.842	2.898	2.667	1.650	1.161	1.012
345	4.884	4.452	3.888	2.933	2.721	1.701	1.175	1.025
350	4.907	4.477	3.934	2.967	2.775	1.733	1.190	1.039
355	4.929	4.502	3.980	3.001	2.829	1.764	1.204	1.052
360	4.952	4.528	4.026	3.036	2.874	1.796	1.218	1.066
365	4.974	4.553	4.073	3.070	2.914	1.828	1.233	1.080
370	4.996	4.579	4.119	3.105	2.955	1.860	1.247	1.093
375	5.019	4.604	4.165	3.139	2.995	1.891	1.261	1.107
380	5.041	4.630	4.211	3.174	3.035	1.923	1.275	1.121
385	5.063	4.655	4.257	3.208	3.075	1.955	1.290	1.134

Thickness is intumescent only. Table applies to columns with 4-sided protection. Table also applies to beams with 4-sided protection up to a maximum protection thickness of 3.750mm.

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FIRETEX FX1003 and FIRETEX FX2003

Table 14: I-Section Columns: 90 Minutes								
Section Factor up to m^{-1}	Thickness (mm) Required for a Design Temperature of							
	350°C	400°C	450°C	500°C	550°C	600°C	650°C	700°C
30	1.658	0.996	0.783	0.621	0.486	0.387	0.278	0.213
35	1.825	1.123	0.852	0.697	0.552	0.431	0.312	0.239
40	1.991	1.295	0.921	0.765	0.618	0.475	0.345	0.265
45	2.158	1.498	0.989	0.815	0.684	0.518	0.379	0.291
50	2.324	1.700	1.058	0.864	0.750	0.562	0.413	0.317
55	2.491	1.815	1.127	0.914	0.779	0.606	0.447	0.343
60	2.657	1.930	1.217	0.964	0.808	0.650	0.480	0.369
65	2.824	2.045	1.355	1.013	0.837	0.694	0.514	0.395
70	3.049	2.160	1.493	1.063	0.866	0.737	0.548	0.421
75	3.286	2.275	1.631	1.112	0.895	0.764	0.581	0.447
80	3.522	2.390	1.740	1.162	0.924	0.784	0.615	0.473
85	3.759	2.505	1.820	1.240	0.953	0.804	0.649	0.499
90	3.996	2.620	1.900	1.328	0.981	0.824	0.683	0.525
95	4.046	2.735	1.980	1.416	1.010	0.844	0.716	0.551
100	4.092	2.850	2.060	1.504	1.039	0.863	0.750	0.577
105	4.138	2.978	2.141	1.592	1.068	0.883	0.765	0.603
110	4.185	3.106	2.221	1.680	1.097	0.903	0.781	0.629
115	4.231	3.234	2.301	1.737	1.126	0.923	0.796	0.655
120	4.278	3.362	2.381	1.784	1.155	0.943	0.812	0.681
125	4.324	3.490	2.461	1.832	1.194	0.963	0.827	0.707
130	4.371	3.618	2.541	1.879	1.255	0.982	0.842	0.733
135	4.417	3.746	2.621	1.926	1.315	1.002	0.858	0.755
140	4.463	3.874	2.702	1.974	1.376	1.022	0.873	0.769
145	4.510	4.000	2.782	2.021	1.437	1.042	0.888	0.783
150	4.556	4.027	2.860	2.068	1.498	1.062	0.904	0.796
155	4.603	4.054	2.924	2.116	1.558	1.082	0.919	0.810
160	4.649	4.081	2.989	2.163	1.619	1.101	0.935	0.824
165	4.695	4.108	3.054	2.210	1.680	1.121	0.950	0.838
170	4.742	4.135	3.119	2.258	1.746	1.141	0.965	0.852
175	4.788	4.162	3.183	2.305	1.815	1.161	0.981	0.866
180	4.835	4.189	3.248	2.352	1.884	1.204	0.996	0.880
185	4.881	4.216	3.313	2.400	1.953	1.307	1.012	0.894
190	4.928	4.243	3.377	2.447	2.022	1.410	1.027	0.908
195	4.974	4.270	3.442	2.494	2.091	1.513	1.042	0.922
200	5.020	4.297	3.507	2.542	2.160	1.616	1.058	0.936
205	5.067	4.324	3.572	2.589	2.229	1.708	1.073	0.950
210	5.113	4.351	3.636	2.636	2.298	1.753	1.089	0.964
215	5.160	4.377	3.701	2.684	2.367	1.797	1.104	0.978
220	5.206	4.404	3.766	2.731	2.436	1.842	1.119	0.992
225	5.252	4.431	3.830	2.778	2.505	1.886	1.135	1.006
230	5.299	4.458	3.895	2.826	2.574	1.931	1.150	1.020
235	5.345	4.485	3.960	2.878	2.643	1.975	1.165	1.034
240	5.392	4.512	4.007	2.935	2.712	2.020	1.206	1.048
245	5.438	4.539	4.027	2.992	2.781	2.064	1.288	1.061
250	5.485	4.566	4.047	3.049	2.850	2.109	1.369	1.075
255	5.531	4.593	4.066	3.106	2.911	2.153	1.451	1.089
260	5.577	4.620	4.086	3.163	2.971	2.198	1.532	1.103
265	5.624	4.647	4.106	3.220	3.032	2.242	1.614	1.117
270	5.670	4.674	4.125	3.277	3.093	2.287	1.696	1.131
275	5.717	4.701	4.145	3.334	3.153	2.331	1.737	1.145
280	5.763	4.728	4.164	3.391	3.214	2.375	1.776	1.159
285	5.809	4.755	4.184	3.448	3.274	2.420	1.816	1.173
290	5.856	4.781	4.204	3.506	3.335	2.464	1.855	1.222
295	5.902	4.808	4.223	3.563	3.396	2.509	1.894	1.277
300		4.835	4.243	3.620	3.456	2.553	1.934	1.333
305		4.862	4.263	3.677	3.517	2.598	1.973	1.388
310		4.889	4.282	3.734	3.578	2.642	2.012	1.443
315		4.916	4.302	3.791	3.638	2.687	2.051	1.498
320		4.943	4.321	3.848	3.699	2.731	2.091	1.553
325		4.970	4.341	3.905	3.760	2.776	2.130	1.608
330		4.997	4.361	3.962	3.820	2.820	2.169	1.663
335		5.024	4.380	4.019	3.881	2.869	2.208	1.712
340		5.051	4.400	4.076	3.941	2.926	2.248	1.746
345		5.078	4.420	4.133	4.002	2.982	2.287	1.781
350		5.105	4.439	4.190	4.063	3.039	2.326	1.815
355		5.132	4.459	4.247	4.123	3.096	2.366	1.850
360		5.159	4.478	4.304	4.184	3.152	2.405	1.884
365		5.185	4.498	4.361	4.245	3.209	2.444	1.919
370		5.212	4.518	4.418	4.305	3.266	2.483	1.953
375		5.239	4.537	4.475	4.366	3.322	2.523	1.988
380		5.266	4.557	4.533	4.427	3.379	2.562	2.022
385		5.293	4.576	4.590	4.487	3.436	2.601	2.057

Thickness is intumescent only. Table applies to columns with 4-sided protection. Table also applies to beams with 4-sided protection up to a maximum protection thickness of 3.750mm.

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Table 15: I-Section Columns: 105 Minutes								
Section Factor up to m^{-1}	Thickness (mm) Required for a Design Temperature of							
	350°C	400°C	450°C	500°C	550°C	600°C	650°C	700°C
30	2.478	1.378	1.001	0.819	0.664	0.549	0.432	0.349
35	2.742	1.694	1.099	0.900	0.755	0.619	0.487	0.391
40	3.011	1.912	1.223	0.980	0.808	0.688	0.542	0.432
45	3.284	2.128	1.445	1.061	0.860	0.754	0.597	0.474
50	3.556	2.344	1.666	1.141	0.912	0.793	0.653	0.516
55	3.829	2.560	1.805	1.254	0.964	0.831	0.708	0.557
60	4.061	2.775	1.929	1.390	1.016	0.869	0.756	0.599
65	4.225	2.991	2.053	1.526	1.069	0.907	0.782	0.641
70	4.389	3.205	2.178	1.661	1.121	0.946	0.808	0.682
75	4.553	3.420	2.302	1.750	1.173	0.984	0.834	0.724
80	4.718	3.635	2.426	1.820	1.239	1.022	0.860	0.756
85	4.882	3.850	2.550	1.889	1.305	1.060	0.886	0.773
90	5.046	4.010	2.674	1.959	1.371	1.099	0.912	0.790
95	5.210	4.043	2.798	2.029	1.437	1.137	0.937	0.807
100	5.374	4.077	2.938	2.099	1.503	1.175	0.963	0.824
105	5.538	4.110	3.089	2.168	1.569	1.263	0.989	0.841
110	5.702	4.144	3.240	2.238	1.635	1.351	1.015	0.858
115	5.866	4.177	3.391	2.308	1.701	1.439	1.041	0.874
120		4.211	3.543	2.378	1.779	1.527	1.067	0.891
125		4.244	3.694	2.448	1.857	1.614	1.093	0.908
130		4.277	3.845	2.517	1.935	1.701	1.119	0.925
135		4.311	3.996	2.587	2.013	1.757	1.145	0.942
140		4.344	4.024	2.657	2.091	1.813	1.171	0.959
145		4.378	4.048	2.727	2.169	1.869	1.228	0.976
150		4.411	4.073	2.796	2.247	1.925	1.292	0.993
155		4.444	4.097	2.874	2.325	1.981	1.356	1.009
160		4.478	4.121	2.980	2.403	2.037	1.420	1.026
165		4.511	4.146	3.085	2.481	2.093	1.485	1.043
170		4.545	4.170	3.191	2.559	2.149	1.549	1.060
175		4.578	4.195	3.296	2.637	2.205	1.613	1.077
180		4.611	4.219	3.402	2.715	2.261	1.677	1.094
185		4.645	4.243	3.508	2.793	2.317	1.733	1.111
190		4.678	4.268	3.613	2.875	2.373	1.784	1.127
195		4.712	4.292	3.719	2.969	2.429	1.835	1.144
200		4.745	4.317	3.824	3.062	2.485	1.886	1.161
205		4.779	4.341	3.930	3.156	2.541	1.937	1.192
210		4.812	4.365	4.008	3.250	2.597	1.989	1.284
215		4.845	4.390	4.031	3.344	2.653	2.040	1.376
220		4.879	4.414	4.055	3.437	2.709	2.091	1.468
225		4.912	4.439	4.079	3.531	2.765	2.142	1.561
230		4.946	4.463	4.102	3.625	2.821	2.193	1.653
235		4.979	4.487	4.126	3.719	2.885	2.245	1.723
240		5.012	4.512	4.149	3.812	2.957	2.296	1.769
245		5.046	4.536	4.173	3.906	3.029	2.347	1.815
250		5.079	4.561	4.196	4.000	3.101	2.398	1.861
255		5.113	4.585	4.220	4.020	3.173	2.449	1.907
260		5.146	4.609	4.243	4.041	3.245	2.501	1.953
265		5.179	4.634	4.267	4.061	3.317	2.552	1.999
270		5.213	4.658	4.291	4.081	3.389	2.603	2.046
275		5.246	4.683	4.314	4.102	3.461	2.654	2.092
280		5.280	4.707	4.338	4.122	3.532	2.705	2.138
285		5.313	4.731	4.361	4.142	3.604	2.757	2.184
290		5.346	4.756	4.385	4.162	3.676	2.808	2.230
295		5.380	4.780	4.408	4.183	3.748	2.857	2.276
300		5.413	4.805	4.432	4.203	3.820	2.898	2.323
305		5.447	4.829	4.455	4.223	3.892	2.939	2.369
310		5.480	4.853	4.479	4.244	3.964	2.980	2.415
315		5.514	4.878	4.502	4.264	4.011	3.021	2.461
320		5.547	4.902	4.526	4.284	4.033	3.062	2.507
325		5.580	4.927	4.550	4.305	4.055	3.102	2.553
330		5.614	4.951	4.573	4.325	4.077	3.143	2.599
335		5.647	4.975	4.597	4.345	4.099	3.184	2.646
340		5.681	5.000	4.620	4.366	4.121	3.225	2.692
345		5.714	5.024	4.644	4.386	4.143	3.266	2.738
350		5.747	5.049	4.667	4.406	4.165	3.307	2.784
355		5.781	5.073	4.691	4.427	4.187	3.348	2.830
360		5.814	5.097	4.714	4.447	4.209	3.389	2.867
365		5.848	5.122	4.738	4.467	4.231	3.429	2.896
370		5.881	5.146	4.762	4.487	4.253	3.470	2.925
375			5.171	4.785	4.508	4.275	3.511	2.954
380			5.195	4.809	4.528	4.297	3.552	2.982
385			5.219	4.832	4.548	4.319	3.593	3.011

Thickness is intumescent only. Table applies to columns with 4-sided protection. Table also applies to beams with 4-sided protection up to a maximum protection thickness of 3.750mm.

