CERTIFICATE OF APPROVAL
No CF 5300

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

SHERWIN-WILLIAMS PROTECTIVE & MARINE COATINGS

Tower Works, Kestor Street, Bolton, BL2 2AL
Tel: 01204 521771

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 FX6000	TS 15 INTUMESCENT COATINGS FOR STEELWORK

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

Paul Duggan
Certification Manager

Issued: 13th October 2015
Reissued: 17th September 2019
Valid to: 31st March 2020

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SHERWIN-WILLIAMS PROTECTIVE & MARINE COATINGS

FIRETEX FX6000

1. This approval relates to the use of FIRETEX FX6000 for the fire protection of I-shaped and hollow steel sections. The precise scope is given in Tables 1 to 29 which show the total dry film thickness of FIRETEX FX6000 (excluding primer and top sealer) required to provide fire resistance periods in accordance with BS476: Part 21: 1987 up to 120 minutes for I and H beams and columns and up to 105 minutes for rectangular and circular hollow columns, and up to 90 minutes for rectangular hollow section beams.

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 system to ISO 9001: 2008.
   iv) Inspection and surveillance of factory production control
   v) Audit testing

4. The data referring to three-sided fire exposure of beams relate to beams supporting concrete floor slabs. Separate consideration is required where this is not the case.

5. The data shown is applicable to steel sections blast cleaned to Swedish Standard SA2.5 or equivalent and primed with a suitable and compatible primer. Specifications of surface preparations, primers and top sealers is available from SHERWIN-WILLIAMS PROTECTIVE & MARINE COATINGS whose responsibility is to ensure that FIRETEX FX6000 is compatible for use in respect of both ambient and fire conditions. The total dry film thickness of primer and top sealer should not exceed that tested.

6. The data shown is applicable to FIRETEX FX6000 applied by spray to horizontal, vertical, flexural and compression members supporting loads up to the maximum design loads specified in BS449: Part 2.

7. The approval relates to ongoing 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.

8. The data shown in the tables is based on assessments which comply with the criteria for acceptability now incorporated within the CERTIFIRE scheme.

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FIRETEX FX6000

Table 1: I-Beam Sections 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	575°C	600°C	620°C	650°C	700°C	750°C
30	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349
35	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349
40	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349
45	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349
50	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349
55	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349
60	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349
65	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349
70	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349
75	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349
80	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349
85	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349
90	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349
95	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349
100	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349
105	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349
110	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349
115	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349
120	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349
125	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349
130	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349
135	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349
140	0.352	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349
145	0.374	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349
150	0.396	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349
155	0.417	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349
160	0.439	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349
165	0.461	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349
170	0.483	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349
175	0.505	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349
180	0.526	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349
185	0.548	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349
190	0.570	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349
195	0.592	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349
200	0.614	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349
205	0.635	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349
210	0.657	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349
215	0.679	0.360	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349
220	0.701	0.376	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349
225	0.723	0.392	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349
230	0.744	0.408	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349
235	0.766	0.424	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349
240	0.788	0.440	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349
245	0.810	0.456	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349
250	0.832	0.472	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349
255	0.853	0.488	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349
260	0.875	0.504	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349
265	0.897	0.520	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349
270	0.919	0.535	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349
275	0.941	0.551	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349
280	0.962	0.567	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349
285	0.984	0.583	0.359	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349
290	1.006	0.599	0.371	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349
295	1.028	0.615	0.383	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349
300	1.050	0.631	0.395	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349
305	1.071	0.647	0.408	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349
310	1.093	0.663	0.420	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349

Thickness is intumescent only. Results apply to I-section beams with concrete slabs with 3 sided fire exposure.

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Table 2: I-Beam Sections 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	575°C	600°C	620°C	650°C	700°C	750°C
30	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349
35	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349
40	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349
45	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349
50	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349
55	0.361	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349
60	0.429	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349
65	0.498	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349
70	0.567	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349
75	0.635	0.360	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349
80	0.704	0.389	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349
85	0.773	0.418	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349
90	0.842	0.447	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349
95	0.910	0.476	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349
100	0.979	0.506	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349
105	1.048	0.535	0.362	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349
110	1.116	0.564	0.386	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349
115	1.185	0.593	0.409	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349
120	1.254	0.622	0.432	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349
125	1.322	0.651	0.456	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349
130	1.391	0.681	0.479	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349
135	1.460	0.710	0.502	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349
140	1.529	0.739	0.526	0.351	0.349	0.349	0.349	0.349	0.349	0.349	0.349
145	1.594	0.768	0.549	0.372	0.349	0.349	0.349	0.349	0.349	0.349	0.349
150	1.634	0.797	0.572	0.392	0.349	0.349	0.349	0.349	0.349	0.349	0.349
155	1.674	0.826	0.596	0.413	0.349	0.349	0.349	0.349	0.349	0.349	0.349
160	1.714	0.856	0.619	0.433	0.349	0.349	0.349	0.349	0.349	0.349	0.349
165	1.754	0.885	0.642	0.454	0.349	0.349	0.349	0.349	0.349	0.349	0.349
170	1.793	0.914	0.666	0.474	0.349	0.349	0.349	0.349	0.349	0.349	0.349
175	1.833	0.943	0.689	0.495	0.349	0.349	0.349	0.349	0.349	0.349	0.349
180	1.873	0.972	0.712	0.515	0.349	0.349	0.349	0.349	0.349	0.349	0.349
185	1.913	1.001	0.736	0.536	0.360	0.349	0.349	0.349	0.349	0.349	0.349
190	1.953	1.031	0.759	0.556	0.378	0.349	0.349	0.349	0.349	0.349	0.349
195	1.993	1.060	0.783	0.577	0.396	0.349	0.349	0.349	0.349	0.349	0.349
200	2.033	1.089	0.806	0.597	0.414	0.364	0.349	0.349	0.349	0.349	0.349
205	2.072	1.118	0.829	0.618	0.432	0.381	0.349	0.349	0.349	0.349	0.349
210	2.112	1.147	0.853	0.638	0.450	0.397	0.350	0.349	0.349	0.349	0.349
215	2.152	1.177	0.876	0.659	0.469	0.414	0.365	0.349	0.349	0.349	0.349
220	2.192	1.206	0.899	0.679	0.487	0.431	0.380	0.349	0.349	0.349	0.349
225	2.232	1.235	0.923	0.700	0.505	0.447	0.395	0.355	0.349	0.349	0.349
230	2.272	1.264	0.946	0.720	0.523	0.464	0.410	0.369	0.349	0.349	0.349
235	2.311	1.293	0.969	0.741	0.541	0.480	0.425	0.383	0.349	0.349	0.349
240	2.351	1.322	0.993	0.761	0.560	0.497	0.440	0.397	0.349	0.349	0.349
245	2.391	1.352	1.016	0.781	0.578	0.513	0.455	0.410	0.349	0.349	0.349
250	2.431	1.381	1.039	0.802	0.596	0.530	0.470	0.424	0.355	0.349	0.349
255	2.471	1.410	1.063	0.822	0.614	0.546	0.485	0.438	0.367	0.349	0.349
260	2.511	1.439	1.086	0.843	0.632	0.563	0.500	0.452	0.380	0.349	0.349
265	2.551	1.468	1.109	0.863	0.651	0.580	0.515	0.466	0.392	0.349	0.349
270	2.590	1.497	1.133	0.884	0.669	0.596	0.530	0.480	0.404	0.349	0.349
275	2.630	1.527	1.156	0.904	0.687	0.613	0.545	0.494	0.417	0.349	0.349
280	2.670	1.556	1.179	0.925	0.705	0.629	0.560	0.507	0.429	0.349	0.349
285	2.710	1.585	1.203	0.945	0.723	0.646	0.575	0.521	0.441	0.349	0.349
290	2.750	1.628	1.226	0.966	0.741	0.662	0.590	0.535	0.454	0.349	0.349
295	2.790	1.675	1.249	0.986	0.760	0.679	0.606	0.549	0.466	0.349	0.349
300	2.829	1.722	1.273	1.007	0.778	0.696	0.621	0.563	0.478	0.349	0.349
305	2.869	1.768	1.296	1.027	0.796	0.712	0.636	0.577	0.491	0.349	0.349
310	2.909	1.815	1.319	1.048	0.814	0.729	0.651	0.591	0.503	0.349	0.349

Thickness is intumescent only. Results apply to I-section beams with concrete slabs with 3 sided fire exposure.

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Table 3: I-Beam Sections 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	575°C	600°C	620°C	650°C	700°C	750°C
30	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349
35	0.465	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349
40	0.692	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349
45	0.919	0.384	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349
50	1.146	0.474	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349
55	1.373	0.563	0.357	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349
60	1.593	0.652	0.405	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349
65	1.663	0.742	0.453	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349
70	1.733	0.831	0.501	0.370	0.349	0.349	0.349	0.349	0.349	0.349	0.349
75	1.803	0.920	0.548	0.398	0.349	0.349	0.349	0.349	0.349	0.349	0.349
80	1.874	1.010	0.596	0.427	0.349	0.349	0.349	0.349	0.349	0.349	0.349
85	1.944	1.099	0.644	0.455	0.361	0.349	0.349	0.349	0.349	0.349	0.349
90	2.014	1.188	0.692	0.483	0.386	0.349	0.349	0.349	0.349	0.349	0.349
95	2.084	1.278	0.740	0.512	0.411	0.367	0.349	0.349	0.349	0.349	0.349
100	2.154	1.367	0.788	0.540	0.436	0.390	0.349	0.349	0.349	0.349	0.349
105	2.224	1.456	0.835	0.569	0.461	0.413	0.365	0.349	0.349	0.349	0.349
110	2.294	1.545	0.883	0.597	0.486	0.437	0.387	0.349	0.349	0.349	0.349
115	2.365	1.611	0.931	0.625	0.511	0.460	0.409	0.369	0.349	0.349	0.349
120	2.435	1.653	0.979	0.654	0.536	0.483	0.431	0.389	0.349	0.349	0.349
125	2.505	1.694	1.027	0.682	0.561	0.507	0.453	0.410	0.349	0.349	0.349
130	2.575	1.736	1.075	0.711	0.586	0.530	0.475	0.431	0.360	0.349	0.349
135	2.645	1.777	1.122	0.739	0.610	0.553	0.497	0.452	0.379	0.349	0.349
140	2.715	1.819	1.170	0.768	0.635	0.577	0.518	0.473	0.399	0.349	0.349
145	2.786	1.861	1.218	0.796	0.660	0.600	0.540	0.494	0.418	0.349	0.349
150	2.856	1.902	1.266	0.824	0.685	0.624	0.562	0.515	0.438	0.349	0.349
155	2.926	1.944	1.314	0.853	0.710	0.647	0.584	0.535	0.457	0.349	0.349
160	2.996	1.986	1.362	0.881	0.735	0.670	0.606	0.556	0.477	0.349	0.349
165	3.066	2.027	1.409	0.910	0.760	0.694	0.628	0.577	0.497	0.349	0.349
170	3.133	2.069	1.457	0.938	0.785	0.717	0.650	0.598	0.516	0.352	0.349
175	3.197	2.111	1.505	0.967	0.810	0.740	0.672	0.619	0.536	0.371	0.349
180	3.261	2.152	1.553	0.995	0.835	0.764	0.694	0.640	0.555	0.390	0.349
185	3.326	2.194	1.601	1.023	0.860	0.787	0.716	0.660	0.575	0.409	0.349
190	3.390	2.236	1.650	1.052	0.885	0.810	0.738	0.681	0.594	0.428	0.349
195	3.454	2.277	1.700	1.080	0.910	0.834	0.760	0.702	0.614	0.446	0.349
200	3.518	2.319	1.749	1.109	0.935	0.857	0.782	0.723	0.634	0.465	0.349
205	3.582	2.361	1.799	1.137	0.960	0.881	0.804	0.744	0.653	0.484	0.349
210	3.646	2.402	1.848	1.166	0.985	0.904	0.826	0.765	0.673	0.503	0.349
215	3.710	2.444	1.897	1.194	1.010	0.927	0.847	0.786	0.692	0.522	0.349
220	3.774	2.486	1.947	1.222	1.035	0.951	0.869	0.806	0.712	0.540	0.354
225	3.838	2.527	1.996	1.251	1.059	0.974	0.891	0.827	0.731	0.559	0.372
230	3.903	2.569	2.045	1.279	1.084	0.997	0.913	0.848	0.751	0.578	0.389
235	3.967	2.610	2.095	1.308	1.109	1.021	0.935	0.869	0.771	0.597	0.406
240	4.031	2.652	2.144	1.336	1.134	1.044	0.957	0.890	0.790	0.616	0.423
245	4.095	2.694	2.193	1.365	1.159	1.068	0.979	0.911	0.810	0.634	0.440
250	4.159	2.735	2.243	1.393	1.184	1.091	1.001	0.932	0.829	0.653	0.457
255	4.223	2.777	2.292	1.421	1.209	1.114	1.023	0.952	0.849	0.672	0.474
260	4.287	2.819	2.341	1.450	1.234	1.138	1.045	0.973	0.868	0.691	0.491
265	4.351	2.860	2.391	1.478	1.259	1.161	1.067	0.994	0.888	0.710	0.508
270	4.416	2.902	2.440	1.507	1.284	1.184	1.089	1.015	0.908	0.729	0.525
275	4.480	2.944	2.490	1.535	1.309	1.208	1.111	1.036	0.927	0.747	0.542
280	4.544	2.985	2.539	1.564	1.334	1.231	1.133	1.057	0.947	0.766	0.559
285	4.608	3.027	2.588	1.595	1.359	1.254	1.154	1.077	0.966	0.785	0.576
290	4.672	3.069	2.638	1.674	1.384	1.278	1.176	1.098	0.986	0.804	0.593
295	4.736	3.125	2.687	1.752	1.409	1.301	1.198	1.119	1.005	0.823	0.610
300	4.800	3.227	2.736	1.830	1.434	1.325	1.220	1.140	1.025	0.841	0.627
305	4.864	3.330	2.786	1.908	1.459	1.348	1.242	1.161	1.045	0.860	0.644
310	4.929	3.432	2.835	1.987	1.484	1.371	1.264	1.182	1.064	0.879	0.661

Thickness is intumescent only. Results apply to I-section beams with concrete slabs with 3 sided fire exposure.