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Table 16: I-Section Columns: 120 Minutes								
Section Factor up to m^{-1}	Thickness (mm) Required for a Design Temperature of							
	350°C	400°C	450°C	500°C	550°C	600°C	650°C	700°C
30	3.233	2.139	1.270	1.017	0.843	0.734	0.586	0.491
35	3.582	2.468	1.601	1.125	0.925	0.797	0.665	0.550
40	3.931	2.796	1.844	1.291	1.007	0.859	0.745	0.610
45	4.280	3.093	2.049	1.506	1.089	0.921	0.796	0.669
50	4.630	3.384	2.254	1.710	1.171	0.984	0.846	0.728
55	4.979	3.674	2.459	1.809	1.259	1.046	0.895	0.768
60	5.328	3.965	2.665	1.908	1.347	1.108	0.944	0.797
65	5.677	4.094	2.872	2.007	1.435	1.171	0.994	0.825
70		4.200	3.097	2.106	1.524	1.274	1.043	0.853
75		4.307	3.321	2.205	1.612	1.380	1.093	0.882
80		4.414	3.546	2.304	1.700	1.486	1.142	0.910
85		4.521	3.771	2.404	1.791	1.592	1.205	0.939
90		4.627	3.996	2.503	1.883	1.698	1.296	0.967
95		4.734	4.039	2.602	1.974	1.782	1.386	0.995
100		4.841	4.079	2.701	2.066	1.866	1.476	1.024
105		4.947	4.118	2.800	2.157	1.950	1.567	1.052
110		5.054	4.158	2.947	2.249	2.034	1.657	1.081
115		5.161	4.198	3.142	2.340	2.117	1.733	1.109
120		5.267	4.237	3.337	2.432	2.201	1.796	1.138
125		5.374	4.277	3.532	2.523	2.285	1.858	1.166
130		5.481	4.317	3.727	2.615	2.369	1.921	1.223
135		5.587	4.357	3.922	2.706	2.452	1.984	1.293
140		5.694	4.396	4.019	2.798	2.536	2.047	1.364
145		5.801	4.436	4.050	2.896	2.620	2.109	1.434
150		5.907	4.476	4.081	3.004	2.704	2.172	1.504
155			4.515	4.112	3.112	2.788	2.235	1.574
160			4.555	4.144	3.220	2.868	2.297	1.645
165			4.595	4.175	3.328	2.941	2.360	1.713
170			4.634	4.206	3.437	3.013	2.423	1.775
175			4.674	4.237	3.545	3.086	2.485	1.838
180			4.714	4.268	3.653	3.158	2.548	1.900
185			4.753	4.300	3.761	3.231	2.611	1.962
190			4.793	4.331	3.869	3.303	2.673	2.024
195			4.833	4.362	3.977	3.376	2.736	2.086
200			4.873	4.393	4.023	3.448	2.799	2.149
205			4.912	4.424	4.051	3.520	2.859	2.211
210			4.952	4.456	4.080	3.593	2.907	2.273
215			4.992	4.487	4.109	3.665	2.956	2.335
220			5.031	4.518	4.138	3.738	3.004	2.397
225			5.071	4.549	4.166	3.810	3.053	2.459
230			5.111	4.580	4.195	3.883	3.102	2.522
235			5.150	4.612	4.224	3.955	3.150	2.584
240			5.190	4.643	4.253	4.010	3.199	2.646
245			5.230	4.674	4.282	4.036	3.247	2.708
250			5.270	4.705	4.310	4.062	3.296	2.770
255			5.309	4.737	4.339	4.089	3.344	2.832
260			5.349	4.768	4.368	4.115	3.393	2.876
265			5.389	4.799	4.397	4.141	3.441	2.912
270			5.428	4.830	4.425	4.167	3.490	2.948
275			5.468	4.861	4.454	4.194	3.538	2.983
280			5.508	4.893	4.483	4.220	3.587	3.019
285			5.547	4.924	4.512	4.246	3.635	3.055
290			5.587	4.955	4.541	4.272	3.684	3.091
295			5.627	4.986	4.569	4.299	3.732	3.127
300			5.666	5.017	4.598	4.325	3.781	3.163
305			5.706	5.049	4.627	4.351	3.829	3.199
310			5.746	5.080	4.656	4.377	3.878	3.235
315			5.786	5.111	4.685	4.403	3.926	3.270
320			5.825	5.142	4.713	4.430	3.975	3.306
325			5.865	5.173	4.742	4.456	4.016	3.342
330			5.905	5.205	4.771	4.482	4.050	3.378
335				5.236	4.800	4.508	4.084	3.414
340				5.267	4.828	4.535	4.117	3.450
345				5.298	4.857	4.561	4.151	3.486
350				5.329	4.886	4.587	4.185	3.522
355				5.361	4.915	4.613	4.219	3.557
360				5.392	4.944	4.640	4.252	3.593
365				5.423	4.972	4.666	4.286	3.629
370				5.454	5.001	4.692	4.320	3.665
375				5.485	5.030	4.718	4.354	3.701
380				5.517	5.059	4.744	4.387	3.737
385				5.548	5.087	4.771	4.421	3.773

Thickness is intumescent only. Table applies to columns with 4-sided protection. Table also applies to beams with 4-sided protection up to a maximum protection thickness of 3.750mm.

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SHERWIN-WILLIAMS

FIRETEX FX1003 and FIRETEX FX2003

Section Factor up to m^{-1}	Table 17: Rectangular Hollow Beams: Fire Resistance Period: 15 Minutes									
	Thickness (mm) Required for a Design Temperature of									
	350°C	400°C	450°C	500°C	550°C	580°C	600°C	620°C	650°C	700°C
35	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461
40	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461
45	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461
50	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461
55	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461
60	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461
65	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461
70	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461
75	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461
80	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461
85	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461
90	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461
95	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461
100	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461
105	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461
110	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461
115	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461
120	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461
125	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461
130	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461
135	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461
140	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461
145	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461
150	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461
155	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461
160	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461
165	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461
170	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461
175	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461
180	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461
185	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461
190	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461
195	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461
200	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461
205	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461
210	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461
215	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461
220	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461
225	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461
230	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461
235	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461
240	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461
245	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461
250	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461
255	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461
260	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461
265	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461
270	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461
275	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461
280	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461
285	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461
290	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461
295	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461
300	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461
305	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461
310	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461
315	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461
320	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461

Thickness is intumescent only. Table applies to beams with 3-sided protection and a concrete slab.

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FIRETEX FX1003 and FIRETEX FX2003

Section Factor up to m^{-1}	Table 18: Rectangular Hollow Beams: Fire Resistance Period: 30 Minutes									
	Thickness (mm) Required for a Design Temperature of									
	350°C	400°C	450°C	500°C	550°C	580°C	600°C	620°C	650°C	700°C
35	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461
40	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461
45	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461
50	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461
55	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461
60	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461
65	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461
70	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461
75	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461
80	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461
85	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461
90	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461
95	0.468	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461
100	0.487	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461
105	0.506	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461
110	0.525	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461
115	0.544	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461
120	0.563	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461
125	0.582	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461
130	0.600	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461
135	0.619	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461
140	0.638	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461
145	0.657	0.465	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461
150	0.676	0.481	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461
155	0.695	0.497	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461
160	0.714	0.512	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461
165	0.733	0.528	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461
170	0.751	0.544	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461
175	0.770	0.560	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461
180	0.789	0.575	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461
185	0.808	0.591	0.464	0.461	0.461	0.461	0.461	0.461	0.461	0.461
190	0.827	0.607	0.477	0.461	0.461	0.461	0.461	0.461	0.461	0.461
195	0.846	0.622	0.490	0.461	0.461	0.461	0.461	0.461	0.461	0.461
200	0.865	0.638	0.504	0.461	0.461	0.461	0.461	0.461	0.461	0.461
205	0.884	0.654	0.517	0.461	0.461	0.461	0.461	0.461	0.461	0.461
210	0.902	0.670	0.530	0.461	0.461	0.461	0.461	0.461	0.461	0.461
215	0.921	0.685	0.544	0.461	0.461	0.461	0.461	0.461	0.461	0.461
220	0.940	0.701	0.557	0.461	0.461	0.461	0.461	0.461	0.461	0.461
225	0.959	0.717	0.570	0.461	0.461	0.461	0.461	0.461	0.461	0.461
230	0.978	0.732	0.583	0.461	0.461	0.461	0.461	0.461	0.461	0.461
235	0.997	0.748	0.597	0.461	0.461	0.461	0.461	0.461	0.461	0.461
240	1.016	0.764	0.610	0.461	0.461	0.461	0.461	0.461	0.461	0.461
245	1.034	0.780	0.623	0.474	0.461	0.461	0.461	0.461	0.461	0.461
250	1.053	0.795	0.636	0.488	0.461	0.461	0.461	0.461	0.461	0.461
255	1.072	0.811	0.650	0.502	0.461	0.461	0.461	0.461	0.461	0.461
260	1.091	0.827	0.663	0.516	0.461	0.461	0.461	0.461	0.461	0.461
265	1.110	0.842	0.676	0.531	0.461	0.461	0.461	0.461	0.461	0.461
270	1.129	0.858	0.690	0.545	0.461	0.461	0.461	0.461	0.461	0.461
275	1.148	0.874	0.703	0.559	0.461	0.461	0.461	0.461	0.461	0.461
280	1.167	0.889	0.716	0.573	0.461	0.461	0.461	0.461	0.461	0.461
285	1.185	0.905	0.729	0.588	0.461	0.461	0.461	0.461	0.461	0.461
290	1.204	0.921	0.743	0.602	0.461	0.461	0.461	0.461	0.461	0.461
295	1.223	0.937	0.756	0.616	0.470	0.461	0.461	0.461	0.461	0.461
300	1.242	0.952	0.769	0.631	0.485	0.461	0.461	0.461	0.461	0.461
305	1.261	0.968	0.782	0.645	0.501	0.461	0.461	0.461	0.461	0.461
310	1.280	0.984	0.796	0.659	0.516	0.461	0.461	0.461	0.461	0.461
315	1.299	0.999	0.809	0.673	0.531	0.468	0.468	0.468	0.461	0.461
320	1.317	1.015	0.822	0.688	0.546	0.484	0.484	0.484	0.461	0.461

Thickness is intumescent only. Table applies to beams with 3-sided protection and a concrete slab.

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FIRETEX FX1003 and FIRETEX FX2003

Section Factor up to m^{-1}	Table 19: Rectangular Hollow Beams: Fire Resistance Period: 45 Minutes									
	Thickness (mm) Required for a Design Temperature of									
	350°C	400°C	450°C	500°C	550°C	580°C	600°C	620°C	650°C	700°C
35	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461
40	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461
45	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461
50	0.495	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461
55	0.545	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461
60	0.595	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461
65	0.645	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461
70	0.695	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461
75	0.745	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461
80	0.795	0.478	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461
85	0.845	0.512	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461
90	0.895	0.545	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461
95	0.945	0.579	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461
100	0.995	0.612	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461
105	1.045	0.646	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461
110	1.096	0.679	0.470	0.461	0.461	0.461	0.461	0.461	0.461	0.461
115	1.146	0.713	0.497	0.461	0.461	0.461	0.461	0.461	0.461	0.461
120	1.196	0.747	0.525	0.461	0.461	0.461	0.461	0.461	0.461	0.461
125	1.246	0.780	0.553	0.461	0.461	0.461	0.461	0.461	0.461	0.461
130	1.296	0.814	0.580	0.461	0.461	0.461	0.461	0.461	0.461	0.461
135	1.346	0.847	0.608	0.461	0.461	0.461	0.461	0.461	0.461	0.461
140	1.396	0.881	0.636	0.482	0.461	0.461	0.461	0.461	0.461	0.461
145	1.446	0.915	0.663	0.506	0.461	0.461	0.461	0.461	0.461	0.461
150	1.496	0.948	0.691	0.530	0.461	0.461	0.461	0.461	0.461	0.461
155	1.546	0.982	0.719	0.554	0.461	0.461	0.461	0.461	0.461	0.461
160	1.596	1.015	0.746	0.578	0.461	0.461	0.461	0.461	0.461	0.461
165	1.646	1.049	0.774	0.602	0.470	0.461	0.461	0.461	0.461	0.461
170	1.696	1.082	0.802	0.626	0.490	0.461	0.461	0.461	0.461	0.461
175	1.746	1.116	0.829	0.649	0.509	0.461	0.461	0.461	0.461	0.461
180	1.796	1.150	0.857	0.673	0.529	0.466	0.466	0.466	0.461	0.461
185	1.846	1.183	0.885	0.697	0.549	0.485	0.485	0.485	0.461	0.461
190	1.896	1.217	0.912	0.721	0.568	0.503	0.503	0.503	0.461	0.461
195	1.946	1.250	0.940	0.745	0.588	0.521	0.521	0.521	0.461	0.461
200	1.996	1.284	0.968	0.769	0.608	0.540	0.540	0.540	0.461	0.461
205	2.046	1.317	0.995	0.793	0.627	0.558	0.558	0.558	0.461	0.461
210	2.096	1.351	1.023	0.817	0.647	0.576	0.576	0.576	0.461	0.461
215	2.147	1.385	1.051	0.841	0.666	0.595	0.595	0.595	0.462	0.461
220	2.197	1.418	1.078	0.865	0.686	0.613	0.613	0.613	0.479	0.461
225	2.247	1.452	1.106	0.889	0.706	0.631	0.631	0.631	0.497	0.461
230	2.297	1.485	1.133	0.913	0.725	0.650	0.650	0.650	0.514	0.461
235	2.347	1.519	1.161	0.937	0.745	0.668	0.668	0.668	0.532	0.466
240	2.397	1.552	1.189	0.961	0.765	0.686	0.686	0.686	0.550	0.480
245	2.447	1.586	1.216	0.985	0.784	0.705	0.705	0.705	0.567	0.494
250	2.497	1.620	1.244	1.009	0.804	0.723	0.723	0.723	0.585	0.508
255	2.547	1.653	1.272	1.033	0.824	0.741	0.741	0.741	0.602	0.522
260	2.597	1.687	1.299	1.056	0.843	0.760	0.760	0.760	0.620	0.536
265	2.647	1.720	1.327	1.080	0.863	0.778	0.778	0.778	0.637	0.550
270	2.697	1.754	1.355	1.104	0.883	0.796	0.796	0.796	0.655	0.565
275	2.747	1.788	1.382	1.128	0.902	0.815	0.815	0.815	0.672	0.579
280	2.797	1.821	1.410	1.152	0.922	0.833	0.833	0.833	0.690	0.593
285	2.847	1.855	1.438	1.176	0.941	0.851	0.851	0.851	0.707	0.607
290		1.888	1.465	1.200	0.961	0.870	0.870	0.870	0.725	0.621
295		1.922	1.493	1.224	0.981	0.888	0.888	0.888	0.742	0.635
300		1.955	1.521	1.248	1.000	0.907	0.907	0.907	0.760	0.649
305		1.989	1.548	1.272	1.020	0.925	0.925	0.925	0.777	0.663
310		2.023	1.576	1.296	1.040	0.943	0.943	0.943	0.795	0.678
315		2.056	1.604	1.320	1.059	0.962	0.962	0.962	0.812	0.692
320		2.090	1.631	1.344	1.079	0.980	0.980	0.980	0.830	0.706

Thickness is intumescent only. Table applies to beams with 3-sided protection and a concrete slab.

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FIRETEX FX1003 and FIRETEX FX2003

Section Factor up to m^{-1}	Table 20: Rectangular Hollow Beams: Fire Resistance Period: 60 Minutes									
	Thickness (mm) Required for a Design Temperature of									
	350°C	400°C	450°C	500°C	550°C	580°C	600°C	620°C	650°C	700°C
35	2.627	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461
40	2.627	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461
45	2.627	0.482	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461
50	2.627	0.553	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461
55	2.627	0.624	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461
60	2.627	0.695	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461
65	2.627	0.766	0.476	0.461	0.461	0.461	0.461	0.461	0.461	0.461
70	2.627	0.837	0.525	0.461	0.461	0.461	0.461	0.461	0.461	0.461
75	2.627	0.908	0.574	0.461	0.461	0.461	0.461	0.461	0.461	0.461
80	2.627	0.979	0.622	0.461	0.461	0.461	0.461	0.461	0.461	0.461
85	2.627	1.051	0.671	0.461	0.461	0.461	0.461	0.461	0.461	0.461
90	2.627	1.122	0.720	0.461	0.461	0.461	0.461	0.461	0.461	0.461
95	2.627	1.193	0.768	0.461	0.461	0.461	0.461	0.461	0.461	0.461
100		1.264	0.817	0.490	0.461	0.461	0.461	0.461	0.461	0.461
105		1.335	0.866	0.534	0.461	0.461	0.461	0.461	0.461	0.461
110		1.406	0.914	0.577	0.461	0.461	0.461	0.461	0.461	0.461
115		1.477	0.963	0.621	0.471	0.461	0.461	0.461	0.461	0.461
120		1.548	1.012	0.665	0.505	0.461	0.461	0.461	0.461	0.461
125		1.619	1.060	0.708	0.538	0.461	0.461	0.461	0.461	0.461
130		1.690	1.109	0.752	0.572	0.492	0.492	0.492	0.461	0.461
135		1.761	1.158	0.795	0.606	0.525	0.525	0.525	0.461	0.461
140		1.832	1.206	0.839	0.640	0.558	0.558	0.558	0.461	0.461
145		1.903	1.255	0.883	0.673	0.591	0.591	0.591	0.461	0.461
150		1.974	1.304	0.926	0.707	0.624	0.624	0.624	0.462	0.461
155		2.045	1.352	0.970	0.741	0.656	0.656	0.656	0.490	0.461
160		2.116	1.401	1.013	0.774	0.689	0.689	0.689	0.519	0.461
165		2.187	1.449	1.057	0.808	0.722	0.722	0.722	0.548	0.461
170		2.258	1.498	1.101	0.842	0.755	0.755	0.755	0.577	0.468
175		2.329	1.547	1.144	0.875	0.788	0.788	0.788	0.606	0.492
180		2.400	1.595	1.188	0.909	0.821	0.821	0.821	0.634	0.516
185		2.471	1.644	1.231	0.943	0.853	0.853	0.853	0.663	0.539
190		2.542	1.693	1.275	0.976	0.886	0.886	0.886	0.692	0.563
195		2.613	1.741	1.319	1.010	0.919	0.919	0.919	0.721	0.587
200		2.684	1.790	1.362	1.044	0.952	0.952	0.952	0.750	0.610
205		2.755	1.839	1.406	1.077	0.985	0.985	0.985	0.778	0.634
210		2.826	1.887	1.450	1.111	1.018	1.018	1.018	0.807	0.658
215			1.936	1.493	1.145	1.051	1.051	1.051	0.836	0.682
220			1.985	1.537	1.179	1.083	1.083	1.083	0.865	0.705
225			2.033	1.580	1.212	1.116	1.116	1.116	0.894	0.729
230			2.082	1.624	1.246	1.149	1.149	1.149	0.922	0.753
235			2.131	1.668	1.280	1.182	1.182	1.182	0.951	0.776
240			2.179	1.711	1.313	1.215	1.215	1.215	0.980	0.800
245			2.228	1.755	1.347	1.248	1.248	1.248	1.009	0.824
250			2.277	1.798	1.381	1.280	1.280	1.280	1.038	0.848
255			2.325	1.842	1.414	1.313	1.313	1.313	1.066	0.871
260			2.374	1.886	1.448	1.346	1.346	1.346	1.095	0.895
265			2.423	1.929	1.482	1.379	1.379	1.379	1.124	0.919
270			2.471	1.973	1.515	1.412	1.412	1.412	1.153	0.943
275			2.520	2.016	1.549	1.445	1.445	1.445	1.182	0.966
280			2.569	2.060	1.583	1.477	1.477	1.477	1.210	0.990
285			2.617	2.104	1.616	1.510	1.510	1.510	1.239	1.014
290			2.666	2.147	1.650	1.543	1.543	1.543	1.268	1.037
295			2.715	2.191	1.684	1.576	1.576	1.576	1.297	1.061
300			2.763	2.235	1.717	1.609	1.609	1.609	1.325	1.085
305			2.812	2.278	1.751	1.642	1.642	1.642	1.354	1.109
310			2.861	2.322	1.785	1.675	1.675	1.675	1.383	1.132
315				2.365	1.819	1.707	1.707	1.707	1.412	1.156
320				2.409	1.852	1.740	1.740	1.740	1.441	1.180

Thickness is intumescent only. Table applies to beams with 3-sided protection and a concrete slab.

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Section Factor up to m^{-1}	Table 21: Rectangular Beams: Fire Resistance Period: 75 Minutes									
	Thickness (mm) Required for a Design Temperature of									
	350°C	400°C	450°C	500°C	550°C	580°C	600°C	620°C	650°C	700°C
35		2.627	0.461	0.461	0.461	0.461	0.461	0.461	0.461	0.461
40		2.627	0.471	0.461	0.461	0.461	0.461	0.461	0.461	0.461
45		2.627	0.561	0.461	0.461	0.461	0.461	0.461	0.461	0.461
50		2.627	0.652	0.461	0.461	0.461	0.461	0.461	0.461	0.461
55		2.627	0.742	0.461	0.461	0.461	0.461	0.461	0.461	0.461
60		2.627	0.833	0.525	0.461	0.461	0.461	0.461	0.461	0.461
65		2.627	0.924	0.596	0.461	0.461	0.461	0.461	0.461	0.461
70		2.627	1.014	0.667	0.461	0.461	0.461	0.461	0.461	0.461
75		2.627	1.105	0.738	0.461	0.461	0.461	0.461	0.461	0.461
80		2.627	1.195	0.809	0.461	0.461	0.461	0.461	0.461	0.461
85		2.627	1.286	0.880	0.481	0.461	0.461	0.461	0.461	0.461
90		2.627	1.377	0.951	0.536	0.461	0.461	0.461	0.461	0.461
95		2.627	1.467	1.022	0.592	0.461	0.461	0.461	0.461	0.461
100			1.558	1.093	0.647	0.481	0.481	0.481	0.461	0.461
105			1.648	1.164	0.703	0.536	0.536	0.536	0.461	0.461
110			1.739	1.235	0.759	0.591	0.591	0.591	0.461	0.461
115			1.830	1.306	0.814	0.647	0.647	0.647	0.461	0.461
120			1.920	1.377	0.870	0.702	0.702	0.702	0.482	0.461
125			2.011	1.448	0.925	0.757	0.757	0.757	0.525	0.461
130			2.102	1.519	0.981	0.813	0.813	0.813	0.568	0.465
135			2.192	1.590	1.037	0.868	0.868	0.868	0.611	0.498
140			2.283	1.661	1.092	0.923	0.923	0.923	0.654	0.532
145			2.373	1.732	1.148	0.979	0.979	0.979	0.697	0.565
150			2.464	1.803	1.203	1.034	1.034	1.034	0.739	0.598
155			2.555	1.874	1.259	1.089	1.089	1.089	0.782	0.631
160			2.645	1.945	1.315	1.145	1.145	1.145	0.825	0.665
165			2.736	2.016	1.370	1.200	1.200	1.200	0.868	0.698
170			2.826	2.087	1.426	1.255	1.255	1.255	0.911	0.731
175				2.158	1.481	1.310	1.310	1.310	0.954	0.764
180				2.229	1.537	1.366	1.366	1.366	0.997	0.798
185				2.300	1.593	1.421	1.421	1.421	1.040	0.831
190				2.371	1.648	1.476	1.476	1.476	1.083	0.864
195				2.442	1.704	1.532	1.532	1.532	1.126	0.898
200				2.513	1.760	1.587	1.587	1.587	1.168	0.931
205				2.584	1.815	1.642	1.642	1.642	1.211	0.964
210				2.655	1.871	1.698	1.698	1.698	1.254	0.997
215				2.726	1.926	1.753	1.753	1.753	1.297	1.031
220				2.797	1.982	1.808	1.808	1.808	1.340	1.064
225				2.868	2.038	1.864	1.864	1.864	1.383	1.097
230					2.093	1.919	1.919	1.919	1.426	1.130
235					2.149	1.974	1.974	1.974	1.469	1.164
240					2.204	2.030	2.030	2.030	1.512	1.197
245					2.260	2.085	2.085	2.085	1.555	1.230
250					2.316	2.140	2.140	2.140	1.597	1.263
255					2.371	2.196	2.196	2.196	1.640	1.297
260					2.427	2.251	2.251	2.251	1.683	1.330
265					2.482	2.306	2.306	2.306	1.726	1.363
270					2.538	2.361	2.361	2.361	1.769	1.396
275					2.594	2.417	2.417	2.417	1.812	1.430
280					2.649	2.472	2.472	2.472	1.855	1.463
285					2.705	2.527	2.527	2.527	1.898	1.496
290					2.760	2.583	2.583	2.583	1.941	1.529
295					2.816	2.638	2.638	2.638	1.984	1.563
300					2.872	2.693	2.693	2.693	2.026	1.596
305						2.749	2.749	2.749	2.069	1.629
310						2.804	2.804	2.804	2.112	1.662
315						2.859	2.859	2.859	2.155	1.696
320									2.198	1.729

Thickness is intumescent only. Table applies to beams with 3-sided protection and a concrete slab.