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Table 4: I-Beam Sections 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	575°C	600°C	620°C	650°C	700°C	750°C
30	1.019	0.497	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349
35	1.380	0.732	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349
40	1.741	0.968	0.416	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349
45	1.895	1.203	0.534	0.361	0.349	0.349	0.349	0.349	0.349	0.349	0.349
50	2.049	1.439	0.652	0.433	0.349	0.349	0.349	0.349	0.349	0.349	0.349
55	2.203	1.617	0.770	0.505	0.370	0.349	0.349	0.349	0.349	0.349	0.349
60	2.357	1.694	0.888	0.577	0.417	0.373	0.349	0.349	0.349	0.349	0.349
65	2.512	1.771	1.006	0.649	0.463	0.413	0.367	0.349	0.349	0.349	0.349
70	2.666	1.848	1.124	0.720	0.510	0.453	0.397	0.370	0.349	0.349	0.349
75	2.820	1.925	1.242	0.792	0.556	0.493	0.427	0.397	0.355	0.349	0.349
80	2.974	2.001	1.360	0.864	0.603	0.534	0.457	0.425	0.381	0.349	0.349
85	3.111	2.078	1.478	0.936	0.650	0.574	0.487	0.452	0.406	0.349	0.349
90	3.172	2.155	1.593	1.008	0.696	0.614	0.517	0.479	0.432	0.349	0.349
95	3.234	2.232	1.655	1.080	0.743	0.654	0.547	0.507	0.458	0.369	0.349
100	3.295	2.308	1.718	1.152	0.789	0.695	0.577	0.534	0.483	0.394	0.349
105	3.356	2.385	1.780	1.224	0.836	0.735	0.607	0.561	0.509	0.418	0.349
110	3.418	2.462	1.842	1.296	0.883	0.775	0.637	0.589	0.535	0.442	0.349
115	3.479	2.539	1.904	1.368	0.929	0.816	0.667	0.616	0.560	0.467	0.349
120	3.541	2.615	1.966	1.440	0.976	0.856	0.697	0.643	0.586	0.491	0.349
125	3.602	2.692	2.029	1.512	1.022	0.896	0.727	0.671	0.612	0.516	0.349
130	3.663	2.769	2.091	1.584	1.069	0.936	0.757	0.698	0.637	0.540	0.373
135	3.725	2.846	2.153	1.637	1.116	0.977	0.787	0.725	0.663	0.565	0.397
140	3.786	2.923	2.215	1.689	1.162	1.017	0.817	0.753	0.689	0.589	0.421
145	3.847	2.999	2.278	1.740	1.209	1.057	0.847	0.780	0.714	0.614	0.445
150	3.909	3.076	2.340	1.792	1.255	1.098	0.877	0.807	0.740	0.638	0.469
155	3.970	3.148	2.402	1.843	1.302	1.138	0.907	0.835	0.766	0.663	0.493
160	4.031	3.217	2.464	1.895	1.349	1.178	0.937	0.862	0.791	0.687	0.517
165	4.093	3.287	2.527	1.946	1.395	1.218	0.967	0.889	0.817	0.711	0.541
170	4.154	3.356	2.589	1.998	1.442	1.259	0.997	0.917	0.843	0.736	0.565
175	4.215	3.425	2.651	2.049	1.488	1.299	1.027	0.944	0.868	0.760	0.589
180	4.277	3.495	2.713	2.101	1.535	1.339	1.057	0.971	0.894	0.785	0.613
185	4.338	3.564	2.775	2.153	1.581	1.380	1.087	0.999	0.920	0.809	0.637
190	4.400	3.634	2.838	2.204	1.639	1.420	1.117	1.026	0.945	0.834	0.661
195	4.461	3.703	2.900	2.256	1.699	1.460	1.147	1.053	0.971	0.858	0.685
200	4.522	3.772	2.962	2.307	1.759	1.500	1.177	1.081	0.996	0.883	0.709
205	4.584	3.842	3.024	2.359	1.819	1.541	1.207	1.108	1.022	0.907	0.733
210	4.645	3.911	3.087	2.410	1.879	1.581	1.237	1.135	1.048	0.932	0.757
215	4.706	3.981	3.153	2.462	1.938	1.640	1.267	1.163	1.073	0.956	0.782
220	4.768	4.050	3.220	2.513	1.998	1.704	1.297	1.190	1.099	0.980	0.806
225	4.829	4.119	3.288	2.565	2.058	1.769	1.327	1.217	1.125	1.005	0.830
230	4.890	4.189	3.355	2.617	2.118	1.833	1.357	1.245	1.150	1.029	0.854
235	4.952	4.258	3.423	2.668	2.178	1.898	1.387	1.272	1.176	1.054	0.878
240	5.013	4.328	3.490	2.720	2.238	1.962	1.417	1.300	1.202	1.078	0.902
245	5.075	4.397	3.558	2.771	2.298	2.026	1.447	1.327	1.227	1.103	0.926
250	5.136	4.466	3.625	2.823	2.358	2.091	1.477	1.354	1.253	1.127	0.950
255	5.197	4.536	3.693	2.874	2.418	2.155	1.507	1.382	1.279	1.152	0.974
260	5.259	4.605	3.760	2.926	2.478	2.220	1.537	1.409	1.304	1.176	0.998
265	-	4.674	3.828	2.977	2.538	2.284	1.567	1.436	1.330	1.200	1.022
270	-	4.744	3.895	3.029	2.597	2.349	1.613	1.464	1.356	1.225	1.046
275	-	4.813	3.963	3.080	2.657	2.413	1.711	1.491	1.381	1.249	1.070
280	-	4.883	4.030	3.151	2.717	2.477	1.808	1.518	1.407	1.274	1.094
285	-	4.952	4.098	3.234	2.777	2.542	1.905	1.546	1.433	1.298	1.118
290	-	5.021	4.165	3.317	2.837	2.606	2.003	1.573	1.458	1.323	1.142
295	-	5.091	4.233	3.400	2.897	2.671	2.100	1.631	1.484	1.347	1.166
300	-	5.160	4.300	3.482	2.957	2.735	2.197	1.741	1.510	1.372	1.190
305	-	5.230	4.368	3.565	3.017	2.799	2.295	1.851	1.535	1.396	1.214
310	-	5.299	4.435	3.648	3.077	2.864	2.392	1.961	1.561	1.421	1.238

Thickness is intumescent only. Results apply to I-section beams with concrete slabs with 3 sided fire exposure.

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Table 5: I-Beam Sections 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	575°C	600°C	620°C	650°C	700°C	750°C
30	2.428	1.415	0.588	0.349	0.349	0.349	0.349	0.349	0.349	0.349	0.349
35	2.790	1.613	0.799	0.463	0.349	0.349	0.349	0.349	0.349	0.349	0.349
40	3.152	1.812	1.011	0.610	0.369	0.349	0.349	0.349	0.349	0.349	0.349
45	3.212	2.010	1.222	0.758	0.465	0.404	0.349	0.349	0.349	0.349	0.349
50	3.272	2.208	1.434	0.905	0.560	0.492	0.428	0.377	0.349	0.349	0.349
55	3.332	2.407	1.617	1.052	0.656	0.580	0.513	0.448	0.375	0.349	0.349
60	3.393	2.605	1.718	1.200	0.752	0.667	0.598	0.518	0.432	0.349	0.349
65	3.453	2.803	1.819	1.347	0.847	0.755	0.683	0.589	0.488	0.369	0.349
70	3.513	3.002	1.920	1.495	0.943	0.843	0.769	0.660	0.545	0.410	0.349
75	3.573	3.131	2.021	1.617	1.039	0.931	0.854	0.731	0.601	0.452	0.349
80	3.633	3.192	2.122	1.695	1.134	1.018	0.939	0.801	0.658	0.493	0.351
85	3.693	3.253	2.223	1.773	1.230	1.106	1.024	0.872	0.714	0.534	0.381
90	3.753	3.313	2.325	1.851	1.326	1.194	1.109	0.943	0.770	0.575	0.411
95	3.814	3.374	2.426	1.928	1.421	1.282	1.195	1.014	0.827	0.616	0.441
100	3.874	3.435	2.527	2.006	1.517	1.370	1.280	1.085	0.883	0.657	0.471
105	3.934	3.496	2.628	2.084	1.607	1.457	1.365	1.155	0.940	0.698	0.501
110	3.994	3.557	2.729	2.161	1.678	1.545	1.450	1.226	0.996	0.739	0.532
115	4.054	3.618	2.830	2.239	1.749	1.621	1.535	1.297	1.053	0.780	0.562
120	4.114	3.679	2.931	2.317	1.820	1.683	1.609	1.368	1.109	0.821	0.592
125	4.174	3.740	3.033	2.395	1.890	1.746	1.663	1.438	1.165	0.862	0.622
130	4.235	3.800	3.121	2.472	1.961	1.809	1.717	1.509	1.222	0.903	0.652
135	4.295	3.861	3.184	2.550	2.032	1.872	1.771	1.580	1.278	0.944	0.682
140	4.355	3.922	3.246	2.628	2.103	1.935	1.825	1.635	1.335	0.985	0.712
145	4.415	3.983	3.309	2.705	2.174	1.997	1.879	1.687	1.391	1.026	0.742
150	4.475	4.044	3.371	2.783	2.245	2.060	1.933	1.739	1.448	1.067	0.772
155	4.535	4.105	3.434	2.861	2.316	2.123	1.987	1.791	1.504	1.108	0.803
160	4.595	4.166	3.497	2.939	2.387	2.186	2.041	1.843	1.561	1.149	0.833
165	4.656	4.227	3.559	3.016	2.458	2.249	2.095	1.895	1.616	1.190	0.863
170	4.716	4.287	3.622	3.094	2.529	2.311	2.149	1.947	1.671	1.231	0.893
175	4.776	4.348	3.685	3.162	2.600	2.374	2.203	2.000	1.726	1.272	0.923
180	4.836	4.409	3.747	3.230	2.671	2.437	2.257	2.052	1.780	1.313	0.953
185	4.896	4.470	3.810	3.298	2.742	2.500	2.311	2.104	1.835	1.354	0.983
190	4.956	4.531	3.873	3.366	2.813	2.562	2.364	2.156	1.890	1.395	1.013
195	5.016	4.592	3.935	3.433	2.883	2.625	2.418	2.208	1.944	1.436	1.044
200	5.077	4.653	3.998	3.501	2.954	2.688	2.472	2.260	1.999	1.477	1.074
205	5.137	4.714	4.061	3.569	3.025	2.751	2.526	2.312	2.054	1.518	1.104
210	5.197	4.775	4.123	3.636	3.096	2.814	2.580	2.364	2.109	1.559	1.134
215	5.257	4.835	4.186	3.704	3.170	2.876	2.634	2.417	2.163	1.605	1.164
220	5.317	4.896	4.249	3.772	3.243	2.939	2.688	2.469	2.218	1.668	1.194
225	5.377	4.957	4.311	3.839	3.317	3.002	2.742	2.521	2.273	1.730	1.224
230	5.438	5.018	4.374	3.907	3.391	3.065	2.796	2.573	2.328	1.792	1.254
235	5.498	5.079	4.436	3.975	3.464	3.134	2.850	2.625	2.382	1.854	1.285
240	5.558	5.140	4.499	4.043	3.538	3.212	2.904	2.677	2.437	1.916	1.315
245	5.618	5.201	4.562	4.110	3.611	3.290	2.958	2.729	2.492	1.978	1.345
250	-	5.262	4.624	4.178	3.685	3.368	3.012	2.781	2.546	2.040	1.375
255	-	5.322	4.687	4.246	3.758	3.446	3.066	2.833	2.601	2.102	1.405
260	-	5.383	4.750	4.313	3.832	3.524	3.130	2.886	2.656	2.164	1.435
265	-	5.444	4.812	4.381	3.906	3.602	3.214	2.938	2.711	2.226	1.465
270	-	5.505	4.875	4.449	3.979	3.680	3.298	2.990	2.765	2.288	1.495
275	-	5.566	4.938	4.516	4.053	3.758	3.382	3.042	2.820	2.350	1.526
280	-	-	5.000	4.584	4.126	3.836	3.465	3.094	2.875	2.412	1.556
285	-	-	5.063	4.652	4.200	3.914	3.549	3.180	2.929	2.474	1.586
290	-	-	5.126	4.720	4.274	3.992	3.633	3.270	2.984	2.536	1.658
295	-	-	5.188	4.787	4.347	4.070	3.717	3.360	3.039	2.598	1.737
300	-	-	5.251	4.855	4.421	4.148	3.801	3.450	3.094	2.660	1.817
305	-	-	5.314	4.923	4.494	4.226	3.884	3.540	3.177	2.722	1.896
310	-	-	5.376	4.990	4.568	4.304	3.968	3.630	3.263	2.784	1.975

Thickness is intumescent only. Results apply to I-section beams with concrete slabs with 3 sided fire exposure.