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Section Factor up to m^{-1}	Table 22: Rectangular Hollow Beams: Fire Resistance Period: 90 Minutes									
	Thickness (mm) Required for a Design Temperature of									
	350°C	400°C	450°C	500°C	550°C	580°C	600°C	620°C	650°C	700°C
35			2.627	2.627	0.461	0.461	0.461	0.461	0.461	0.461
40			2.627	2.627	0.461	0.461	0.461	0.461	0.461	0.461
45			2.627	2.627	0.461	0.461	0.461	0.461	0.461	0.461
50			2.627	2.627	0.473	0.461	0.461	0.461	0.461	0.461
55			2.627	2.627	0.559	0.461	0.461	0.461	0.461	0.461
60			2.627	2.627	0.646	0.478	0.478	0.478	0.461	0.461
65			2.627	2.627	0.732	0.557	0.557	0.557	0.461	0.461
70			2.627	2.627	0.818	0.636	0.636	0.636	0.461	0.461
75			2.627	2.627	0.904	0.715	0.715	0.715	0.461	0.461
80			2.627	2.627	0.990	0.794	0.794	0.794	0.461	0.461
85			2.627	2.627	1.076	0.873	0.873	0.873	0.461	0.461
90				2.627	1.162	0.952	0.952	0.952	0.461	0.461
95				2.627	1.249	1.031	1.031	1.031	0.463	0.461
100				2.627	1.335	1.110	1.110	1.110	0.525	0.461
105				2.627	1.421	1.189	1.189	1.189	0.587	0.461
110				2.627	1.507	1.268	1.268	1.268	0.649	0.505
115				2.627	1.593	1.347	1.347	1.347	0.710	0.555
120				2.627	1.679	1.426	1.426	1.426	0.772	0.605
125				2.627	1.766	1.505	1.505	1.505	0.834	0.655
130					1.852	1.584	1.584	1.584	0.896	0.704
135					1.938	1.663	1.663	1.663	0.958	0.754
140					2.024	1.742	1.742	1.742	1.020	0.804
145					2.110	1.821	1.821	1.821	1.081	0.854
150					2.196	1.900	1.900	1.900	1.143	0.904
155					2.282	1.979	1.979	1.979	1.205	0.953
160					2.369	2.058	2.058	2.058	1.267	1.003
165					2.455	2.137	2.137	2.137	1.329	1.053
170					2.541	2.216	2.216	2.216	1.391	1.103
175					2.627	2.295	2.295	2.295	1.452	1.153
180					2.713	2.374	2.374	2.374	1.514	1.202
185					2.799	2.453	2.453	2.453	1.576	1.252
190					2.885	2.532	2.532	2.532	1.638	1.302
195						2.611	2.611	2.611	1.700	1.352
200						2.690	2.690	2.690	1.761	1.402
205						2.769	2.769	2.769	1.823	1.451
210						2.848	2.848	2.848	1.885	1.501
215									1.947	1.551
220									2.009	1.601
225									2.071	1.651
230									2.132	1.701
235									2.194	1.750
240									2.256	1.800
245									2.318	1.850
250									2.380	1.900
255									2.442	1.950
260									2.503	1.999
265									2.565	2.049
270									2.627	2.099
275									2.689	2.149
280									2.751	2.199
285									2.812	2.248
290									2.874	2.298
295										2.348
300										2.398
305										2.448
310										2.497
315										2.547
320										2.597

Thickness is intumescent only. Table applies to beams with 3-sided protection and a concrete slab.

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Section Factor up to m^{-1}	Table 23: Rectangular Hollow Beams: Fire Resistance Period: 105 Minutes									
	Thickness (mm) Required for a Design Temperature of									
	350°C	400°C	450°C	500°C	550°C	580°C	600°C	620°C	650°C	700°C
35				2.627	2.627	0.461	0.461	0.461	0.461	0.461
40				2.627	2.627	0.461	0.461	0.461	0.461	0.461
45				2.627	2.627	0.572	0.572	0.572	0.461	0.461
50				2.627	2.627	0.688	0.688	0.688	0.461	0.461
55				2.627	2.627	0.805	0.805	0.805	0.461	0.461
60				2.627	2.627	0.922	0.922	0.922	0.493	0.461
65				2.627	2.627	1.039	1.039	1.039	0.574	0.461
70				2.627	2.627	1.156	1.156	1.156	0.654	0.461
75				2.627	2.627	1.272	1.272	1.272	0.735	0.461
80				2.627	2.627	1.389	1.389	1.389	0.816	0.461
85					2.627	1.506	1.506	1.506	0.897	0.525
90					2.627	1.623	1.623	1.623	0.978	0.596
95					2.627	1.739	1.739	1.739	1.059	0.667
100					2.627	1.856	1.856	1.856	1.139	0.738
105					2.627	1.973	1.973	1.973	1.220	0.809
110					2.627	2.090	2.090	2.090	1.301	0.880
115						2.207	2.207	2.207	1.382	0.951
120						2.323	2.323	2.323	1.463	1.022
125						2.440	2.440	2.440	1.544	1.093
130						2.557	2.557	2.557	1.625	1.164
135						2.674	2.674	2.674	1.705	1.235
140						2.790	2.790	2.790	1.786	1.306
145									1.867	1.377
150									1.948	1.448
155									2.029	1.519
160									2.110	1.590
165									2.190	1.661
170									2.271	1.732
175									2.352	1.803
180									2.433	1.874
185									2.514	1.945
190									2.595	2.016
195									2.676	2.087
200									2.756	2.158
205									2.837	2.229
210										2.300
215										2.371
220										2.442
225										2.513
230										2.584
235										2.655
240										2.726
245										2.797
250										2.868

Thickness is intumescent only. Table applies to beams with 3-sided protection and a concrete slab.

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Section Factor up to m^{-1}	Table 24: Rectangular Hollow Beams: Fire Resistance Period: 120 Minutes									
	Thickness (mm) Required for a Design Temperature of									
	350°C	400°C	450°C	500°C	550°C	580°C	600°C	620°C	650°C	700°C
35					2.627	2.627	2.627	2.627	0.461	0.461
40					2.627	2.627	2.627	2.627	0.461	0.461
45					2.627	2.627	2.627	2.627	0.548	0.461
50					2.627	2.627	2.627	2.627	0.664	0.461
55					2.627	2.627	2.627	2.627	0.779	0.506
60					2.627	2.627	2.627	2.627	0.895	0.601
65					2.627	2.627	2.627	2.627	1.010	0.695
70					2.627	2.627	2.627	2.627	1.126	0.790
75					2.627	2.627	2.627	2.627	1.241	0.885
80					2.627	2.627	2.627	2.627	1.357	0.979
85						2.627	2.627	2.627	1.472	1.074
90						2.627	2.627	2.627	1.588	1.169
95						2.627	2.627	2.627	1.703	1.264
100									1.819	1.358
105									1.934	1.453
110									2.050	1.548
115									2.165	1.642
120									2.281	1.737
125									2.396	1.832
130									2.512	1.926
135									2.627	2.021
140									2.742	2.116
145									2.858	2.210
150										2.305
155										2.400
160										2.494
165										2.589
170										2.684
175										2.778
180										2.873

Thickness is intumescent only. Table applies to beams with 3-sided protection and a concrete slab.

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Section Factor up to m^{-1}	Table 25: Rectangular Hollow Columns: Fire Resistance Period: 15 Minutes						
	Thickness (mm) Required for a Design Temperature of						
	400°C	450°C	500°C	550°C	600°C	650°C	700°C
35	0.392	0.392	0.392	0.392	0.392	0.392	0.392
40	0.392	0.392	0.392	0.392	0.392	0.392	0.392
45	0.392	0.392	0.392	0.392	0.392	0.392	0.392
50	0.392	0.392	0.392	0.392	0.392	0.392	0.392
55	0.392	0.392	0.392	0.392	0.392	0.392	0.392
60	0.392	0.392	0.392	0.392	0.392	0.392	0.392
65	0.392	0.392	0.392	0.392	0.392	0.392	0.392
70	0.392	0.392	0.392	0.392	0.392	0.392	0.392
75	0.392	0.392	0.392	0.392	0.392	0.392	0.392
80	0.392	0.392	0.392	0.392	0.392	0.392	0.392
85	0.392	0.392	0.392	0.392	0.392	0.392	0.392
90	0.392	0.392	0.392	0.392	0.392	0.392	0.392
95	0.392	0.392	0.392	0.392	0.392	0.392	0.392
100	0.392	0.392	0.392	0.392	0.392	0.392	0.392
105	0.392	0.392	0.392	0.392	0.392	0.392	0.392
110	0.392	0.392	0.392	0.392	0.392	0.392	0.392
115	0.392	0.392	0.392	0.392	0.392	0.392	0.392
120	0.392	0.392	0.392	0.392	0.392	0.392	0.392
125	0.392	0.392	0.392	0.392	0.392	0.392	0.392
130	0.392	0.392	0.392	0.392	0.392	0.392	0.392
135	0.392	0.392	0.392	0.392	0.392	0.392	0.392
140	0.392	0.392	0.392	0.392	0.392	0.392	0.392
145	0.392	0.392	0.392	0.392	0.392	0.392	0.392
150	0.392	0.392	0.392	0.392	0.392	0.392	0.392
155	0.392	0.392	0.392	0.392	0.392	0.392	0.392
160	0.392	0.392	0.392	0.392	0.392	0.392	0.392
165	0.392	0.392	0.392	0.392	0.392	0.392	0.392
170	0.392	0.392	0.392	0.392	0.392	0.392	0.392
175	0.392	0.392	0.392	0.392	0.392	0.392	0.392
180	0.392	0.392	0.392	0.392	0.392	0.392	0.392
185	0.392	0.392	0.392	0.392	0.392	0.392	0.392
190	0.392	0.392	0.392	0.392	0.392	0.392	0.392
195	0.392	0.392	0.392	0.392	0.392	0.392	0.392
200	0.392	0.392	0.392	0.392	0.392	0.392	0.392
205	0.392	0.392	0.392	0.392	0.392	0.392	0.392
210	0.392	0.392	0.392	0.392	0.392	0.392	0.392
215	0.392	0.392	0.392	0.392	0.392	0.392	0.392
220	0.392	0.392	0.392	0.392	0.392	0.392	0.392
225	0.392	0.392	0.392	0.392	0.392	0.392	0.392
230	0.392	0.392	0.392	0.392	0.392	0.392	0.392
235	0.392	0.392	0.392	0.392	0.392	0.392	0.392
240	0.392	0.392	0.392	0.392	0.392	0.392	0.392
245	0.392	0.392	0.392	0.392	0.392	0.392	0.392
250	0.392	0.392	0.392	0.392	0.392	0.392	0.392
255	0.392	0.392	0.392	0.392	0.392	0.392	0.392
260	0.392	0.392	0.392	0.392	0.392	0.392	0.392
265	0.392	0.392	0.392	0.392	0.392	0.392	0.392
270	0.392	0.392	0.392	0.392	0.392	0.392	0.392
275	0.392	0.392	0.392	0.392	0.392	0.392	0.392
280	0.392	0.392	0.392	0.392	0.392	0.392	0.392
285	0.392	0.392	0.392	0.392	0.392	0.392	0.392
290	0.392	0.392	0.392	0.392	0.392	0.392	0.392
295	0.392	0.392	0.392	0.392	0.392	0.392	0.392
300	0.392	0.392	0.392	0.392	0.392	0.392	0.392
305	0.392	0.392	0.392	0.392	0.392	0.392	0.392
310	0.392	0.392	0.392	0.392	0.392	0.392	0.392
315	0.392	0.392	0.392	0.392	0.392	0.392	0.392
320	0.392	0.392	0.392	0.392	0.392	0.392	0.392
325	0.392	0.392	0.392	0.392	0.392	0.392	0.392
330	0.392	0.392	0.392	0.392	0.392	0.392	0.392

Thickness is intumescent only. Table applies to columns with 4-sided protection. Table also applies to rectangular hollow beams with 4-sided protection up to a maximum protection thickness of 2.890mm.

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FIRETEX FX1003 and FIRETEX FX2003

Section Factor up to m^{-1}	Table 26: Rectangular Hollow Columns: Fire Resistance Period: 30 Minutes						
	Thickness (mm) Required for a Design Temperature of						
	400°C	450°C	500°C	550°C	600°C	650°C	700°C
35	0.392	0.392	0.392	0.392	0.392	0.392	0.392
40	0.392	0.392	0.392	0.392	0.392	0.392	0.392
45	0.392	0.392	0.392	0.392	0.392	0.392	0.392
50	0.392	0.392	0.392	0.392	0.392	0.392	0.392
55	0.392	0.392	0.392	0.392	0.392	0.392	0.392
60	0.392	0.392	0.392	0.392	0.392	0.392	0.392
65	0.392	0.392	0.392	0.392	0.392	0.392	0.392
70	0.392	0.392	0.392	0.392	0.392	0.392	0.392
75	0.392	0.392	0.392	0.392	0.392	0.392	0.392
80	0.395	0.392	0.392	0.392	0.392	0.392	0.392
85	0.420	0.392	0.392	0.392	0.392	0.392	0.392
90	0.445	0.392	0.392	0.392	0.392	0.392	0.392
95	0.469	0.392	0.392	0.392	0.392	0.392	0.392
100	0.494	0.392	0.392	0.392	0.392	0.392	0.392
105	0.526	0.408	0.392	0.392	0.392	0.392	0.392
110	0.558	0.428	0.392	0.392	0.392	0.392	0.392
115	0.590	0.447	0.392	0.392	0.392	0.392	0.392
120	0.622	0.467	0.392	0.392	0.392	0.392	0.392
125	0.654	0.486	0.392	0.392	0.392	0.392	0.392
130	0.686	0.506	0.392	0.392	0.392	0.392	0.392
135	0.718	0.527	0.392	0.392	0.392	0.392	0.392
140	0.750	0.547	0.392	0.392	0.392	0.392	0.392
145	0.782	0.568	0.394	0.392	0.392	0.392	0.392
150	0.814	0.589	0.407	0.392	0.392	0.392	0.392
155	0.846	0.609	0.421	0.392	0.392	0.392	0.392
160	0.878	0.630	0.434	0.392	0.392	0.392	0.392
165	0.910	0.650	0.448	0.392	0.392	0.392	0.392
170	0.942	0.671	0.461	0.392	0.392	0.392	0.392
175	0.974	0.691	0.475	0.392	0.392	0.392	0.392
180	1.010	0.712	0.489	0.392	0.392	0.392	0.392
185	1.058	0.733	0.504	0.392	0.392	0.392	0.392
190	1.107	0.753	0.521	0.394	0.392	0.392	0.392
195	1.156	0.774	0.538	0.405	0.392	0.392	0.392
200	1.204	0.794	0.554	0.415	0.392	0.392	0.392
205	1.253	0.815	0.571	0.426	0.392	0.392	0.392
210	1.302	0.835	0.588	0.436	0.392	0.392	0.392
215	1.351	0.856	0.605	0.446	0.392	0.392	0.392
220	1.399	0.877	0.621	0.457	0.392	0.392	0.392
225	1.448	0.897	0.638	0.467	0.392	0.392	0.392
230	1.497	0.918	0.655	0.477	0.392	0.392	0.392
235	1.545	0.938	0.672	0.488	0.392	0.392	0.392
240	1.594	0.959	0.688	0.500	0.392	0.392	0.392
245	1.643	0.979	0.705	0.514	0.392	0.392	0.392
250	1.691	1.000	0.722	0.528	0.395	0.392	0.392
255	1.740	1.035	0.739	0.542	0.402	0.392	0.392
260	1.789	1.070	0.755	0.556	0.410	0.392	0.392
265	1.837	1.105	0.772	0.570	0.418	0.392	0.392
270	1.886	1.141	0.789	0.584	0.426	0.392	0.392
275	1.935	1.176	0.806	0.599	0.434	0.392	0.392
280	1.984	1.211	0.822	0.613	0.442	0.392	0.392
285	2.032	1.246	0.839	0.627	0.450	0.392	0.392
290	2.081	1.281	0.856	0.641	0.458	0.392	0.392
295	2.130	1.316	0.873	0.655	0.466	0.392	0.392
300	2.178	1.351	0.889	0.669	0.473	0.392	0.392
305	2.227	1.386	0.906	0.683	0.481	0.392	0.392
310	2.276	1.422	0.923	0.698	0.489	0.392	0.392
315	2.324	1.457	0.940	0.712	0.499	0.392	0.392
320	2.373	1.492	0.956	0.726	0.513	0.392	0.392
325	2.422	1.527	0.973	0.740	0.526	0.392	0.392
330	2.470	1.562	0.990	0.754	0.540	0.392	0.392

Thickness is intumescent only. Table applies to columns with 4-sided protection. Table also applies to rectangular hollow beams with 4-sided protection up to a maximum protection thickness of 2.890mm.

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Section Factor up to m^{-1}	Table 27: Rectangular Hollow Columns: Fire Resistance Period: 45 Minutes						
	Thickness (mm) Required for a Design Temperature of						
	400°C	450°C	500°C	550°C	600°C	650°C	700°C
35	0.392	0.392	0.392	0.392	0.392	0.392	0.392
40	0.392	0.392	0.392	0.392	0.392	0.392	0.392
45	0.412	0.392	0.392	0.392	0.392	0.392	0.392
50	0.457	0.398	0.392	0.392	0.392	0.392	0.392
55	0.506	0.438	0.392	0.392	0.392	0.392	0.392
60	0.566	0.478	0.392	0.392	0.392	0.392	0.392
65	0.627	0.516	0.396	0.392	0.392	0.392	0.392
70	0.687	0.552	0.427	0.392	0.392	0.392	0.392
75	0.747	0.588	0.457	0.392	0.392	0.392	0.392
80	0.807	0.624	0.488	0.395	0.392	0.392	0.392
85	0.867	0.660	0.515	0.420	0.392	0.392	0.392
90	0.928	0.696	0.540	0.445	0.392	0.392	0.392
95	0.988	0.733	0.566	0.469	0.392	0.392	0.392
100	1.087	0.769	0.592	0.494	0.392	0.392	0.392
105	1.195	0.805	0.618	0.514	0.405	0.392	0.392
110	1.303	0.841	0.644	0.534	0.425	0.392	0.392
115	1.412	0.877	0.670	0.554	0.444	0.392	0.392
120	1.520	0.913	0.695	0.574	0.463	0.392	0.392
125	1.628	0.949	0.721	0.594	0.482	0.392	0.392
130	1.737	0.986	0.747	0.614	0.501	0.392	0.392
135	1.845	1.051	0.773	0.633	0.518	0.399	0.392
140	1.953	1.137	0.799	0.653	0.534	0.414	0.392
145	2.062	1.222	0.824	0.673	0.551	0.429	0.392
150	2.170	1.308	0.850	0.693	0.568	0.444	0.392
155	2.278	1.393	0.876	0.713	0.585	0.459	0.392
160	2.347	1.479	0.902	0.733	0.602	0.473	0.392
165	2.405	1.564	0.928	0.753	0.619	0.488	0.392
170	2.464	1.650	0.954	0.773	0.636	0.502	0.392
175	2.522	1.736	0.979	0.793	0.653	0.515	0.392
180	2.581	1.821	1.015	0.813	0.669	0.529	0.392
185	2.639	1.907	1.093	0.833	0.686	0.542	0.392
190	2.698	1.992	1.170	0.853	0.703	0.555	0.392
195	2.756	2.078	1.248	0.873	0.720	0.569	0.392
200	2.815	2.163	1.325	0.892	0.737	0.582	0.392
205	2.873	2.249	1.402	0.912	0.754	0.595	0.392
210	2.932	2.321	1.480	0.932	0.771	0.609	0.392
215	2.990	2.373	1.557	0.952	0.787	0.622	0.392
220	3.049	2.426	1.635	0.972	0.804	0.635	0.392
225	3.107	2.478	1.712	0.992	0.821	0.648	0.392
230	3.166	2.530	1.789	1.046	0.838	0.662	0.392
235	3.224	2.583	1.867	1.122	0.855	0.675	0.392
240	3.283	2.635	1.944	1.199	0.872	0.688	0.392
245	3.341	2.688	2.021	1.275	0.889	0.702	0.392
250	3.400	2.740	2.099	1.352	0.906	0.715	0.392
255	3.459	2.792	2.176	1.428	0.922	0.728	0.392
260	3.519	2.845	2.254	1.505	0.939	0.742	0.392
265	3.578	2.897	2.331	1.581	0.956	0.755	0.392
270	3.637	2.950	2.410	1.658	0.973	0.768	0.392
275	3.696	3.002	2.489	1.734	0.990	0.782	0.392
280	3.756	3.054	2.567	1.811	1.028	0.795	0.392
285	3.815	3.107	2.646	1.887	1.099	0.808	0.392
290	3.874	3.159	2.724	1.964	1.170	0.822	0.392
295	3.933	3.211	2.803	2.040	1.240	0.835	0.392
300	3.993	3.264	2.881	2.116	1.311	0.848	0.392
305	4.052	3.316	2.960	2.193	1.382	0.862	0.392
310	4.111	3.369	3.039	2.269	1.452	0.875	0.392
315	4.170	3.421	3.117	2.323	1.523	0.888	0.392
320	4.230	3.473	3.196	2.362	1.593	0.901	0.392
325	4.289	3.526	3.274	2.401	1.664	0.915	0.392
330	4.348	3.578	3.353	2.439	1.735	0.928	0.392

Thickness is intumescent only. Table applies to columns with 4-sided protection. Table also applies to rectangular hollow beams with 4-sided protection up to a maximum protection thickness of 2.890mm.

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Section Factor up to m^{-1}	Table 28: Rectangular Hollow Columns: Fire Resistance Period: 60 Minutes						
	Thickness (mm) Required for a Design Temperature of						
	400°C	450°C	500°C	550°C	600°C	650°C	700°C
35	0.756	0.447	0.392	0.392	0.392	0.392	0.392
40	0.799	0.506	0.395	0.392	0.392	0.392	0.392
45	0.843	0.565	0.445	0.392	0.392	0.392	0.392
50	0.887	0.623	0.494	0.419	0.392	0.392	0.392
55	0.930	0.682	0.537	0.461	0.392	0.392	0.392
60	0.974	0.741	0.580	0.500	0.417	0.392	0.392
65	1.099	0.800	0.623	0.532	0.452	0.392	0.392
70	1.347	0.859	0.666	0.564	0.487	0.392	0.392
75	1.595	0.918	0.708	0.595	0.512	0.416	0.392
80	1.844	0.976	0.751	0.627	0.534	0.444	0.392
85	2.092	1.103	0.794	0.658	0.556	0.472	0.392
90	2.318	1.274	0.837	0.690	0.578	0.498	0.408
95	2.428	1.445	0.880	0.722	0.601	0.515	0.431
100	2.539	1.616	0.923	0.753	0.623	0.533	0.453
105	2.649	1.787	0.966	0.785	0.645	0.550	0.476
110	2.759	1.958	1.029	0.817	0.667	0.568	0.497
115	2.870	2.129	1.173	0.848	0.689	0.585	0.512
120	2.980	2.300	1.318	0.880	0.711	0.603	0.527
125	3.091	2.385	1.462	0.911	0.734	0.621	0.542
130	3.201	2.469	1.607	0.943	0.756	0.638	0.557
135	3.312	2.554	1.751	0.975	0.778	0.656	0.572
140	3.422	2.638	1.896	1.020	0.800	0.673	0.587
145	3.530	2.723	2.040	1.120	0.822	0.691	0.602
150	3.638	2.808	2.184	1.220	0.845	0.708	0.617
155	3.746	2.892	2.320	1.320	0.867	0.726	0.632
160	3.854	2.977	2.422	1.420	0.889	0.743	0.647
165	3.962	3.062	2.524	1.520	0.911	0.761	0.662
170	4.070	3.146	2.626	1.620	0.933	0.779	0.677
175	4.178	3.231	2.728	1.720	0.956	0.796	0.692
180	4.286	3.315	2.830	1.820	0.978	0.814	0.707
185	4.395	3.400	2.931	1.920	1.000	0.831	0.722
190	4.503	3.523	3.033	2.020	1.123	0.849	0.737
195	4.611	3.646	3.135	2.120	1.245	0.866	0.751
200	4.719	3.769	3.237	2.220	1.368	0.884	0.766
205	4.827	3.892	3.339	2.319	1.491	0.902	0.781
210	4.935	4.015	3.446	2.412	1.613	0.919	0.796
215	5.043	4.138	3.560	2.505	1.736	0.937	0.811
220	5.151	4.262	3.674	2.598	1.858	0.954	0.826
225	5.259	4.385	3.789	2.692	1.981	0.972	0.841
230	5.368	4.508	3.903	2.785	2.104	0.989	0.856
235		4.631	4.017	2.878	2.226	1.058	0.860
240		4.754	4.131	2.971	2.355	1.202	0.876
245		4.877	4.246	3.064	2.493	1.347	0.893
250		5.000	4.360	3.158	2.630	1.491	0.909
255		5.123	4.474	3.251	2.768	1.636	0.925
260		5.246	4.589	3.344	2.905	1.780	0.941
265		5.369	4.703	3.453	3.043	1.924	0.958
270			4.817	3.587	3.180	2.069	0.974
275			4.931	3.720	3.318	2.213	0.990
280			5.046	3.853	3.435	2.349	1.074
285			5.160	3.987	3.522	2.471	1.260
290			5.274	4.120	3.609	2.593	1.446
295			5.389	4.253	3.696	2.716	1.631
300				4.387	3.783	2.838	1.817
305				4.520	3.870	2.960	2.003
310				4.653	3.957	3.082	2.189
315				4.787	4.043	3.204	2.374
320				4.920	4.130	3.327	2.560
325				5.053	4.217	3.545	2.746
330				5.187	4.304	3.909	2.931

Thickness is intumescent only. Table applies to columns with 4-sided protection. Table also applies to rectangular hollow beams with 4-sided protection up to a maximum protection thickness of 2.890mm.