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Table 6: I-Beam Sections 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	575°C	600°C	620°C	650°C	700°C	750°C
30	3.865	2.220	0.820	0.710	0.433	0.349	0.349	0.349	0.349	0.349	0.349
35	4.052	2.680	1.260	0.941	0.606	0.474	0.349	0.349	0.349	0.349	0.349
40	4.238	3.140	1.700	1.172	0.779	0.623	0.463	0.403	0.349	0.349	0.349
45	4.424	3.202	2.025	1.403	0.952	0.771	0.591	0.513	0.425	0.349	0.349
50	4.611	3.264	2.349	1.614	1.125	0.920	0.719	0.622	0.517	0.386	0.349
55	4.797	3.327	2.674	1.742	1.298	1.069	0.847	0.732	0.609	0.479	0.349
60	4.983	3.389	2.998	1.869	1.471	1.218	0.976	0.841	0.700	0.572	0.360
65	5.170	3.452	3.142	1.996	1.618	1.366	1.104	0.950	0.792	0.665	0.419
70	5.356	3.514	3.202	2.124	1.707	1.515	1.232	1.060	0.884	0.758	0.478
75	5.542	3.577	3.263	2.251	1.795	1.631	1.360	1.169	0.976	0.850	0.537
80	-	3.639	3.324	2.379	1.884	1.714	1.489	1.279	1.068	0.943	0.595
85	-	3.701	3.384	2.506	1.973	1.797	1.607	1.388	1.159	1.036	0.654
90	-	3.764	3.445	2.633	2.062	1.880	1.686	1.498	1.251	1.129	0.713
95	-	3.826	3.506	2.761	2.151	1.962	1.765	1.602	1.343	1.222	0.772
100	-	3.889	3.566	2.888	2.240	2.045	1.844	1.678	1.435	1.314	0.830
105	-	3.951	3.627	3.016	2.329	2.128	1.923	1.755	1.527	1.407	0.889
110	-	4.014	3.688	3.132	2.418	2.211	2.002	1.831	1.612	1.500	0.948
115	-	4.076	3.748	3.226	2.507	2.294	2.082	1.907	1.682	1.592	1.007
120	-	4.138	3.809	3.320	2.596	2.377	2.161	1.984	1.753	1.644	1.065
125	-	4.201	3.870	3.414	2.684	2.459	2.240	2.060	1.823	1.696	1.124
130	-	4.263	3.930	3.507	2.773	2.542	2.319	2.137	1.894	1.748	1.183
135	-	4.326	3.991	3.601	2.862	2.625	2.398	2.213	1.964	1.800	1.242
140	-	4.388	4.052	3.695	2.951	2.708	2.477	2.289	2.035	1.852	1.300
145	-	4.450	4.112	3.789	3.040	2.791	2.557	2.366	2.105	1.904	1.359
150	-	4.513	4.173	3.883	3.123	2.874	2.636	2.442	2.176	1.957	1.418
155	-	4.575	4.234	3.977	3.195	2.956	2.715	2.519	2.246	2.009	1.477
160	-	4.638	4.294	4.071	3.267	3.039	2.794	2.595	2.317	2.061	1.536
165	-	4.700	4.355	4.165	3.339	3.120	2.873	2.671	2.388	2.113	1.594
170	-	4.763	4.416	4.245	3.411	3.194	2.952	2.748	2.458	2.165	1.648
175	-	4.825	4.476	4.295	3.483	3.267	3.032	2.824	2.529	2.217	1.703
180	-	4.887	4.537	4.345	3.555	3.341	3.110	2.901	2.599	2.270	1.757
185	-	4.950	4.598	4.394	3.627	3.415	3.185	2.977	2.670	2.322	1.811
190	-	5.012	4.658	4.444	3.699	3.489	3.260	3.053	2.740	2.374	1.866
195	-	5.075	4.719	4.493	3.771	3.562	3.336	3.130	2.811	2.426	1.920
200	-	5.137	4.780	4.543	3.843	3.636	3.411	3.207	2.881	2.478	1.974
205	-	5.200	4.840	4.593	3.915	3.710	3.486	3.283	2.952	2.530	2.029
210	-	5.262	4.901	4.642	3.987	3.784	3.561	3.360	3.022	2.582	2.083
215	-	5.324	4.962	4.692	4.059	3.858	3.636	3.436	3.093	2.635	2.137
220	-	5.387	5.022	4.742	4.131	3.931	3.711	3.513	3.171	2.687	2.192
225	-	5.449	5.083	4.791	4.203	4.005	3.786	3.590	3.251	2.739	2.246
230	-	5.512	5.144	4.841	4.275	4.079	3.862	3.666	3.330	2.791	2.300
235	-	5.574	5.204	4.891	4.347	4.153	3.937	3.743	3.409	2.843	2.355
240	-	-	5.265	4.940	4.419	4.226	4.012	3.820	3.488	2.895	2.409
245	-	-	5.326	4.990	4.491	4.300	4.087	3.896	3.568	2.947	2.463
250	-	-	5.386	5.040	4.563	4.374	4.162	3.973	3.647	3.000	2.518
255	-	-	5.447	5.089	4.635	4.448	4.237	4.050	3.726	3.052	2.572
260	-	-	5.508	5.139	4.707	4.522	4.313	4.126	3.805	3.106	2.626
265	-	-	5.568	5.188	4.779	4.595	4.388	4.203	3.885	3.191	2.681
270	-	-	-	5.238	4.851	4.669	4.463	4.279	3.964	3.275	2.735
275	-	-	-	5.288	4.923	4.743	4.538	4.356	4.043	3.359	2.789
280	-	-	-	5.337	4.995	4.817	4.613	4.433	4.123	3.444	2.844
285	-	-	-	5.387	5.067	4.890	4.688	4.509	4.202	3.528	2.898
290	-	-	-	5.437	5.139	4.964	4.763	4.586	4.281	3.612	2.952
295	-	-	-	5.486	5.211	5.038	4.839	4.663	4.360	3.696	3.007
300	-	-	-	5.536	5.283	5.112	4.914	4.739	4.440	3.781	3.061
305	-	-	-	5.586	5.355	5.186	4.989	4.816	4.519	3.865	3.122
310	-	-	-	-	5.427	5.259	5.064	4.892	4.598	3.949	3.202

Thickness is intumescent only. Results apply to I-section beams with concrete slabs with 3 sided fire exposure.

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SHERWIN-WILLIAMS PROTECTIVE & MARINE COATINGS

Table 7: I-Beam Sections 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	575°C	600°C	620°C	650°C	700°C	750°C
30	-	3.643	1.454	0.809	0.809	0.672	0.524	0.439	0.349	0.349	0.349
35	-	3.836	2.310	1.330	1.059	0.893	0.720	0.617	0.462	0.349	0.349
40	-	4.030	3.166	1.851	1.308	1.113	0.916	0.795	0.618	0.380	0.349
45	-	4.223	3.258	2.269	1.556	1.334	1.112	0.973	0.774	0.501	0.349
50	-	4.417	3.350	2.687	1.747	1.555	1.308	1.151	0.931	0.623	0.410
55	-	4.610	3.443	3.101	1.929	1.698	1.505	1.329	1.087	0.745	0.507
60	-	4.804	3.535	3.169	2.110	1.827	1.651	1.507	1.243	0.866	0.604
65	-	4.997	3.627	3.237	2.292	1.956	1.760	1.639	1.400	0.988	0.701
70	-	5.191	3.720	3.305	2.474	2.085	1.869	1.731	1.556	1.110	0.798
75	-	5.384	3.812	3.374	2.656	2.214	1.978	1.824	1.655	1.231	0.895
80	-	5.578	3.904	3.442	2.837	2.343	2.087	1.916	1.737	1.353	0.992
85	-	-	3.997	3.510	3.019	2.472	2.195	2.008	1.820	1.475	1.089
90	-	-	4.089	3.578	3.148	2.601	2.304	2.100	1.902	1.594	1.186
95	-	-	4.181	3.646	3.235	2.729	2.413	2.193	1.985	1.669	1.283
100	-	-	4.274	3.715	3.322	2.858	2.522	2.285	2.067	1.745	1.380
105	-	-	4.366	3.783	3.408	2.987	2.631	2.377	2.150	1.820	1.477
110	-	-	4.458	3.851	3.495	3.113	2.739	2.469	2.233	1.896	1.574
115	-	-	4.551	3.919	3.582	3.215	2.848	2.561	2.315	1.971	1.649
120	-	-	4.643	3.987	3.668	3.318	2.957	2.654	2.398	2.047	1.719
125	-	-	4.735	4.056	3.755	3.420	3.066	2.746	2.480	2.122	1.789
130	-	-	4.828	4.124	3.842	3.523	3.177	2.838	2.563	2.198	1.860
135	-	-	4.920	4.192	3.929	3.625	3.288	2.930	2.645	2.273	1.930
140	-	-	5.012	4.260	4.015	3.728	3.400	3.022	2.728	2.349	2.000
145	-	-	5.105	4.329	4.102	3.831	3.512	3.114	2.810	2.424	2.071
150	-	-	5.197	4.397	4.189	3.933	3.623	3.201	2.893	2.499	2.141
155	-	-	5.289	4.465	4.263	4.036	3.735	3.288	2.976	2.575	2.211
160	-	-	5.382	4.533	4.326	4.138	3.847	3.375	3.058	2.650	2.282
165	-	-	5.474	4.601	4.390	4.237	3.959	3.462	3.139	2.726	2.352
170	-	-	5.566	4.670	4.453	4.306	4.070	3.549	3.217	2.801	2.422
175	-	-	-	4.738	4.516	4.376	4.182	3.636	3.296	2.877	2.493
180	-	-	-	4.806	4.579	4.445	4.269	3.723	3.374	2.952	2.563
185	-	-	-	4.874	4.642	4.514	4.339	3.810	3.453	3.028	2.634
190	-	-	-	4.942	4.705	4.583	4.408	3.897	3.531	3.103	2.704
195	-	-	-	5.011	4.768	4.653	4.477	3.984	3.610	3.180	2.774
200	-	-	-	5.079	4.832	4.722	4.547	4.071	3.688	3.257	2.845
205	-	-	-	5.147	4.895	4.791	4.616	4.158	3.767	3.335	2.915
210	-	-	-	5.215	4.958	4.860	4.685	4.245	3.845	3.412	2.985
215	-	-	-	5.283	5.021	4.930	4.754	4.332	3.924	3.489	3.056
220	-	-	-	5.352	5.084	4.999	4.824	4.419	4.002	3.566	3.126
225	-	-	-	5.420	5.147	5.068	4.893	4.506	4.080	3.643	3.197
230	-	-	-	5.488	5.211	5.137	4.962	4.593	4.159	3.720	3.268
235	-	-	-	5.556	5.274	5.206	5.032	4.680	4.237	3.798	3.339
240	-	-	-	-	5.337	5.276	5.101	4.767	4.316	3.875	3.410
245	-	-	-	-	5.400	5.345	5.170	4.854	4.394	3.952	3.480
250	-	-	-	-	5.463	5.414	5.240	4.941	4.473	4.029	3.551
255	-	-	-	-	5.526	5.483	5.309	5.028	4.551	4.106	3.622
260	-	-	-	-	5.590	5.553	5.378	5.115	4.630	4.184	3.693
265	-	-	-	-	-	-	5.447	5.202	4.708	4.261	3.764
270	-	-	-	-	-	-	5.517	5.289	4.787	4.338	3.834
275	-	-	-	-	-	-	5.586	5.376	4.865	4.415	3.905
280	-	-	-	-	-	-	-	5.463	4.944	4.492	3.976
285	-	-	-	-	-	-	-	5.550	5.022	4.569	4.047
290	-	-	-	-	-	-	-	-	5.101	4.647	4.118
295	-	-	-	-	-	-	-	-	5.179	4.724	4.189
300	-	-	-	-	-	-	-	-	5.258	4.801	4.259
305	-	-	-	-	-	-	-	-	5.336	4.878	4.330
310	-	-	-	-	-	-	-	-	5.415	4.955	4.401

Thickness is intumescent only. Results apply to I-section beams with concrete slabs with 3 sided fire exposure.