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Section Factor up to m^{-1}	Table 29: Rectangular Hollow Columns: Fire Resistance Period: 75 Minutes						
	Thickness (mm) Required for a Design Temperature of						
	400°C	450°C	500°C	550°C	600°C	650°C	700°C
35	2.070	0.821	0.821	0.821	0.821	0.821	0.821
40	2.070	0.821	0.821	0.821	0.821	0.821	0.821
45	2.070	0.821	0.821	0.821	0.821	0.821	0.821
50	2.070	0.825	0.821	0.821	0.821	0.821	0.821
55	2.070	0.908	0.821	0.821	0.821	0.821	0.821
60	2.226	0.990	0.821	0.821	0.821	0.821	0.821
65	2.494	1.255	0.878	0.821	0.821	0.821	0.821
70	2.818	1.546	0.946	0.821	0.821	0.821	0.821
75	3.141	1.836	1.054	0.821	0.821	0.821	0.821
80	3.435	2.126	1.325	0.864	0.821	0.821	0.821
85	3.609	2.388	1.596	0.918	0.821	0.821	0.821
90	3.783	2.608	1.867	0.972	0.821	0.821	0.821
95	3.957	2.828	2.138	1.074	0.821	0.821	0.821
100	4.130	3.048	2.355	1.227	0.840	0.821	0.821
105	4.304	3.268	2.493	1.380	0.882	0.821	0.821
110	4.478	3.454	2.630	1.533	0.924	0.821	0.821
115	4.652	3.590	2.768	1.687	0.966	0.821	0.821
120	4.826	3.725	2.905	1.840	1.035	0.821	0.821
125	5.000	3.861	3.043	1.993	1.211	0.839	0.821
130	5.174	3.997	3.180	2.147	1.386	0.872	0.821
135	5.348	4.132	3.318	2.300	1.562	0.906	0.821
140		4.268	3.459	2.449	1.738	0.940	0.821
145		4.403	3.607	2.597	1.914	0.973	0.821
150		4.539	3.756	2.746	2.089	1.030	0.821
155		4.675	3.904	2.895	2.265	1.181	0.838
160		4.810	4.052	3.043	2.392	1.333	0.865
165		4.946	4.200	3.192	2.506	1.484	0.892
170		5.081	4.348	3.341	2.621	1.635	0.919
175		5.217	4.496	3.467	2.735	1.786	0.946
180		5.353	4.644	3.578	2.850	1.937	0.973
185			4.793	3.689	2.965	2.088	1.000
190			4.941	3.800	3.079	2.240	1.176
195			5.089	3.911	3.194	2.363	1.351
200			5.237	4.022	3.308	2.469	1.527
205			5.385	4.133	3.427	2.575	1.703
210				4.244	3.563	2.681	1.878
215				4.356	3.698	2.787	2.054
220				4.467	3.834	2.892	2.230
225				4.578	3.969	2.998	2.380
230				4.689	4.105	3.104	2.515
235				4.800	4.241	3.210	2.649
240				4.911	4.376	3.315	2.783
245				5.022	4.512	3.438	2.917
250				5.133	4.647	3.629	3.051
255				5.244	4.783	3.819	3.185
260				5.356	4.919	4.010	3.320
265					5.054	4.200	3.480
270					5.190	4.390	3.680
275					5.325	4.581	3.880
280						4.771	4.080
285						4.962	4.280
290						5.152	4.480
295						5.343	4.680
300							4.880
305							5.080
310							5.280

Thickness is intumescent only. Table applies to columns with 4-sided protection. Table also applies to rectangular hollow beams with 4-sided protection up to a maximum protection thickness of 2.890mm.

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Section Factor up to m^{-1}	Table 30: Rectangular Hollow Columns: Fire Resistance Period: 90 Minutes						
	Thickness (mm) Required for a Design Temperature of						
	400°C	450°C	500°C	550°C	600°C	650°C	700°C
35	5.000	2.07	2.07	0.821	0.821	0.821	0.821
40	5.000	2.070	2.070	0.821	0.821	0.821	0.821
45	5.000	2.070	2.070	0.821	0.821	0.821	0.821
50	5.000	2.070	2.070	0.821	0.821	0.821	0.821
55	5.000	2.070	2.070	0.821	0.821	0.821	0.821
60	5.000	2.208	2.070	0.876	0.821	0.821	0.821
65	5.000	2.624	2.106	0.949	0.821	0.821	0.821
70	5.000	3.271	2.268	1.081	0.843	0.821	0.821
75		3.621	2.481	1.352	0.904	0.821	0.821
80		3.897	2.707	1.623	0.964	0.821	0.821
85		4.172	2.934	1.894	1.072	0.821	0.821
90		4.448	3.160	2.165	1.253	0.865	0.821
95		4.724	3.386	2.422	1.433	0.913	0.821
100		5.000	3.572	2.667	1.614	0.962	0.821
105		5.276	3.755	2.911	1.794	1.037	0.821
110			3.938	3.156	1.975	1.223	0.859
115			4.121	3.400	2.156	1.409	0.898
120			4.304	3.508	2.334	1.594	0.938
125			4.487	3.616	2.506	1.780	0.977
130			4.670	3.724	2.678	1.966	1.067
135			4.854	3.832	2.850	2.151	1.233
140			5.037	3.941	3.022	2.328	1.400
145			5.220	4.049	3.194	2.465	1.567
150			5.403	4.157	3.366	2.603	1.733
155				4.265	3.521	2.740	1.900
160				4.373	3.672	2.878	2.067
165				4.481	3.823	3.015	2.233
170				4.589	3.974	3.153	2.400
175				4.697	4.125	3.290	2.567
180				4.805	4.275	3.437	2.733
185				4.914	4.426	3.623	2.900
190				5.022	4.577	3.809	3.067
195				5.130	4.728	3.995	3.233
200				5.238	4.879	4.181	3.400
205				5.346	5.030	4.367	3.611
210				5.454	5.181	4.553	3.821
215					5.332	4.740	4.032
220						4.926	4.242
225						5.112	4.453
230						5.298	4.663
235							4.874
240							5.084
245							5.295

Thickness is intumescent only. Table applies to columns with 4-sided protection. Table also applies to rectangular hollow beams with 4-sided protection up to a maximum protection thickness of 2.890mm.

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Section Factor up to m^{-1}	Table 31: Rectangular Hollow Columns: Fire Resistance Period: 105 Minutes						
	Thickness (mm) Required for a Design Temperature of						
	400°C	450°C	500°C	550°C	600°C	650°C	700°C
35		5.000	3.060	2.070	0.821	0.821	0.821
40		5.000	3.060	2.070	0.821	0.821	0.821
45		5.000	3.060	2.070	0.821	0.821	0.821
50		5.000	3.060	2.070	0.821	0.821	0.821
55		5.000	3.060	2.070	0.821	0.821	0.821
60		5.000	3.100	2.070	0.938	0.821	0.821
65		5.000	3.359	2.215	1.063	0.839	0.821
70			3.686	2.490	1.377	0.903	0.821
75			4.026	2.869	1.691	0.968	0.821
80			4.367	3.248	2.005	1.127	0.856
85			4.707	3.533	2.314	1.382	0.909
90			5.048	3.756	2.550	1.637	0.963
95			5.388	3.978	2.786	1.892	1.053
100				4.200	3.022	2.147	1.232
105				4.422	3.258	2.376	1.410
110				4.644	3.474	2.566	1.588
115				4.867	3.660	2.755	1.766
120				5.089	3.847	2.945	1.944
125				5.311	4.033	3.134	2.122
130					4.219	3.324	2.300
135					4.405	3.504	2.477
140					4.591	3.678	2.655
145					4.777	3.852	2.832
150					4.963	4.026	3.010
155					5.149	4.200	3.187
160					5.335	4.374	3.365
165						4.548	3.583
170						4.722	3.811
175						4.896	4.040
180						5.070	4.269
185						5.243	4.497
190						5.417	4.726
195							4.954
200							5.183
205							5.411

Thickness is intumescent only. Table applies to columns with 4-sided protection. Table also applies to rectangular hollow beams with 4-sided protection up to a maximum protection thickness of 2.890mm.

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Section Factor up to m^{-1}	Table 32: Rectangular Hollow Columns: Fire Resistance Period: 120 Minutes						
	Thickness (mm) Required for a Design Temperature of						
	400°C	450°C	500°C	550°C	600°C	650°C	700°C
35			5.000	3.060	2.070	0.821	0.821
40			5.000	3.060	2.070	0.821	0.821
45			5.000	3.060	2.070	0.821	0.821
50			5.000	3.060	2.070	0.821	0.821
55			5.000	3.060	2.070	0.821	0.821
60			5.000	3.264	2.070	0.985	0.821
65				3.656	2.212	1.271	0.821
70				4.169	2.584	1.601	0.856
75				4.682	3.175	1.930	1.096
80				5.195	3.590	2.260	1.337
85					3.897	2.612	1.578
90					4.203	2.967	1.819
95					4.510	3.322	2.059
100					4.816	3.590	2.300
105					5.123	3.833	2.520
110					5.429	4.076	2.740
115						4.319	2.960
120						4.562	3.180
125						4.805	3.400
130						5.049	3.605
135						5.292	3.810
140							4.015
145							4.221
150							4.426
155							4.631
160							4.836
165							5.041
170							5.246

Thickness is intumescent only. Table applies to columns with all round protection. Table also applies to rectangular hollow beams with 4-sided protection up to a maximum protection thickness of 2.890mm.

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Table 33: Circular Hollow Columns: 15 Minutes							
Section Factor up to m^{-1}	Thickness (mm) Required for a Design Temperature of						
	400°C	450°C	500°C	550°C	600°C	650°C	700°C
35	0.392	0.392	0.392	0.392	0.392	0.392	0.392
40	0.392	0.392	0.392	0.392	0.392	0.392	0.392
45	0.392	0.392	0.392	0.392	0.392	0.392	0.392
50	0.392	0.392	0.392	0.392	0.392	0.392	0.392
55	0.392	0.392	0.392	0.392	0.392	0.392	0.392
60	0.392	0.392	0.392	0.392	0.392	0.392	0.392
65	0.392	0.392	0.392	0.392	0.392	0.392	0.392
70	0.392	0.392	0.392	0.392	0.392	0.392	0.392
75	0.392	0.392	0.392	0.392	0.392	0.392	0.392
80	0.392	0.392	0.392	0.392	0.392	0.392	0.392
85	0.392	0.392	0.392	0.392	0.392	0.392	0.392
90	0.392	0.392	0.392	0.392	0.392	0.392	0.392
95	0.392	0.392	0.392	0.392	0.392	0.392	0.392
100	0.392	0.392	0.392	0.392	0.392	0.392	0.392
105	0.392	0.392	0.392	0.392	0.392	0.392	0.392
110	0.392	0.392	0.392	0.392	0.392	0.392	0.392
115	0.392	0.392	0.392	0.392	0.392	0.392	0.392
120	0.392	0.392	0.392	0.392	0.392	0.392	0.392
125	0.392	0.392	0.392	0.392	0.392	0.392	0.392
130	0.392	0.392	0.392	0.392	0.392	0.392	0.392
135	0.392	0.392	0.392	0.392	0.392	0.392	0.392
140	0.392	0.392	0.392	0.392	0.392	0.392	0.392
145	0.392	0.392	0.392	0.392	0.392	0.392	0.392
150	0.392	0.392	0.392	0.392	0.392	0.392	0.392
155	0.392	0.392	0.392	0.392	0.392	0.392	0.392
160	0.392	0.392	0.392	0.392	0.392	0.392	0.392
165	0.392	0.392	0.392	0.392	0.392	0.392	0.392
170	0.392	0.392	0.392	0.392	0.392	0.392	0.392
175	0.392	0.392	0.392	0.392	0.392	0.392	0.392
180	0.392	0.392	0.392	0.392	0.392	0.392	0.392
185	0.392	0.392	0.392	0.392	0.392	0.392	0.392
190	0.392	0.392	0.392	0.392	0.392	0.392	0.392
195	0.392	0.392	0.392	0.392	0.392	0.392	0.392
200	0.392	0.392	0.392	0.392	0.392	0.392	0.392
205	0.392	0.392	0.392	0.392	0.392	0.392	0.392
210	0.392	0.392	0.392	0.392	0.392	0.392	0.392
215	0.392	0.392	0.392	0.392	0.392	0.392	0.392
220	0.392	0.392	0.392	0.392	0.392	0.392	0.392
225	0.392	0.392	0.392	0.392	0.392	0.392	0.392
230	0.392	0.392	0.392	0.392	0.392	0.392	0.392
235	0.392	0.392	0.392	0.392	0.392	0.392	0.392
240	0.392	0.392	0.392	0.392	0.392	0.392	0.392
245	0.392	0.392	0.392	0.392	0.392	0.392	0.392
250	0.392	0.392	0.392	0.392	0.392	0.392	0.392
255	0.392	0.392	0.392	0.392	0.392	0.392	0.392
260	0.392	0.392	0.392	0.392	0.392	0.392	0.392
265	0.392	0.392	0.392	0.392	0.392	0.392	0.392
270	0.392	0.392	0.392	0.392	0.392	0.392	0.392
275	0.392	0.392	0.392	0.392	0.392	0.392	0.392
280	0.392	0.392	0.392	0.392	0.392	0.392	0.392
285	0.392	0.392	0.392	0.392	0.392	0.392	0.392
290	0.392	0.392	0.392	0.392	0.392	0.392	0.392
295	0.392	0.392	0.392	0.392	0.392	0.392	0.392
300	0.392	0.392	0.392	0.392	0.392	0.392	0.392
305	0.392	0.392	0.392	0.392	0.392	0.392	0.392
310	0.392	0.392	0.392	0.392	0.392	0.392	0.392
315	0.392	0.392	0.392	0.392	0.392	0.392	0.392
320	0.392	0.392	0.392	0.392	0.392	0.392	0.392
325	0.392	0.392	0.392	0.392	0.392	0.392	0.392
330	0.392	0.392	0.392	0.392	0.392	0.392	0.392

Thickness is intumescent only. Table applies to columns with all round protection.

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Table 34: Circular Hollow Columns: 30 Minutes							
Section Factor up to m^{-1}	Thickness (mm) Required for a Design Temperature of						
	400°C	450°C	500°C	550°C	600°C	650°C	700°C
35	0.392	0.392	0.392	0.392	0.392	0.392	0.392
40	0.392	0.392	0.392	0.392	0.392	0.392	0.392
45	0.392	0.392	0.392	0.392	0.392	0.392	0.392
50	0.392	0.392	0.392	0.392	0.392	0.392	0.392
55	0.392	0.392	0.392	0.392	0.392	0.392	0.392
60	0.392	0.392	0.392	0.392	0.392	0.392	0.392
65	0.392	0.392	0.392	0.392	0.392	0.392	0.392
70	0.392	0.392	0.392	0.392	0.392	0.392	0.392
75	0.392	0.392	0.392	0.392	0.392	0.392	0.392
80	0.411	0.392	0.392	0.392	0.392	0.392	0.392
85	0.432	0.392	0.392	0.392	0.392	0.392	0.392
90	0.453	0.392	0.392	0.392	0.392	0.392	0.392
95	0.473	0.392	0.392	0.392	0.392	0.392	0.392
100	0.494	0.394	0.392	0.392	0.392	0.392	0.392
105	0.515	0.413	0.392	0.392	0.392	0.392	0.392
110	0.536	0.431	0.392	0.392	0.392	0.392	0.392
115	0.556	0.450	0.392	0.392	0.392	0.392	0.392
120	0.577	0.468	0.392	0.392	0.392	0.392	0.392
125	0.598	0.487	0.392	0.392	0.392	0.392	0.392
130	0.618	0.505	0.392	0.392	0.392	0.392	0.392
135	0.639	0.524	0.392	0.392	0.392	0.392	0.392
140	0.659	0.542	0.392	0.392	0.392	0.392	0.392
145	0.680	0.560	0.392	0.392	0.392	0.392	0.392
150	0.701	0.579	0.392	0.392	0.392	0.392	0.392
155	0.721	0.597	0.404	0.392	0.392	0.392	0.392
160	0.742	0.616	0.421	0.392	0.392	0.392	0.392
165	0.762	0.634	0.438	0.392	0.392	0.392	0.392
170	0.783	0.652	0.454	0.392	0.392	0.392	0.392
175	0.803	0.671	0.471	0.392	0.392	0.392	0.392
180	0.824	0.689	0.488	0.392	0.392	0.392	0.392
185	0.844	0.707	0.504	0.392	0.392	0.392	0.392
190	0.865	0.725	0.521	0.392	0.392	0.392	0.392
195	0.885	0.744	0.537	0.392	0.392	0.392	0.392
200	0.906	0.762	0.554	0.392	0.392	0.392	0.392
205	0.926	0.780	0.570	0.392	0.392	0.392	0.392
210	0.946	0.799	0.587	0.398	0.392	0.392	0.392
215	0.967	0.817	0.604	0.415	0.392	0.392	0.392
220	0.987	0.835	0.620	0.432	0.392	0.392	0.392
225	1.007	0.853	0.637	0.450	0.392	0.392	0.392
230	1.028	0.871	0.653	0.467	0.392	0.392	0.392
235	1.048	0.890	0.670	0.484	0.392	0.392	0.392
240	1.068	0.908	0.686	0.501	0.392	0.392	0.392
245	1.089	0.926	0.703	0.518	0.392	0.392	0.392
250	1.109	0.944	0.719	0.535	0.392	0.392	0.392
255	1.129	0.962	0.736	0.552	0.392	0.392	0.392
260	1.150	0.980	0.752	0.569	0.392	0.392	0.392
265	1.170	0.998	0.768	0.587	0.392	0.392	0.392
270	1.190	1.017	0.785	0.604	0.392	0.392	0.392
275	1.210	1.035	0.801	0.621	0.392	0.392	0.392
280	1.231	1.053	0.818	0.638	0.401	0.401	0.401
285	1.251	1.071	0.834	0.655	0.415	0.415	0.415
290	1.271	1.089	0.851	0.672	0.429	0.429	0.429
295	1.291	1.107	0.867	0.689	0.443	0.443	0.443
300	1.311	1.125	0.883	0.706	0.457	0.457	0.457
305	1.331	1.143	0.900	0.723	0.472	0.472	0.472
310	1.351	1.161	0.916	0.740	0.486	0.486	0.486
315	1.372	1.179	0.932	0.757	0.500	0.494	0.494
320	1.392	1.197	0.949	0.774	0.514	0.494	0.494
325	1.412	1.215	0.965	0.791	0.528	0.494	0.494
330	1.432	1.233	0.981	0.808	0.542	0.494	0.494

Thickness is intumescent only. Table applies to columns with all round protection.

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Table 35: Circular Hollow Columns: 45 Minutes							
Section Factor up to m^{-1}	Thickness (mm) Required for a Design Temperature of						
	400°C	450°C	500°C	550°C	600°C	650°C	700°C
35	0.392	0.392	0.392	0.392	0.392	0.392	0.392
40	0.392	0.392	0.392	0.392	0.392	0.392	0.392
45	0.411	0.392	0.392	0.392	0.392	0.392	0.392
50	0.457	0.406	0.392	0.392	0.392	0.392	0.392
55	0.503	0.443	0.392	0.392	0.392	0.392	0.392
60	0.550	0.480	0.392	0.392	0.392	0.392	0.392
65	0.596	0.517	0.401	0.392	0.392	0.392	0.392
70	0.642	0.553	0.430	0.392	0.392	0.392	0.392
75	0.688	0.590	0.459	0.392	0.392	0.392	0.392
80	0.734	0.626	0.488	0.392	0.392	0.392	0.392
85	0.779	0.662	0.517	0.412	0.392	0.392	0.392
90	0.825	0.699	0.547	0.440	0.392	0.392	0.392
95	0.871	0.735	0.576	0.467	0.392	0.392	0.392
100	0.917	0.771	0.605	0.494	0.392	0.392	0.392
105	0.962	0.807	0.634	0.521	0.392	0.392	0.392
110	1.008	0.844	0.663	0.549	0.413	0.392	0.392
115	1.053	0.880	0.692	0.576	0.436	0.392	0.392
120	1.098	0.916	0.721	0.603	0.458	0.392	0.392
125	1.144	0.952	0.750	0.630	0.481	0.392	0.392
130	1.189	0.988	0.779	0.657	0.503	0.392	0.392
135	1.234	1.024	0.808	0.684	0.526	0.392	0.392
140	1.279	1.060	0.836	0.711	0.548	0.392	0.392
145	1.324	1.096	0.865	0.738	0.571	0.401	0.392
150	1.369	1.131	0.894	0.765	0.593	0.422	0.392
155	1.414	1.167	0.923	0.792	0.615	0.443	0.392
160	1.459	1.203	0.952	0.819	0.638	0.464	0.392
165	1.503	1.238	0.980	0.846	0.660	0.486	0.392
170	1.548	1.274	1.009	0.873	0.682	0.507	0.392
175	1.592	1.310	1.038	0.900	0.705	0.528	0.392
180	1.637	1.345	1.066	0.927	0.727	0.549	0.392
185	1.681	1.381	1.095	0.954	0.749	0.571	0.392
190	1.726	1.416	1.123	0.980	0.772	0.592	0.392
195	1.770	1.452	1.152	1.007	0.794	0.613	0.392
200	1.814	1.487	1.181	1.034	0.816	0.634	0.404
205	1.858	1.522	1.209	1.061	0.838	0.655	0.421
210	1.902	1.558	1.238	1.087	0.861	0.676	0.437
215	1.950	1.593	1.266	1.114	0.883	0.697	0.454
220	2.002	1.628	1.294	1.141	0.905	0.719	0.471
225	2.055	1.663	1.323	1.167	0.927	0.740	0.487
230	2.107	1.698	1.351	1.194	0.949	0.761	0.504
235	2.159	1.733	1.379	1.220	0.971	0.782	0.521
240	2.211	1.768	1.408	1.247	0.994	0.803	0.538
245	2.263	1.803	1.436	1.274	1.016	0.824	0.554
250	2.315	1.838	1.464	1.300	1.038	0.845	0.571
255	2.367	1.873	1.492	1.326	1.060	0.866	0.588
260	2.418	1.908	1.521	1.353	1.082	0.887	0.604
265	2.470	1.954	1.549	1.379	1.104	0.908	0.621
270	2.521	2.018	1.577	1.406	1.126	0.929	0.638
275	2.573	2.081	1.605	1.432	1.148	0.950	0.654
280	2.624	2.144	1.633	1.459	1.170	0.971	0.671
285	2.675	2.207	1.661	1.485	1.192	0.991	0.687
290	2.726	2.270	1.689	1.511	1.214	1.012	0.704
295	2.777	2.333	1.717	1.537	1.236	1.033	0.721
300	2.828	2.395	1.745	1.564	1.258	1.054	0.737
305	2.878	2.458	1.773	1.590	1.280	1.075	0.754
310	2.929	2.520	1.801	1.616	1.301	1.096	0.770
315	2.980	2.582	1.829	1.642	1.323	1.117	0.787
320	3.030	2.644	1.856	1.668	1.345	1.137	0.803
325	3.080	2.706	1.884	1.695	1.367	1.158	0.820
330	3.131	2.768	1.912	1.721	1.389	1.179	0.836