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SHERWIN-WILLIAMS PROTECTIVE & MARINE COATINGS

Table 8: I-Beam Sections 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	575°C	600°C	620°C	650°C	700°C	750°C
30	-	4.486	3.521	1.460	0.880	0.880	0.880	0.778	0.623	0.349	0.349
35	-	4.820	3.744	2.340	1.380	1.230	1.146	1.023	0.847	0.549	0.349
40	-	5.489	3.966	3.220	2.011	1.652	1.412	1.268	1.071	0.753	0.387
45	-	-	4.189	3.382	2.500	1.991	1.669	1.513	1.296	0.958	0.567
50	-	-	4.412	3.543	2.988	2.330	1.907	1.709	1.520	1.162	0.747
55	-	-	4.635	3.704	3.188	2.668	2.145	1.883	1.674	1.367	0.926
60	-	-	4.857	3.866	3.301	3.007	2.384	2.057	1.796	1.571	1.106
65	-	-	5.080	4.027	3.415	3.186	2.622	2.231	1.917	1.667	1.285
70	-	-	5.303	4.189	3.529	3.304	2.861	2.405	2.039	1.752	1.465
75	-	-	5.525	4.350	3.643	3.423	3.099	2.579	2.161	1.838	1.616
80	-	-	-	4.511	3.757	3.541	3.224	2.753	2.283	1.923	1.702
85	-	-	-	4.673	3.870	3.659	3.349	2.926	2.405	2.008	1.788
90	-	-	-	4.834	3.984	3.777	3.474	3.100	2.527	2.093	1.874
95	-	-	-	4.996	4.098	3.896	3.599	3.192	2.649	2.178	1.959
100	-	-	-	5.157	4.212	4.014	3.724	3.283	2.771	2.263	2.045
105	-	-	-	5.318	4.325	4.132	3.848	3.375	2.892	2.348	2.131
110	-	-	-	5.480	4.439	4.251	3.973	3.466	3.014	2.434	2.217
115	-	-	-	-	4.553	4.369	4.098	3.558	3.133	2.519	2.303
120	-	-	-	-	4.667	4.487	4.223	3.649	3.243	2.604	2.389
125	-	-	-	-	4.780	4.606	4.348	3.741	3.354	2.689	2.474
130	-	-	-	-	4.894	4.724	4.472	3.832	3.465	2.774	2.560
135	-	-	-	-	5.008	4.842	4.597	3.924	3.575	2.859	2.646
140	-	-	-	-	5.122	4.961	4.722	4.015	3.686	2.945	2.732
145	-	-	-	-	5.236	5.079	4.847	4.107	3.796	3.030	2.818
150	-	-	-	-	5.349	5.197	4.972	4.199	3.907	3.116	2.904
155	-	-	-	-	5.463	5.316	5.097	4.311	4.017	3.209	2.989
160	-	-	-	-	5.577	5.434	5.221	4.434	4.128	3.302	3.075
165	-	-	-	-	-	5.552	5.346	4.557	4.237	3.395	3.148
170	-	-	-	-	-	-	5.471	4.680	4.329	3.488	3.216
175	-	-	-	-	-	-	5.596	4.803	4.421	3.581	3.284
180	-	-	-	-	-	-	-	4.926	4.513	3.673	3.351
185	-	-	-	-	-	-	-	5.050	4.605	3.766	3.419
190	-	-	-	-	-	-	-	5.173	4.697	3.859	3.487
195	-	-	-	-	-	-	-	5.296	4.789	3.952	3.555
200	-	-	-	-	-	-	-	5.419	4.881	4.045	3.622
205	-	-	-	-	-	-	-	5.542	4.973	4.138	3.690
210	-	-	-	-	-	-	-	-	5.065	4.231	3.758
215	-	-	-	-	-	-	-	-	5.157	4.324	3.826
220	-	-	-	-	-	-	-	-	5.249	4.417	3.893
225	-	-	-	-	-	-	-	-	5.341	4.509	3.961
230	-	-	-	-	-	-	-	-	5.433	4.602	4.029
235	-	-	-	-	-	-	-	-	5.525	4.695	4.097
240	-	-	-	-	-	-	-	-	5.617	4.788	4.164
245	-	-	-	-	-	-	-	-	-	4.881	4.232
250	-	-	-	-	-	-	-	-	-	4.974	4.300
255	-	-	-	-	-	-	-	-	-	5.067	4.368
260	-	-	-	-	-	-	-	-	-	5.160	4.435
265	-	-	-	-	-	-	-	-	-	5.253	4.503
270	-	-	-	-	-	-	-	-	-	5.345	4.571
275	-	-	-	-	-	-	-	-	-	5.438	4.638
280	-	-	-	-	-	-	-	-	-	5.531	4.706
285	-	-	-	-	-	-	-	-	-	-	4.774
290	-	-	-	-	-	-	-	-	-	-	4.842
295	-	-	-	-	-	-	-	-	-	-	4.909
300	-	-	-	-	-	-	-	-	-	-	4.977
305	-	-	-	-	-	-	-	-	-	-	5.045
310	-	-	-	-	-	-	-	-	-	-	5.113

Thickness is intumescent only. Results apply to I-section beams with concrete slabs with 3 sided fire exposure.

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Table 9: H-Column Sections 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	750°C
30	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261
35	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261
40	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261
45	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261
50	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261
55	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261
60	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261
65	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261
70	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261
75	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261
80	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261
85	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261
90	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261
95	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261
100	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261
105	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261
110	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261
115	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261
120	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261
125	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261
130	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261
135	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261
140	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261
145	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261
150	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261
155	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261
160	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261
165	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261
170	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261
175	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261
180	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261
185	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261
190	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261
195	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261
200	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261
205	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261
210	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261
215	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261
220	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261
225	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261
230	0.269	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261
235	0.287	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261
240	0.305	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261
245	0.323	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261
250	0.340	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261
255	0.358	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261
260	0.376	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261
265	0.394	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261
270	0.412	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261
275	0.430	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261
280	0.448	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261
285	0.465	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261
290	0.483	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261
295	0.501	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261
300	0.519	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261
305	0.537	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261
310	0.555	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261
315	0.573	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261
320	0.590	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261
325	0.608	0.266	0.261	0.261	0.261	0.261	0.261	0.261	0.261
330	0.626	0.278	0.261	0.261	0.261	0.261	0.261	0.261	0.261
335	0.644	0.291	0.261	0.261	0.261	0.261	0.261	0.261	0.261
340	0.662	0.304	0.261	0.261	0.261	0.261	0.261	0.261	0.261
345	0.680	0.317	0.261	0.261	0.261	0.261	0.261	0.261	0.261
350	0.698	0.329	0.261	0.261	0.261	0.261	0.261	0.261	0.261
355	0.715	0.342	0.261	0.261	0.261	0.261	0.261	0.261	0.261
360	0.733	0.355	0.261	0.261	0.261	0.261	0.261	0.261	0.261
365	0.751	0.368	0.261	0.261	0.261	0.261	0.261	0.261	0.261
370	0.769	0.380	0.261	0.261	0.261	0.261	0.261	0.261	0.261
375	0.787	0.393	0.261	0.261	0.261	0.261	0.261	0.261	0.261
380	0.805	0.406	0.261	0.261	0.261	0.261	0.261	0.261	0.261
385	0.823	0.419	0.261	0.261	0.261	0.261	0.261	0.261	0.261

Thickness is intumescent only. Results also apply to I-section beams exposed on all four sides.

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CERTIFICATE No CF 5300
SHERWIN-WILLIAMS PROTECTIVE & MARINE COATINGS

Table 10: H-Column Sections 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	750°C
30	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261
35	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261
40	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261
45	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261
50	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261
55	0.289	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261
60	0.325	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261
65	0.361	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261
70	0.397	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261
75	0.433	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261
80	0.469	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261
85	0.505	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261
90	0.541	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261
95	0.577	0.274	0.261	0.261	0.261	0.261	0.261	0.261	0.261
100	0.613	0.295	0.261	0.261	0.261	0.261	0.261	0.261	0.261
105	0.649	0.317	0.261	0.261	0.261	0.261	0.261	0.261	0.261
110	0.685	0.339	0.261	0.261	0.261	0.261	0.261	0.261	0.261
115	0.721	0.361	0.261	0.261	0.261	0.261	0.261	0.261	0.261
120	0.757	0.383	0.261	0.261	0.261	0.261	0.261	0.261	0.261
125	0.793	0.404	0.261	0.261	0.261	0.261	0.261	0.261	0.261
130	0.829	0.426	0.261	0.261	0.261	0.261	0.261	0.261	0.261
135	0.865	0.448	0.261	0.261	0.261	0.261	0.261	0.261	0.261
140	0.901	0.470	0.261	0.261	0.261	0.261	0.261	0.261	0.261
145	0.937	0.492	0.261	0.261	0.261	0.261	0.261	0.261	0.261
150	0.973	0.513	0.261	0.261	0.261	0.261	0.261	0.261	0.261
155	1.009	0.535	0.261	0.261	0.261	0.261	0.261	0.261	0.261
160	1.045	0.557	0.261	0.261	0.261	0.261	0.261	0.261	0.261
165	1.081	0.579	0.261	0.261	0.261	0.261	0.261	0.261	0.261
170	1.117	0.601	0.261	0.261	0.261	0.261	0.261	0.261	0.261
175	1.153	0.623	0.261	0.261	0.261	0.261	0.261	0.261	0.261
180	1.189	0.644	0.261	0.261	0.261	0.261	0.261	0.261	0.261
185	1.225	0.666	0.261	0.261	0.261	0.261	0.261	0.261	0.261
190	1.261	0.688	0.261	0.261	0.261	0.261	0.261	0.261	0.261
195	1.297	0.710	0.261	0.261	0.261	0.261	0.261	0.261	0.261
200	1.333	0.732	0.261	0.261	0.261	0.261	0.261	0.261	0.261
205	1.369	0.753	0.264	0.261	0.261	0.261	0.261	0.261	0.261
210	1.405	0.775	0.288	0.261	0.261	0.261	0.261	0.261	0.261
215	1.441	0.797	0.311	0.261	0.261	0.261	0.261	0.261	0.261
220	1.477	0.819	0.334	0.261	0.261	0.261	0.261	0.261	0.261
225	1.513	0.841	0.357	0.261	0.261	0.261	0.261	0.261	0.261
230	1.549	0.863	0.380	0.261	0.261	0.261	0.261	0.261	0.261
235	1.585	0.884	0.403	0.261	0.261	0.261	0.261	0.261	0.261
240	1.621	0.906	0.426	0.261	0.261	0.261	0.261	0.261	0.261
245	1.657	0.928	0.450	0.261	0.261	0.261	0.261	0.261	0.261
250	1.692	0.950	0.473	0.261	0.261	0.261	0.261	0.261	0.261
255	1.719	0.972	0.496	0.261	0.261	0.261	0.261	0.261	0.261
260	1.746	0.993	0.519	0.266	0.261	0.261	0.261	0.261	0.261
265	1.772	1.015	0.542	0.287	0.261	0.261	0.261	0.261	0.261
270	1.799	1.037	0.565	0.308	0.261	0.261	0.261	0.261	0.261
275	1.826	1.059	0.588	0.330	0.261	0.261	0.261	0.261	0.261
280	1.853	1.081	0.611	0.351	0.261	0.261	0.261	0.261	0.261
285	1.880	1.103	0.635	0.372	0.261	0.261	0.261	0.261	0.261
290	1.906	1.124	0.658	0.394	0.261	0.261	0.261	0.261	0.261
295	1.933	1.146	0.681	0.415	0.261	0.261	0.261	0.261	0.261
300	1.960	1.168	0.704	0.436	0.261	0.261	0.261	0.261	0.261
305	1.987	1.190	0.727	0.458	0.261	0.261	0.261	0.261	0.261
310	2.014	1.212	0.750	0.479	0.268	0.261	0.261	0.261	0.261
315	2.040	1.233	0.773	0.500	0.287	0.261	0.261	0.261	0.261
320	2.067	1.255	0.797	0.522	0.306	0.261	0.261	0.261	0.261
325	2.094	1.277	0.820	0.543	0.325	0.261	0.261	0.261	0.261
330	2.121	1.299	0.843	0.564	0.344	0.261	0.261	0.261	0.261
335	2.148	1.321	0.866	0.586	0.364	0.261	0.261	0.261	0.261
340	2.174	1.342	0.889	0.607	0.383	0.261	0.261	0.261	0.261
345	2.201	1.364	0.912	0.628	0.402	0.261	0.261	0.261	0.261
350	2.228	1.386	0.935	0.650	0.421	0.261	0.261	0.261	0.261
355	2.255	1.408	0.958	0.671	0.440	0.261	0.261	0.261	0.261
360	2.282	1.430	0.982	0.692	0.459	0.261	0.261	0.261	0.261
365	2.308	1.452	1.005	0.714	0.478	0.261	0.261	0.261	0.261
370	2.335	1.473	1.028	0.735	0.498	0.261	0.261	0.261	0.261
375	2.362	1.495	1.051	0.756	0.517	0.261	0.261	0.261	0.261
380	2.389	1.517	1.074	0.778	0.536	0.261	0.261	0.261	0.261
385	2.416	1.539	1.097	0.799	0.555	0.261	0.261	0.261	0.261

Thickness is intumescent only. Results also apply to I-section beams exposed on all four sides.

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Table 11: H-Column Sections 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	750°C
30	0.417	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261
35	0.545	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261
40	0.673	0.293	0.261	0.261	0.261	0.261	0.261	0.261	0.261
45	0.801	0.346	0.261	0.261	0.261	0.261	0.261	0.261	0.261
50	0.928	0.400	0.261	0.261	0.261	0.261	0.261	0.261	0.261
55	1.056	0.453	0.268	0.261	0.261	0.261	0.261	0.261	0.261
60	1.184	0.507	0.297	0.261	0.261	0.261	0.261	0.261	0.261
65	1.312	0.561	0.327	0.261	0.261	0.261	0.261	0.261	0.261
70	1.440	0.614	0.357	0.261	0.261	0.261	0.261	0.261	0.261
75	1.568	0.668	0.387	0.261	0.261	0.261	0.261	0.261	0.261
80	1.692	0.721	0.416	0.261	0.261	0.261	0.261	0.261	0.261
85	1.739	0.775	0.446	0.261	0.261	0.261	0.261	0.261	0.261
90	1.786	0.828	0.476	0.261	0.261	0.261	0.261	0.261	0.261
95	1.833	0.882	0.506	0.261	0.261	0.261	0.261	0.261	0.261
100	1.880	0.935	0.536	0.268	0.261	0.261	0.261	0.261	0.261
105	1.927	0.989	0.565	0.294	0.261	0.261	0.261	0.261	0.261
110	1.974	1.042	0.595	0.319	0.261	0.261	0.261	0.261	0.261
115	2.021	1.096	0.625	0.344	0.261	0.261	0.261	0.261	0.261
120	2.068	1.149	0.655	0.369	0.261	0.261	0.261	0.261	0.261
125	2.115	1.203	0.684	0.394	0.261	0.261	0.261	0.261	0.261
130	2.162	1.256	0.714	0.419	0.261	0.261	0.261	0.261	0.261
135	2.209	1.310	0.744	0.445	0.261	0.261	0.261	0.261	0.261
140	2.256	1.363	0.774	0.470	0.261	0.261	0.261	0.261	0.261
145	2.303	1.417	0.803	0.495	0.261	0.261	0.261	0.261	0.261
150	2.350	1.470	0.833	0.520	0.261	0.261	0.261	0.261	0.261
155	2.397	1.524	0.863	0.545	0.261	0.261	0.261	0.261	0.261
160	2.443	1.578	0.893	0.571	0.261	0.261	0.261	0.261	0.261
165	2.487	1.631	0.922	0.596	0.261	0.261	0.261	0.261	0.261
170	2.531	1.685	0.952	0.621	0.261	0.261	0.261	0.261	0.261
175	2.575	1.725	0.982	0.646	0.261	0.261	0.261	0.261	0.261
180	2.619	1.764	1.012	0.671	0.261	0.261	0.261	0.261	0.261
185	2.663	1.804	1.042	0.696	0.261	0.261	0.261	0.261	0.261
190	2.708	1.843	1.071	0.722	0.261	0.261	0.261	0.261	0.261
195	2.752	1.882	1.101	0.747	0.261	0.261	0.261	0.261	0.261
200	2.796	1.921	1.131	0.772	0.290	0.261	0.261	0.261	0.261
205	2.840	1.960	1.161	0.797	0.320	0.261	0.261	0.261	0.261
210	2.884	2.000	1.190	0.822	0.351	0.261	0.261	0.261	0.261
215	2.928	2.039	1.220	0.847	0.381	0.261	0.261	0.261	0.261
220	2.972	2.078	1.250	0.873	0.411	0.261	0.261	0.261	0.261
225	3.016	2.117	1.280	0.898	0.441	0.261	0.261	0.261	0.261
230	3.060	2.156	1.309	0.923	0.471	0.261	0.261	0.261	0.261
235	3.104	2.196	1.339	0.948	0.502	0.270	0.261	0.261	0.261
240	3.149	2.235	1.369	0.973	0.532	0.298	0.261	0.261	0.261
245	3.193	2.274	1.399	0.998	0.562	0.327	0.261	0.261	0.261
250	3.237	2.313	1.428	1.024	0.592	0.355	0.261	0.261	0.261
255	3.281	2.352	1.458	1.049	0.623	0.383	0.261	0.261	0.261
260	3.325	2.391	1.488	1.074	0.653	0.412	0.261	0.261	0.261
265	3.369	2.434	1.518	1.099	0.683	0.440	0.261	0.261	0.261
270	3.413	2.486	1.547	1.124	0.713	0.468	0.261	0.261	0.261
275	3.457	2.537	1.577	1.150	0.744	0.497	0.261	0.261	0.261
280	3.501	2.589	1.607	1.175	0.774	0.525	0.261	0.261	0.261
285	3.545	2.641	1.637	1.200	0.804	0.554	0.261	0.261	0.261
290	3.590	2.692	1.667	1.225	0.834	0.582	0.261	0.261	0.261
295	3.634	2.744	1.701	1.250	0.864	0.610	0.261	0.261	0.261
300	3.678	2.796	1.755	1.275	0.895	0.639	0.261	0.261	0.261
305	3.722	2.847	1.809	1.301	0.925	0.667	0.261	0.261	0.261
310	3.766	2.899	1.863	1.326	0.955	0.695	0.261	0.261	0.261
315	3.810	2.950	1.917	1.351	0.985	0.724	0.261	0.261	0.261
320	3.854	3.002	1.970	1.376	1.016	0.752	0.261	0.261	0.261
325	3.898	3.054	2.024	1.401	1.046	0.780	0.261	0.261	0.261
330	3.942	3.105	2.078	1.426	1.076	0.809	0.285	0.261	0.261
335	3.986	3.157	2.132	1.452	1.106	0.837	0.317	0.261	0.261
340	4.031	3.209	2.186	1.477	1.137	0.865	0.349	0.261	0.261
345	4.075	3.260	2.239	1.502	1.167	0.894	0.381	0.261	0.261
350	4.119	3.312	2.293	1.527	1.197	0.922	0.413	0.261	0.261
355	4.163	3.364	2.347	1.552	1.227	0.951	0.446	0.261	0.261
360	4.207	3.415	2.401	1.577	1.257	0.979	0.478	0.261	0.261
365	4.251	3.467	2.460	1.603	1.288	1.007	0.510	0.261	0.261
370	4.295	3.519	2.521	1.628	1.318	1.036	0.542	0.261	0.261
375	4.339	3.570	2.583	1.653	1.348	1.064	0.574	0.261	0.261
380	4.383	3.622	2.645	1.678	1.378	1.092	0.606	0.261	0.261
385	4.427	3.673	2.706	1.768	1.409	1.121	0.638	0.261	0.261

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Table 12: H-Column Sections 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	750°C
30	1.005	0.681	0.333	0.261	0.261	0.261	0.261	0.261	0.261
35	1.249	0.852	0.440	0.261	0.261	0.261	0.261	0.261	0.261
40	1.493	1.023	0.546	0.272	0.261	0.261	0.261	0.261	0.261
45	1.705	1.194	0.653	0.320	0.261	0.261	0.261	0.261	0.261
50	1.784	1.365	0.760	0.367	0.261	0.261	0.261	0.261	0.261
55	1.863	1.536	0.867	0.415	0.261	0.261	0.261	0.261	0.261
60	1.942	1.695	0.973	0.462	0.292	0.261	0.261	0.261	0.261
65	2.022	1.744	1.080	0.510	0.328	0.261	0.261	0.261	0.261
70	2.101	1.794	1.187	0.558	0.364	0.261	0.261	0.261	0.261
75	2.180	1.843	1.294	0.605	0.400	0.261	0.261	0.261	0.261
80	2.259	1.893	1.400	0.653	0.436	0.261	0.261	0.261	0.261
85	2.338	1.942	1.507	0.700	0.472	0.261	0.261	0.261	0.261
90	2.417	1.992	1.614	0.748	0.508	0.261	0.261	0.261	0.261
95	2.583	2.042	1.702	0.796	0.544	0.288	0.261	0.261	0.261
100	2.753	2.091	1.742	0.843	0.580	0.316	0.261	0.261	0.261
105	2.923	2.141	1.782	0.891	0.616	0.344	0.261	0.261	0.261
110	3.093	2.190	1.822	0.938	0.652	0.372	0.261	0.261	0.261
115	3.263	2.240	1.863	0.986	0.688	0.399	0.261	0.261	0.261
120	3.433	2.289	1.903	1.034	0.724	0.427	0.261	0.261	0.261
125	3.485	2.339	1.943	1.081	0.760	0.455	0.261	0.261	0.261
130	3.523	2.388	1.983	1.129	0.796	0.483	0.261	0.261	0.261
135	3.562	2.457	2.024	1.177	0.833	0.511	0.261	0.261	0.261
140	3.600	2.560	2.064	1.224	0.869	0.538	0.261	0.261	0.261
145	3.638	2.663	2.104	1.272	0.905	0.566	0.261	0.261	0.261
150	3.677	2.767	2.144	1.319	0.941	0.594	0.261	0.261	0.261
155	3.715	2.870	2.185	1.367	0.977	0.622	0.261	0.261	0.261
160	3.754	2.973	2.225	1.415	1.013	0.650	0.261	0.261	0.261
165	3.792	3.077	2.265	1.462	1.049	0.677	0.261	0.261	0.261
170	3.831	3.180	2.305	1.510	1.085	0.705	0.261	0.261	0.261
175	3.869	3.283	2.346	1.557	1.121	0.733	0.261	0.261	0.261
180	3.908	3.387	2.386	1.605	1.157	0.761	0.261	0.261	0.261
185	3.946	3.465	2.428	1.653	1.193	0.789	0.261	0.261	0.261
190	3.984	3.502	2.481	1.704	1.229	0.816	0.261	0.261	0.261
195	4.023	3.540	2.534	1.769	1.265	0.844	0.261	0.261	0.261
200	4.061	3.577	2.587	1.834	1.301	0.872	0.261	0.261	0.261
205	4.100	3.615	2.640	1.898	1.337	0.900	0.261	0.261	0.261
210	4.138	3.652	2.693	1.963	1.373	0.928	0.261	0.261	0.261
215	4.177	3.690	2.746	2.028	1.409	0.955	0.261	0.261	0.261
220	4.215	3.728	2.799	2.093	1.445	0.983	0.261	0.261	0.261
225	4.254	3.765	2.852	2.158	1.481	1.011	0.261	0.261	0.261
230	4.292	3.803	2.906	2.223	1.517	1.039	0.261	0.261	0.261
235	4.331	3.840	2.959	2.288	1.553	1.067	0.290	0.261	0.261
240	4.369	3.878	3.012	2.353	1.589	1.094	0.335	0.261	0.261
245	4.407	3.915	3.065	2.418	1.625	1.122	0.380	0.261	0.261
250	4.446	3.953	3.118	2.475	1.661	1.150	0.426	0.261	0.261
255	4.484	3.991	3.171	2.532	1.700	1.178	0.471	0.261	0.261
260	4.523	4.028	3.224	2.589	1.751	1.206	0.516	0.261	0.261
265	4.561	4.066	3.277	2.646	1.802	1.233	0.561	0.261	0.261
270	4.600	4.103	3.330	2.703	1.853	1.261	0.607	0.261	0.261
275	4.638	4.141	3.383	2.760	1.904	1.289	0.652	0.292	0.261
280	4.677	4.178	3.436	2.817	1.955	1.317	0.697	0.335	0.261
285	4.715	4.216	3.489	2.874	2.006	1.345	0.742	0.378	0.261
290	4.753	4.254	3.542	2.931	2.057	1.372	0.787	0.421	0.261
295	4.792	4.291	3.595	2.988	2.107	1.400	0.833	0.464	0.261
300	4.830	4.329	3.648	3.045	2.158	1.428	0.878	0.507	0.261
305	4.869	4.366	3.702	3.102	2.209	1.456	0.923	0.550	0.261
310	4.907	4.404	3.755	3.159	2.260	1.484	0.968	0.593	0.261
315	4.946	4.441	3.808	3.216	2.311	1.511	1.014	0.636	0.261
320	4.984	4.479	3.861	3.273	2.362	1.539	1.059	0.679	0.261
325	5.023	4.517	3.914	3.330	2.413	1.567	1.104	0.723	0.261
330	5.061	4.554	3.967	3.387	2.485	1.595	1.149	0.766	0.261
335	5.100	4.592	4.020	3.444	2.560	1.623	1.194	0.809	0.294
340	5.138	4.629	4.073	3.501	2.635	1.650	1.240	0.852	0.337
345	5.176	4.667	4.126	3.559	2.710	1.678	1.285	0.895	0.380
350	5.215	4.704	4.179	3.616	2.785	1.789	1.330	0.938	0.423
355	5.253	4.742	4.232	3.673	2.860	1.962	1.375	0.981	0.466
360	5.292	4.780	4.285	3.730	2.935	2.135	1.421	1.024	0.509
365	5.330	4.817	4.338	3.787	3.010	2.308	1.466	1.067	0.552
370	-	4.855	4.391	3.844	3.085	2.454	1.511	1.110	0.595
375	-	4.892	4.445	3.901	3.160	2.549	1.556	1.153	0.639
380	-	4.930	4.498	3.958	3.235	2.643	1.601	1.196	0.682
385	-	4.967	4.551	4.015	3.310	2.738	1.647	1.239	0.725

Thickness is intumescent only. Results also apply to I-section beams exposed on all four sides.