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Table 36: Circular Hollow Columns: 60 Minutes							
Section Factor up to m^{-1}	Thickness (mm) Required for a Design Temperature of						
	400°C	450°C	500°C	550°C	600°C	650°C	700°C
35	1.742	0.425	0.392	0.392	0.392	0.392	0.392
40	1.742	0.512	0.392	0.392	0.392	0.392	0.392
45	1.742	0.597	0.437	0.392	0.392	0.392	0.392
50	1.742	0.682	0.494	0.420	0.392	0.392	0.392
55	1.742	0.767	0.551	0.461	0.392	0.392	0.392
60	1.742	0.851	0.608	0.503	0.419	0.392	0.392
65	1.742	0.936	0.665	0.544	0.453	0.392	0.392
70	1.742	1.020	0.721	0.585	0.487	0.392	0.392
75	1.742	1.104	0.778	0.625	0.521	0.410	0.392
80	1.742	1.187	0.834	0.666	0.555	0.440	0.392
85	1.742	1.271	0.890	0.707	0.589	0.470	0.392
90	1.742	1.354	0.947	0.748	0.624	0.500	0.408
95	1.742	1.437	1.003	0.789	0.658	0.530	0.431
100	1.820	1.519	1.059	0.829	0.692	0.560	0.454
105	1.929	1.602	1.115	0.870	0.726	0.590	0.476
110	2.037	1.684	1.170	0.910	0.759	0.620	0.499
115	2.144	1.766	1.226	0.951	0.793	0.650	0.521
120	2.252	1.847	1.282	0.991	0.827	0.680	0.544
125	2.358	1.929	1.337	1.032	0.861	0.710	0.566
130	2.465	2.031	1.392	1.072	0.895	0.740	0.589
135	2.570	2.132	1.447	1.112	0.928	0.770	0.611
140	2.676	2.233	1.503	1.152	0.962	0.800	0.634
145	2.781	2.334	1.558	1.192	0.996	0.830	0.656
150	2.885	2.435	1.612	1.233	1.029	0.860	0.679
155	2.990	2.535	1.667	1.273	1.063	0.889	0.701
160	3.093	2.634	1.722	1.313	1.097	0.919	0.723
165	3.197	2.734	1.777	1.352	1.130	0.949	0.746
170	3.299	2.832	1.831	1.392	1.163	0.978	0.768
175	3.390	2.931	1.885	1.432	1.197	1.008	0.790
180	3.473	3.029	1.949	1.472	1.230	1.038	0.813
185	3.556	3.127	2.051	1.512	1.264	1.067	0.835
190	3.638	3.224	2.153	1.551	1.297	1.097	0.857
195	3.721	3.321	2.254	1.591	1.330	1.126	0.880
200	3.802	3.392	2.354	1.630	1.363	1.156	0.902
205	3.884	3.456	2.455	1.670	1.397	1.185	0.924
210	3.965	3.520	2.555	1.709	1.430	1.215	0.946
215	4.046	3.584	2.654	1.748	1.463	1.244	0.969
220	4.127	3.648	2.753	1.788	1.496	1.273	0.991
225	4.207	3.711	2.852	1.827	1.529	1.303	1.013
230	4.287	3.775	2.951	1.866	1.562	1.332	1.035
235	4.367	3.838	3.049	1.905	1.595	1.361	1.057
240	4.447	3.901	3.146	1.995	1.628	1.390	1.079
245	4.526	3.964	3.244	2.158	1.661	1.420	1.101
250	4.605	4.026	3.340	2.321	1.693	1.449	1.123
255	4.684	4.089	3.423	2.483	1.726	1.478	1.146
260	4.762	4.151	3.505	2.644	1.759	1.507	1.168
265	4.840	4.213	3.587	2.804	1.792	1.536	1.190
270	4.918	4.275	3.668	2.963	1.824	1.565	1.212
275	4.996	4.337	3.749	3.121	1.857	1.594	1.234
280	5.073	4.399	3.830	3.278	1.890	1.623	1.256
285	5.150	4.460	3.911	3.401	1.922	1.652	1.278
290	5.226	4.522	3.991	3.500	2.085	1.681	1.300
295	5.303	4.583	4.072	3.600	2.279	1.710	1.321
300	5.379	4.644	4.151	3.699	2.472	1.739	1.343
305	5.455	4.705	4.231	3.798	2.663	1.768	1.365
310		4.765	4.310	3.896	2.853	1.797	1.387
315		4.826	4.389	3.993	3.042	1.825	1.409
320		4.886	4.468	4.091	3.229	1.854	1.431
325		4.946	4.546	4.188	3.375	1.883	1.453
330		5.006	4.625	4.284	3.460	1.912	1.475

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Table 37: Circular Hollow Columns: 75 Minutes							
Section Factor up to m^{-1}	Thickness (mm) Required for a Design Temperature of						
	400°C	450°C	500°C	550°C	600°C	650°C	700°C
35	2.070	0.821	0.821	0.821	0.821	0.821	0.821
40	2.070	0.821	0.821	0.821	0.821	0.821	0.821
45	2.070	0.821	0.821	0.821	0.821	0.821	0.821
50	2.070	0.825	0.821	0.821	0.821	0.821	0.821
55	2.070	0.908	0.821	0.821	0.821	0.821	0.821
60	2.226	0.990	0.821	0.821	0.821	0.821	0.821
65	2.494	1.255	0.878	0.821	0.821	0.821	0.821
70	2.818	1.546	0.946	0.821	0.821	0.821	0.821
75	3.141	1.836	1.054	0.821	0.821	0.821	0.821
80	3.435	2.126	1.325	0.864	0.821	0.821	0.821
85	3.609	2.388	1.596	0.918	0.821	0.821	0.821
90	3.783	2.608	1.867	0.972	0.821	0.821	0.821
95	3.957	2.828	2.138	1.074	0.821	0.821	0.821
100	4.130	3.048	2.355	1.227	0.840	0.821	0.821
105	4.304	3.268	2.493	1.380	0.882	0.821	0.821
110	4.478	3.454	2.630	1.533	0.924	0.821	0.821
115	4.652	3.590	2.768	1.687	0.966	0.821	0.821
120	4.826	3.725	2.905	1.840	1.035	0.821	0.821
125	5.000	3.861	3.043	1.993	1.211	0.839	0.821
130	5.174	3.997	3.180	2.147	1.386	0.872	0.821
135	5.348	4.132	3.318	2.300	1.562	0.906	0.821
140		4.268	3.459	2.449	1.738	0.940	0.821
145		4.403	3.607	2.597	1.914	0.973	0.821
150		4.539	3.756	2.746	2.089	1.030	0.821
155		4.675	3.904	2.895	2.265	1.181	0.838
160		4.810	4.052	3.043	2.392	1.333	0.865
165		4.946	4.200	3.192	2.506	1.484	0.892
170		5.081	4.348	3.341	2.621	1.635	0.919
175		5.217	4.496	3.467	2.735	1.786	0.946
180		5.353	4.644	3.578	2.850	1.937	0.973
185			4.793	3.689	2.965	2.088	1.000
190			4.941	3.800	3.079	2.240	1.176
195			5.089	3.911	3.194	2.363	1.351
200			5.237	4.022	3.308	2.469	1.527
205			5.385	4.133	3.427	2.575	1.703
210				4.244	3.563	2.681	1.878
215				4.356	3.698	2.787	2.054
220				4.467	3.834	2.892	2.230
225				4.578	3.969	2.998	2.380
230				4.689	4.105	3.104	2.515
235				4.800	4.241	3.210	2.649
240				4.911	4.376	3.315	2.783
245				5.022	4.512	3.438	2.917
250				5.133	4.647	3.629	3.051
255				5.244	4.783	3.819	3.185
260				5.356	4.919	4.010	3.320
265					5.054	4.200	3.480
270					5.190	4.390	3.680
275					5.325	4.581	3.880
280						4.771	4.080
285						4.962	4.280
290						5.152	4.480
295						5.343	4.680
300							4.880
305							5.080
310							5.280

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Table 38: Circular Hollow Columns: 90 Minutes

Section Factor up to m^{-1}	Thickness (mm) Required for a Design Temperature of						
	400°C	450°C	500°C	550°C	600°C	650°C	700°C
35	5.000	2.07	2.07	0.821	0.821	0.821	0.821
40	5.000	2.070	2.070	0.821	0.821	0.821	0.821
45	5.000	2.070	2.070	0.821	0.821	0.821	0.821
50	5.000	2.070	2.070	0.821	0.821	0.821	0.821
55	5.000	2.070	2.070	0.821	0.821	0.821	0.821
60	5.000	2.208	2.070	0.876	0.821	0.821	0.821
65	5.000	2.624	2.106	0.949	0.821	0.821	0.821
70	5.000	3.271	2.268	1.081	0.843	0.821	0.821
75		3.621	2.481	1.352	0.904	0.821	0.821
80		3.897	2.707	1.623	0.964	0.821	0.821
85		4.172	2.934	1.894	1.072	0.821	0.821
90		4.448	3.160	2.165	1.253	0.865	0.821
95		4.724	3.386	2.422	1.433	0.913	0.821
100		5.000	3.572	2.667	1.614	0.962	0.821
105		5.276	3.755	2.911	1.794	1.037	0.821
110			3.938	3.156	1.975	1.223	0.859
115			4.121	3.400	2.156	1.409	0.898
120			4.304	3.508	2.334	1.594	0.938
125			4.487	3.616	2.506	1.780	0.977
130			4.670	3.724	2.678	1.966	1.067
135			4.854	3.832	2.850	2.151	1.233
140			5.037	3.941	3.022	2.328	1.400
145			5.220	4.049	3.194	2.465	1.567
150			5.403	4.157	3.366	2.603	1.733
155				4.265	3.521	2.740	1.900
160				4.373	3.672	2.878	2.067
165				4.481	3.823	3.015	2.233
170				4.589	3.974	3.153	2.400
175				4.697	4.125	3.290	2.567
180				4.805	4.275	3.437	2.733
185				4.914	4.426	3.623	2.900
190				5.022	4.577	3.809	3.067
195				5.130	4.728	3.995	3.233
200				5.238	4.879	4.181	3.400
205				5.346	5.030	4.367	3.611
210				5.454	5.181	4.553	3.821
215					5.332	4.740	4.032
220						4.926	4.242
225						5.112	4.453
230						5.298	4.663
235							4.874
240							5.084
245							5.295

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Table 39: Circular Hollow Columns: 105 Minutes

Section Factor up to m^{-1}	Thickness (mm) Required for a Design Temperature of						
	400°C	450°C	500°C	550°C	600°C	650°C	700°C
35		5.000	3.060	2.070	0.821	0.821	0.821
40		5.000	3.060	2.070	0.821	0.821	0.821
45		5.000	3.060	2.070	0.821	0.821	0.821
50		5.000	3.060	2.070	0.821	0.821	0.821
55		5.000	3.060	2.070	0.821	0.821	0.821
60		5.000	3.100	2.070	0.938	0.821	0.821
65		5.000	3.359	2.215	1.063	0.839	0.821
70			3.686	2.490	1.377	0.903	0.821
75			4.026	2.869	1.691	0.968	0.821
80			4.367	3.248	2.005	1.127	0.856
85			4.707	3.533	2.314	1.382	0.909
90			5.048	3.756	2.550	1.637	0.963
95			5.388	3.978	2.786	1.892	1.053
100				4.200	3.022	2.147	1.232
105				4.422	3.258	2.376	1.410
110				4.644	3.474	2.566	1.588
115				4.867	3.660	2.755	1.766
120				5.089	3.847	2.945	1.944
125				5.311	4.033	3.134	2.122
130					4.219	3.324	2.300
135					4.405	3.504	2.477
140					4.591	3.678	2.655
145					4.777	3.852	2.832
150					4.963	4.026	3.010
155					5.149	4.200	3.187
160					5.335	4.374	3.365
165						4.548	3.583
170						4.722	3.811
175						4.896	4.040
180						5.070	4.269
185						5.243	4.497
190						5.417	4.726
195							4.954
200							5.183
205							5.411

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Table 40: Circular Hollow Columns: 120 Minutes							
Section Factor up to m^{-1}	Thickness (mm) Required for a Design Temperature of						
	400°C	450°C	500°C	550°C	600°C	650°C	700°C
35			5.000	3.060	2.070	0.821	0.821
40			5.000	3.060	2.070	0.821	0.821
45			5.000	3.060	2.070	0.821	0.821
50			5.000	3.060	2.070	0.821	0.821
55			5.000	3.060	2.070	0.821	0.821
60			5.000	3.264	2.070	0.985	0.821
65				3.656	2.212	1.271	0.821
70				4.169	2.584	1.601	0.856
75				4.682	3.175	1.930	1.096
80				5.195	3.590	2.260	1.337
85					3.897	2.612	1.578
90					4.203	2.967	1.819
95					4.510	3.322	2.059
100					4.816	3.590	2.300
105					5.123	3.833	2.520
110					5.429	4.076	2.740
115						4.319	2.960
120						4.562	3.180
125						4.805	3.400
130						5.049	3.605
135						5.292	3.810
140							4.015
145							4.221
150							4.426
155							4.631
160							4.836
165							5.041
170							5.246

Thickness is intumescent only. Table applies to columns with all round protection.

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