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CERTIFICATE No CF 5300
SHERWIN-WILLIAMS PROTECTIVE & MARINE COATINGS

Table 13: H-Column Sections 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	750°C
30	1.832	1.216	0.927	0.445	0.261	0.261	0.261	0.261	0.261
35	2.227	1.480	1.154	0.556	0.327	0.261	0.261	0.261	0.261
40	2.622	1.744	1.381	0.668	0.406	0.288	0.261	0.261	0.261
45	3.016	1.813	1.608	0.779	0.486	0.336	0.261	0.261	0.261
50	3.411	1.882	1.723	0.890	0.566	0.384	0.261	0.261	0.261
55	3.597	1.951	1.775	1.001	0.645	0.431	0.261	0.261	0.261
60	3.759	2.019	1.828	1.113	0.725	0.479	0.261	0.261	0.261
65	3.922	2.088	1.880	1.224	0.805	0.527	0.261	0.261	0.261
70	4.084	2.157	1.932	1.335	0.884	0.574	0.261	0.261	0.261
75	4.247	2.226	1.984	1.446	0.964	0.622	0.261	0.261	0.261
80	4.409	2.294	2.037	1.558	1.044	0.670	0.261	0.261	0.261
85	4.572	2.363	2.089	1.669	1.123	0.717	0.261	0.261	0.261
90	4.734	2.467	2.141	1.738	1.203	0.765	0.261	0.261	0.261
95	4.897	2.738	2.193	1.798	1.283	0.813	0.261	0.261	0.261
100	5.059	3.008	2.246	1.857	1.362	0.860	0.261	0.261	0.261
105	5.222	3.279	2.298	1.917	1.442	0.908	0.263	0.261	0.261
110	-	3.469	2.350	1.976	1.522	0.956	0.314	0.261	0.261
115	-	3.522	2.402	2.036	1.601	1.003	0.366	0.261	0.261
120	-	3.575	2.552	2.095	1.681	1.051	0.417	0.261	0.261
125	-	3.628	2.751	2.155	1.741	1.099	0.469	0.261	0.261
130	-	3.681	2.949	2.214	1.798	1.146	0.520	0.261	0.261
135	-	3.733	3.148	2.274	1.856	1.194	0.572	0.261	0.261
140	-	3.786	3.347	2.333	1.913	1.242	0.623	0.261	0.261
145	-	3.839	3.468	2.393	1.971	1.289	0.675	0.261	0.261
150	-	3.892	3.507	2.451	2.028	1.337	0.727	0.261	0.261
155	-	3.945	3.545	2.507	2.086	1.385	0.778	0.261	0.261
160	-	3.997	3.583	2.564	2.143	1.432	0.830	0.261	0.261
165	-	4.050	3.621	2.620	2.201	1.480	0.881	0.261	0.261
170	-	4.103	3.660	2.677	2.258	1.528	0.933	0.261	0.261
175	-	4.156	3.698	2.733	2.316	1.575	0.984	0.261	0.261
180	-	4.208	3.736	2.790	2.373	1.623	1.036	0.261	0.261
185	-	4.261	3.774	2.846	2.431	1.671	1.087	0.261	0.261
190	-	4.314	3.812	2.903	2.492	1.738	1.139	0.261	0.261
195	-	4.367	3.851	2.959	2.553	1.820	1.190	0.261	0.261
200	-	4.420	3.889	3.016	2.614	1.901	1.242	0.261	0.261
205	-	4.472	3.927	3.072	2.675	1.982	1.293	0.261	0.261
210	-	4.525	3.965	3.129	2.736	2.064	1.345	0.292	0.261
215	-	4.578	4.004	3.185	2.797	2.145	1.396	0.361	0.261
220	-	4.631	4.042	3.242	2.858	2.227	1.448	0.430	0.261
225	-	4.684	4.080	3.298	2.918	2.308	1.499	0.498	0.261
230	-	4.736	4.118	3.355	2.979	2.389	1.551	0.567	0.261
235	-	4.789	4.157	3.411	3.040	2.469	1.602	0.636	0.261
240	-	4.842	4.195	3.468	3.101	2.547	1.654	0.705	0.261
245	-	4.895	4.233	3.524	3.162	2.624	1.711	0.773	0.261
250	-	4.947	4.271	3.581	3.223	2.702	1.780	0.842	0.297
255	-	5.000	4.309	3.637	3.284	2.780	1.848	0.911	0.355
260	-	5.053	4.348	3.694	3.345	2.858	1.917	0.980	0.413
265	-	5.106	4.386	3.750	3.405	2.936	1.986	1.048	0.471
270	-	5.159	4.424	3.807	3.466	3.014	2.055	1.117	0.529
275	-	5.211	4.462	3.863	3.527	3.092	2.124	1.186	0.587
280	-	5.264	4.501	3.920	3.588	3.169	2.193	1.255	0.644
285	-	5.317	4.539	3.976	3.649	3.247	2.262	1.323	0.702
290	-	-	4.577	4.033	3.710	3.325	2.331	1.392	0.760
295	-	-	4.615	4.089	3.771	3.403	2.399	1.461	0.818
300	-	-	4.653	4.146	3.832	3.481	2.506	1.530	0.876
305	-	-	4.692	4.202	3.893	3.559	2.629	1.598	0.934
310	-	-	4.730	4.259	3.953	3.637	2.753	1.667	0.991
315	-	-	4.768	4.315	4.014	3.715	2.876	1.742	1.049
320	-	-	4.806	4.372	4.075	3.792	2.999	1.819	1.107
325	-	-	4.845	4.428	4.136	3.870	3.122	1.897	1.165
330	-	-	4.883	4.485	4.197	3.948	3.245	1.974	1.223
335	-	-	4.921	4.541	4.258	4.026	3.368	2.052	1.281
340	-	-	4.959	4.598	4.319	4.104	3.491	2.129	1.339
345	-	-	4.997	4.654	4.380	4.182	3.614	2.207	1.396
350	-	-	5.036	4.711	4.441	4.260	3.737	2.284	1.454
355	-	-	5.074	4.767	4.501	4.338	3.861	2.362	1.512
360	-	-	5.112	4.824	4.562	4.415	3.984	2.436	1.570
365	-	-	5.150	4.880	4.623	4.493	4.107	2.501	1.628
370	-	-	5.189	4.937	4.684	4.571	4.230	2.566	1.686
375	-	-	5.227	4.993	4.745	4.649	4.353	2.631	1.768
380	-	-	5.265	5.050	4.806	4.727	4.476	2.696	1.853
385	-	-	5.303	5.106	4.867	4.805	4.599	2.761	1.937

Thickness is intumescent only. Results also apply to I-section beams exposed on all four sides.

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CERTIFICATE No CF 5300
SHERWIN-WILLIAMS PROTECTIVE & MARINE COATINGS

Table 14: H-Column Sections 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	750°C
30	3.567	2.286	1.674	0.774	0.537	0.417	0.261	0.261	0.261
35	3.975	2.546	1.741	0.953	0.675	0.515	0.267	0.261	0.261
40	4.383	2.807	1.808	1.132	0.813	0.613	0.338	0.261	0.261
45	4.791	3.067	1.876	1.310	0.951	0.711	0.408	0.261	0.261
50	5.199	3.327	1.943	1.489	1.090	0.809	0.479	0.261	0.261
55	-	3.533	2.011	1.667	1.228	0.907	0.549	0.261	0.261
60	-	3.689	2.078	1.754	1.366	1.005	0.620	0.261	0.261
65	-	3.846	2.145	1.828	1.504	1.102	0.691	0.288	0.261
70	-	4.003	2.213	1.901	1.642	1.200	0.761	0.337	0.261
75	-	4.160	2.280	1.975	1.732	1.298	0.832	0.387	0.261
80	-	4.316	2.348	2.048	1.797	1.396	0.903	0.437	0.261
85	-	4.473	2.415	2.122	1.861	1.494	0.973	0.487	0.261
90	-	4.630	3.106	2.195	1.926	1.592	1.044	0.537	0.261
95	-	4.786	3.485	2.269	1.990	1.690	1.115	0.587	0.261
100	-	4.943	3.549	2.342	2.055	1.749	1.185	0.637	0.261
105	-	5.100	3.613	2.416	2.119	1.807	1.256	0.687	0.261
110	-	5.257	3.677	2.748	2.184	1.866	1.327	0.737	0.261
115	-	-	3.742	3.095	2.248	1.925	1.397	0.787	0.261
120	-	-	3.806	3.442	2.313	1.983	1.468	0.836	0.261
125	-	-	3.870	3.502	2.378	2.042	1.538	0.886	0.261
130	-	-	3.935	3.555	2.501	2.100	1.609	0.936	0.261
135	-	-	3.999	3.608	2.737	2.159	1.680	0.986	0.261
140	-	-	4.063	3.661	2.973	2.218	1.749	1.036	0.261
145	-	-	4.128	3.714	3.210	2.276	1.817	1.086	0.261
150	-	-	4.192	3.767	3.446	2.335	1.886	1.136	0.261
155	-	-	4.256	3.820	3.497	2.393	1.954	1.186	0.261
160	-	-	4.321	3.874	3.544	2.527	2.023	1.236	0.261
165	-	-	4.385	3.927	3.592	2.723	2.091	1.286	0.261
170	-	-	4.449	3.980	3.639	2.919	2.160	1.336	0.261
175	-	-	4.513	4.033	3.687	3.116	2.228	1.385	0.261
180	-	-	4.578	4.086	3.734	3.312	2.297	1.435	0.261
185	-	-	4.642	4.139	3.782	3.466	2.365	1.485	0.261
190	-	-	4.706	4.192	3.830	3.522	2.439	1.535	0.261
195	-	-	4.771	4.245	3.877	3.578	2.532	1.585	0.261
200	-	-	4.835	4.298	3.925	3.633	2.625	1.635	0.332
205	-	-	4.899	4.351	3.972	3.689	2.718	1.685	0.499
210	-	-	4.964	4.404	4.020	3.744	2.811	1.805	0.667
215	-	-	5.028	4.458	4.067	3.800	2.904	1.934	0.834
220	-	-	5.092	4.511	4.115	3.856	2.997	2.063	1.002
225	-	-	5.157	4.564	4.162	3.911	3.090	2.192	1.169
230	-	-	5.221	4.617	4.210	3.967	3.183	2.321	1.337
235	-	-	5.285	4.670	4.257	4.022	3.276	2.433	1.505
240	-	-	5.349	4.723	4.305	4.078	3.369	2.492	1.672
245	-	-	-	4.776	4.352	4.133	3.462	2.551	1.732
250	-	-	-	4.829	4.400	4.189	3.555	2.610	1.780
255	-	-	-	4.882	4.448	4.245	3.648	2.668	1.827
260	-	-	-	4.935	4.495	4.300	3.741	2.727	1.874
265	-	-	-	4.988	4.543	4.356	3.834	2.786	1.922
270	-	-	-	5.042	4.590	4.411	3.927	2.845	1.969
275	-	-	-	5.095	4.638	4.467	4.020	2.904	2.017
280	-	-	-	5.148	4.685	4.523	4.113	2.962	2.064
285	-	-	-	5.201	4.733	4.578	4.206	3.021	2.111
290	-	-	-	5.254	4.780	4.634	4.299	3.080	2.159
295	-	-	-	5.307	4.828	4.689	4.392	3.139	2.206
300	-	-	-	5.360	4.875	4.745	4.485	3.197	2.253
305	-	-	-	-	4.923	4.800	4.578	3.256	2.301
310	-	-	-	-	4.971	4.856	4.671	3.315	2.348
315	-	-	-	-	5.018	4.912	4.764	3.374	2.396
320	-	-	-	-	5.066	4.967	4.857	3.432	2.453
325	-	-	-	-	5.113	5.023	4.950	3.491	2.522
330	-	-	-	-	5.161	5.078	5.042	3.550	2.591
335	-	-	-	-	5.208	5.135	5.135	3.609	2.660
340	-	-	-	-	5.256	5.228	5.228	3.667	2.729
345	-	-	-	-	5.303	5.321	5.321	3.726	2.798
350	-	-	-	-	-	-	-	3.785	2.866
355	-	-	-	-	-	-	-	3.844	2.935
360	-	-	-	-	-	-	-	3.903	3.004
365	-	-	-	-	-	-	-	3.961	3.073
370	-	-	-	-	-	-	-	4.020	3.142
375	-	-	-	-	-	-	-	4.079	3.211
380	-	-	-	-	-	-	-	4.138	3.279
385	-	-	-	-	-	-	-	4.196	3.348

Thickness is intumescent only. Results also apply to I-section beams exposed on all four sides.

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SHERWIN-WILLIAMS PROTECTIVE & MARINE COATINGS

Table 15: H-Column Sections 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	750°C
30	-	3.278	2.416	1.139	0.846	0.690	0.447	0.261	0.261
35	-	3.661	2.683	1.387	1.046	0.838	0.567	0.347	0.261
40	-	4.045	2.950	1.634	1.247	0.987	0.686	0.432	0.261
45	-	4.429	3.217	1.889	1.447	1.135	0.806	0.517	0.261
50	-	4.813	3.476	2.147	1.647	1.284	0.926	0.602	0.261
55	-	5.197	3.682	2.404	1.751	1.433	1.045	0.688	0.261
60	-	-	3.888	2.661	1.828	1.581	1.165	0.773	0.327
65	-	-	4.094	2.919	1.905	1.708	1.284	0.858	0.403
70	-	-	4.299	3.176	1.982	1.774	1.404	0.943	0.479
75	-	-	4.505	3.433	2.059	1.840	1.524	1.028	0.555
80	-	-	4.711	3.556	2.136	1.906	1.643	1.114	0.631
85	-	-	4.917	3.668	2.213	1.972	1.729	1.199	0.707
90	-	-	5.123	3.781	2.290	2.037	1.794	1.284	0.783
95	-	-	5.329	3.894	2.367	2.103	1.858	1.369	0.859
100	-	-	-	4.007	2.613	2.169	1.922	1.455	0.935
105	-	-	-	4.119	3.239	2.235	1.987	1.540	1.010
110	-	-	-	4.232	3.496	2.301	2.051	1.625	1.086
115	-	-	-	4.345	3.565	2.367	2.115	1.707	1.162
120	-	-	-	4.458	3.635	2.521	2.180	1.780	1.238
125	-	-	-	4.571	3.704	3.021	2.244	1.853	1.314
130	-	-	-	4.683	3.773	3.460	2.308	1.926	1.390
135	-	-	-	4.796	3.843	3.526	2.373	1.998	1.466
140	-	-	-	4.909	3.912	3.592	2.521	2.071	1.542
145	-	-	-	5.022	3.981	3.658	2.905	2.144	1.618
150	-	-	-	5.134	4.051	3.725	3.288	2.217	1.694
155	-	-	-	5.247	4.120	3.791	3.489	2.289	1.766
160	-	-	-	5.360	4.189	3.857	3.557	2.362	1.839
165	-	-	-	-	4.259	3.924	3.624	2.432	1.911
170	-	-	-	-	4.328	3.990	3.692	2.491	1.984
175	-	-	-	-	4.397	4.056	3.759	2.550	2.057
180	-	-	-	-	4.467	4.122	3.827	2.609	2.129
185	-	-	-	-	4.536	4.189	3.894	2.668	2.202
190	-	-	-	-	4.605	4.255	3.962	2.728	2.274
195	-	-	-	-	4.675	4.321	4.029	2.787	2.347
200	-	-	-	-	4.744	4.388	4.097	2.846	2.419
205	-	-	-	-	4.813	4.454	4.164	2.905	2.477
210	-	-	-	-	4.883	4.520	4.232	2.964	2.535
215	-	-	-	-	4.952	4.587	4.299	3.023	2.593
220	-	-	-	-	5.021	4.653	4.367	3.082	2.651
225	-	-	-	-	5.091	4.719	4.434	3.141	2.709
230	-	-	-	-	5.160	4.785	4.502	3.200	2.767
235	-	-	-	-	5.229	4.852	4.569	3.260	2.825
240	-	-	-	-	5.299	4.918	4.637	3.319	2.883
245	-	-	-	-	-	4.984	4.704	3.378	2.940
250	-	-	-	-	-	5.051	4.772	3.437	2.998
255	-	-	-	-	-	5.117	4.839	3.496	3.056
260	-	-	-	-	-	5.183	4.907	3.555	3.114
265	-	-	-	-	-	5.249	4.974	3.614	3.172
270	-	-	-	-	-	5.316	5.042	3.673	3.230
275	-	-	-	-	-	-	5.109	3.732	3.288
280	-	-	-	-	-	-	5.177	3.792	3.346
285	-	-	-	-	-	-	5.245	3.851	3.404
290	-	-	-	-	-	-	5.312	3.910	3.461
295	-	-	-	-	-	-	-	3.969	3.519
300	-	-	-	-	-	-	-	4.028	3.577
305	-	-	-	-	-	-	-	4.087	3.635
310	-	-	-	-	-	-	-	4.146	3.693
315	-	-	-	-	-	-	-	4.205	3.751
320	-	-	-	-	-	-	-	4.264	3.809
325	-	-	-	-	-	-	-	4.324	3.867
330	-	-	-	-	-	-	-	4.383	3.924
335	-	-	-	-	-	-	-	4.442	3.982
340	-	-	-	-	-	-	-	4.501	4.040
345	-	-	-	-	-	-	-	4.560	4.098
350	-	-	-	-	-	-	-	4.619	4.156
355	-	-	-	-	-	-	-	4.678	4.214
360	-	-	-	-	-	-	-	4.737	4.272
365	-	-	-	-	-	-	-	4.796	4.330
370	-	-	-	-	-	-	-	4.856	4.388
375	-	-	-	-	-	-	-	4.915	4.445
380	-	-	-	-	-	-	-	4.974	4.503
385	-	-	-	-	-	-	-	5.033	4.561

Thickness is intumescent only. Results also apply to I-section beams exposed on all four sides.

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CERTIFICATE No CF 5300
SHERWIN-WILLIAMS PROTECTIVE & MARINE COATINGS

Table 16: H-Column Sections 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	750°C
30	-	-	3.153	1.542	0.967	0.966	0.703	0.500	0.261
35	-	-	3.555	1.968	1.340	1.169	0.875	0.631	0.353
40	-	-	3.958	2.551	1.713	1.371	1.047	0.763	0.468
45	-	-	4.360	3.133	2.025	1.574	1.219	0.895	0.583
50	-	-	4.763	3.572	2.337	1.722	1.391	1.026	0.699
55	-	-	5.165	3.837	2.649	1.799	1.563	1.158	0.814
60	-	-	-	4.103	2.962	1.875	1.709	1.290	0.930
65	-	-	-	4.369	3.274	1.951	1.781	1.421	1.045
70	-	-	-	4.635	3.525	2.028	1.852	1.553	1.160
75	-	-	-	4.901	3.698	2.104	1.924	1.685	1.276
80	-	-	-	5.167	3.871	2.180	1.996	1.759	1.391
85	-	-	-	-	4.043	2.257	2.068	1.830	1.507
90	-	-	-	-	4.216	2.333	2.139	1.902	1.622
95	-	-	-	-	4.389	2.409	2.211	1.973	1.718
100	-	-	-	-	4.561	3.454	2.283	2.045	1.787
105	-	-	-	-	4.734	3.548	2.355	2.116	1.856
110	-	-	-	-	4.906	3.642	2.539	2.188	1.925
115	-	-	-	-	5.079	3.736	3.470	2.259	1.993
120	-	-	-	-	5.252	3.830	3.540	2.331	2.062
125	-	-	-	-	-	3.924	3.610	2.402	2.131
130	-	-	-	-	-	4.019	3.680	2.946	2.200
135	-	-	-	-	-	4.113	3.751	3.462	2.269
140	-	-	-	-	-	4.207	3.821	3.505	2.337
145	-	-	-	-	-	4.301	3.891	3.549	2.406
150	-	-	-	-	-	4.395	3.961	3.592	2.468
155	-	-	-	-	-	4.489	4.031	3.635	2.527
160	-	-	-	-	-	4.583	4.101	3.679	2.586
165	-	-	-	-	-	4.677	4.171	3.722	2.646
170	-	-	-	-	-	4.771	4.241	3.765	2.705
175	-	-	-	-	-	4.866	4.311	3.809	2.765
180	-	-	-	-	-	4.960	4.381	3.852	2.824
185	-	-	-	-	-	5.054	4.452	3.895	2.883
190	-	-	-	-	-	5.148	4.522	3.938	2.943
195	-	-	-	-	-	5.242	4.592	3.982	3.002
200	-	-	-	-	-	5.336	4.662	4.025	3.062
205	-	-	-	-	-	-	4.732	4.068	3.121
210	-	-	-	-	-	-	4.802	4.112	3.181
215	-	-	-	-	-	-	4.872	4.155	3.240
220	-	-	-	-	-	-	4.942	4.198	3.299
225	-	-	-	-	-	-	5.012	4.241	3.359
230	-	-	-	-	-	-	5.082	4.285	3.418
235	-	-	-	-	-	-	5.153	4.328	3.478
240	-	-	-	-	-	-	5.223	4.371	3.537
245	-	-	-	-	-	-	5.293	4.415	3.597
250	-	-	-	-	-	-	5.363	4.458	3.656
255	-	-	-	-	-	-	-	4.501	3.715
260	-	-	-	-	-	-	-	4.544	3.775
265	-	-	-	-	-	-	-	4.588	3.834
270	-	-	-	-	-	-	-	4.631	3.894
275	-	-	-	-	-	-	-	4.674	3.953
280	-	-	-	-	-	-	-	4.718	4.013
285	-	-	-	-	-	-	-	4.761	4.072
290	-	-	-	-	-	-	-	4.804	4.131
295	-	-	-	-	-	-	-	4.847	4.191
300	-	-	-	-	-	-	-	4.891	4.250
305	-	-	-	-	-	-	-	4.934	4.310
310	-	-	-	-	-	-	-	4.977	4.369
315	-	-	-	-	-	-	-	5.021	4.429
320	-	-	-	-	-	-	-	5.064	4.488
325	-	-	-	-	-	-	-	5.107	4.547
330	-	-	-	-	-	-	-	5.150	4.607
335	-	-	-	-	-	-	-	5.194	4.666
340	-	-	-	-	-	-	-	5.237	4.726
345	-	-	-	-	-	-	-	5.280	4.785
350	-	-	-	-	-	-	-	5.324	4.845
355	-	-	-	-	-	-	-	5.367	4.904
360	-	-	-	-	-	-	-	-	4.963
365	-	-	-	-	-	-	-	-	5.023
370	-	-	-	-	-	-	-	-	5.082
375	-	-	-	-	-	-	-	-	5.142
380	-	-	-	-	-	-	-	-	5.201
385	-	-	-	-	-	-	-	-	5.261

Thickness is intumescent only. Results also apply to I-section beams exposed on all four sides.

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SHERWIN-WILLIAMS PROTECTIVE & MARINE COATINGS

Table 17: RHS and CHS 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	520°C	550°C	600°C	650°C	700°C	750°C
40	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
45	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
50	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
55	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
60	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
65	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
70	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
75	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
80	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
85	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
90	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
95	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
100	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
105	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
110	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
115	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
120	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
125	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
130	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
135	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
140	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
145	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
150	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
155	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
160	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
165	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
170	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
175	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
185	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
190	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
195	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
200	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
205	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
210	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
215	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
220	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
225	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
230	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
235	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
240	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
245	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
250	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
255	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
260	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
265	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
270	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
275	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
280	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
285	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
290	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
295	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
300	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
305	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180

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Table 18: RHS and CHS 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	520°C	550°C	600°C	650°C	700°C	750°C
40	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
45	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
50	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
55	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
60	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
65	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
70	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
75	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
80	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
85	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
90	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
95	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
100	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
105	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
110	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
115	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
120	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
125	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
130	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
135	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
140	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
145	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
150	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
155	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
160	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
165	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
170	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
175	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
185	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
190	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
195	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
200	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
205	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
210	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
215	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
220	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
225	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
230	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
235	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
240	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
245	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
250	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
255	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
260	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
265	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
270	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
275	4.188	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
280	4.249	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
285	4.309	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
290	4.370	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
295	4.431	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
300	4.492	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
305	4.553	4.236	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180

Thickness is intumescent only.

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CERTIFICATE No CF 5300
SHERWIN-WILLIAMS PROTECTIVE & MARINE COATINGS

Table 19: RHS and CHS 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	520°C	550°C	600°C	650°C	700°C	750°C
40	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
45	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
50	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
55	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
60	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
65	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
70	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
75	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
80	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
85	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
90	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
95	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
100	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
105	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
110	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
115	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
120	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
125	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
130	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
135	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
140	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
145	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
150	4.243	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
155	4.313	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
160	4.383	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
165	4.452	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
170	4.522	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
175	4.592	4.196	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
180	4.662	4.271	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
185	4.732	4.346	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
190	4.802	4.421	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
195	4.872	4.496	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
200	4.942	4.571	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
205	5.012	4.646	4.207	4.180	4.180	4.180	4.180	4.180	4.180	4.180
210	5.081	4.721	4.294	4.180	4.180	4.180	4.180	4.180	4.180	4.180
215	5.151	4.796	4.380	4.180	4.180	4.180	4.180	4.180	4.180	4.180
220	5.221	4.870	4.467	4.180	4.180	4.180	4.180	4.180	4.180	4.180
225	5.291	4.945	4.553	4.197	4.180	4.180	4.180	4.180	4.180	4.180
230	5.361	5.020	4.639	4.292	4.182	4.180	4.180	4.180	4.180	4.180
235	5.431	5.095	4.726	4.388	4.278	4.180	4.180	4.180	4.180	4.180
240	5.501	5.170	4.812	4.483	4.375	4.217	4.180	4.180	4.180	4.180
245	5.571	5.245	4.899	4.579	4.472	4.317	4.180	4.180	4.180	4.180
250	5.641	5.320	4.985	4.674	4.568	4.416	4.180	4.180	4.180	4.180
255	5.711	5.395	5.072	4.770	4.665	4.516	4.189	4.180	4.180	4.180
260	5.780	5.470	5.158	4.866	4.762	4.615	4.290	4.180	4.180	4.180
265	5.850	5.545	5.244	4.961	4.858	4.715	4.391	4.180	4.180	4.180
270	5.920	5.620	5.331	5.057	4.955	4.815	4.493	4.180	4.180	4.180
275	5.990	5.694	5.417	5.152	5.052	4.914	4.594	4.180	4.180	4.180
280	6.060	5.769	5.504	5.248	5.149	5.014	4.695	4.229	4.180	4.180
285	6.130	5.844	5.590	5.343	5.245	5.113	4.796	4.332	4.180	4.180
290	6.200	5.919	5.676	5.439	5.342	5.213	4.898	4.436	4.180	4.180
295	6.270	5.994	5.763	5.534	5.439	5.312	4.999	4.539	4.180	4.180
300	6.340	6.069	5.849	5.630	5.535	5.412	5.100	4.643	4.180	4.180
305	6.410	6.144	5.936	5.725	5.632	5.512	5.201	4.746	4.180	4.180

Thickness is intumescent only.

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CERTIFICATE No CF 5300
SHERWIN-WILLIAMS PROTECTIVE & MARINE COATINGS

Table 20: RHS and CHS 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	520°C	550°C	600°C	650°C	700°C	750°C
40	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
45	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
50	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
55	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
60	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
65	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
70	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
75	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
80	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
85	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
90	4.278	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
95	4.449	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
100	4.619	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
105	4.790	4.316	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
110	4.960	4.465	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
115	5.131	4.614	4.243	4.180	4.180	4.180	4.180	4.180	4.180	4.180
120	5.301	4.762	4.382	4.180	4.180	4.180	4.180	4.180	4.180	4.180
125	5.472	4.911	4.521	4.180	4.180	4.180	4.180	4.180	4.180	4.180
130	5.642	5.060	4.660	4.304	4.180	4.180	4.180	4.180	4.180	4.180
135	5.813	5.209	4.799	4.439	4.281	4.180	4.180	4.180	4.180	4.180
140	5.983	5.358	4.939	4.575	4.415	4.180	4.180	4.180	4.180	4.180
145	6.154	5.506	5.078	4.711	4.549	4.308	4.180	4.180	4.180	4.180
150	6.324	5.655	5.217	4.846	4.683	4.445	4.180	4.180	4.180	4.180
155	6.495	5.804	5.356	4.982	4.817	4.582	4.180	4.180	4.180	4.180
160	6.665	5.953	5.495	5.118	4.951	4.719	4.243	4.180	4.180	4.180
165	-	6.102	5.635	5.253	5.085	4.856	4.378	4.180	4.180	4.180
170	-	6.251	5.774	5.389	5.219	4.992	4.513	4.180	4.180	4.180
175	-	6.399	5.913	5.525	5.353	5.129	4.648	4.180	4.180	4.180
180	-	6.548	6.052	5.660	5.487	5.266	4.782	4.180	4.180	4.180
185	-	-	6.191	5.796	5.621	5.403	4.917	4.293	4.180	4.180
190	-	-	6.331	5.932	5.755	5.540	5.052	4.429	4.180	4.180
195	-	-	6.470	6.067	5.889	5.676	5.186	4.566	4.180	4.180
200	-	-	6.609	6.203	6.023	5.813	5.321	4.702	4.180	4.180
205	-	-	-	6.339	6.157	5.950	5.456	4.839	4.180	4.180
210	-	-	-	6.474	6.291	6.087	5.590	4.975	4.180	4.180
215	-	-	-	6.610	6.425	6.224	5.725	5.112	4.182	4.180
220	-	-	-	-	6.559	6.360	5.860	5.249	4.328	4.180
225	-	-	-	-	-	6.497	5.994	5.385	4.474	4.180
230	-	-	-	-	-	6.634	6.129	5.522	4.620	4.180
235	-	-	-	-	-	-	6.264	5.658	4.766	4.180
240	-	-	-	-	-	-	6.398	5.795	4.912	4.180
245	-	-	-	-	-	-	6.533	5.931	5.058	4.180
250	-	-	-	-	-	-	6.668	6.068	5.204	4.342
255	-	-	-	-	-	-	-	6.205	5.350	4.509
260	-	-	-	-	-	-	-	6.341	5.496	4.676
265	-	-	-	-	-	-	-	6.478	5.641	4.842
270	-	-	-	-	-	-	-	6.614	5.787	5.009
275	-	-	-	-	-	-	-	-	5.933	5.176
280	-	-	-	-	-	-	-	-	6.079	5.342
285	-	-	-	-	-	-	-	-	6.225	5.509
290	-	-	-	-	-	-	-	-	6.371	5.676
295	-	-	-	-	-	-	-	-	6.517	5.843
300	-	-	-	-	-	-	-	-	6.663	6.009
305	-	-	-	-	-	-	-	-	-	6.176

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SHERWIN-WILLIAMS PROTECTIVE & MARINE COATINGS

Table 21: RHS and CHS 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	520°C	550°C	600°C	650°C	700°C	750°C
40	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
45	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
50	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
55	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
60	4.200	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
65	4.663	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
70	5.126	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
75	5.589	4.534	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
80	6.051	4.936	4.306	4.180	4.180	4.180	4.180	4.180	4.180	4.180
85	6.514	5.338	4.618	4.180	4.180	4.180	4.180	4.180	4.180	4.180
90	-	5.740	4.930	4.397	4.220	4.180	4.180	4.180	4.180	4.180
95	-	6.142	5.242	4.652	4.463	4.187	4.180	4.180	4.180	4.180
100	-	6.544	5.554	4.906	4.705	4.430	4.180	4.180	4.180	4.180
105	-	-	5.866	5.161	4.948	4.674	4.180	4.180	4.180	4.180
110	-	-	6.178	5.415	5.190	4.917	4.398	4.180	4.180	4.180
115	-	-	6.490	5.670	5.433	5.160	4.631	4.180	4.180	4.180
120	-	-	-	5.925	5.675	5.403	4.864	4.243	4.180	4.180
125	-	-	-	6.179	5.918	5.647	5.097	4.470	4.180	4.180
130	-	-	-	6.434	6.160	5.890	5.330	4.697	4.180	4.180
135	-	-	-	-	6.403	6.133	5.563	4.925	4.180	4.180
140	-	-	-	-	6.645	6.376	5.796	5.152	4.313	4.180
145	-	-	-	-	-	6.619	6.029	5.379	4.528	4.180
150	-	-	-	-	-	-	6.262	5.606	4.742	4.180
155	-	-	-	-	-	-	6.495	5.833	4.956	4.180
160	-	-	-	-	-	-	-	6.061	5.171	4.180
165	-	-	-	-	-	-	-	6.288	5.385	4.276
170	-	-	-	-	-	-	-	6.515	5.600	4.509
175	-	-	-	-	-	-	-	-	5.814	4.742
180	-	-	-	-	-	-	-	-	6.029	4.975
185	-	-	-	-	-	-	-	-	6.243	5.208
190	-	-	-	-	-	-	-	-	6.458	5.441
195	-	-	-	-	-	-	-	-	6.672	5.674
200	-	-	-	-	-	-	-	-	-	5.907
205	-	-	-	-	-	-	-	-	-	6.141
210	-	-	-	-	-	-	-	-	-	6.374
215	-	-	-	-	-	-	-	-	-	6.607
220	-	-	-	-	-	-	-	-	-	-
225	-	-	-	-	-	-	-	-	-	-
230	-	-	-	-	-	-	-	-	-	-
235	-	-	-	-	-	-	-	-	-	-
240	-	-	-	-	-	-	-	-	-	-
245	-	-	-	-	-	-	-	-	-	-
250	-	-	-	-	-	-	-	-	-	-
255	-	-	-	-	-	-	-	-	-	-
260	-	-	-	-	-	-	-	-	-	-
265	-	-	-	-	-	-	-	-	-	-
270	-	-	-	-	-	-	-	-	-	-
275	-	-	-	-	-	-	-	-	-	-
280	-	-	-	-	-	-	-	-	-	-
285	-	-	-	-	-	-	-	-	-	-
290	-	-	-	-	-	-	-	-	-	-
295	-	-	-	-	-	-	-	-	-	-
300	-	-	-	-	-	-	-	-	-	-
305	-	-	-	-	-	-	-	-	-	-

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Table 22: RHS and CHS 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	520°C	550°C	600°C	650°C	700°C	750°C
40	-	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
45	-	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
50	-	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
55	-	5.057	4.180	4.180	4.180	4.180	4.180	4.180	4.180	4.180
60	-	5.935	4.677	4.180	4.180	4.180	4.180	4.180	4.180	4.180
65	-	-	5.488	4.298	4.180	4.180	4.180	4.180	4.180	4.180
70	-	-	6.299	5.027	4.549	4.180	4.180	4.180	4.180	4.180
75	-	-	-	5.756	5.237	4.591	4.180	4.180	4.180	4.180
80	-	-	-	6.486	5.924	5.202	4.268	4.180	4.180	4.180
85	-	-	-	-	6.612	5.813	4.742	4.180	4.180	4.180
90	-	-	-	-	-	6.425	5.217	4.310	4.180	4.180
95	-	-	-	-	-	-	5.692	4.678	4.180	4.180
100	-	-	-	-	-	-	6.167	5.046	4.180	4.180
105	-	-	-	-	-	-	6.642	5.415	4.446	4.180
110	-	-	-	-	-	-	-	5.783	4.738	4.180
115	-	-	-	-	-	-	-	6.151	5.029	4.180
120	-	-	-	-	-	-	-	6.520	5.321	4.387
125	-	-	-	-	-	-	-	-	5.613	4.675
130	-	-	-	-	-	-	-	-	5.904	4.964
135	-	-	-	-	-	-	-	-	6.196	5.252
140	-	-	-	-	-	-	-	-	6.487	5.541
145	-	-	-	-	-	-	-	-	-	5.829
150	-	-	-	-	-	-	-	-	-	6.118
155	-	-	-	-	-	-	-	-	-	6.406
160	-	-	-	-	-	-	-	-	-	-
165	-	-	-	-	-	-	-	-	-	-
170	-	-	-	-	-	-	-	-	-	-
175	-	-	-	-	-	-	-	-	-	-
180	-	-	-	-	-	-	-	-	-	-
185	-	-	-	-	-	-	-	-	-	-
190	-	-	-	-	-	-	-	-	-	-
195	-	-	-	-	-	-	-	-	-	-
200	-	-	-	-	-	-	-	-	-	-
205	-	-	-	-	-	-	-	-	-	-
210	-	-	-	-	-	-	-	-	-	-
215	-	-	-	-	-	-	-	-	-	-
220	-	-	-	-	-	-	-	-	-	-
225	-	-	-	-	-	-	-	-	-	-
230	-	-	-	-	-	-	-	-	-	-
235	-	-	-	-	-	-	-	-	-	-
240	-	-	-	-	-	-	-	-	-	-
245	-	-	-	-	-	-	-	-	-	-
250	-	-	-	-	-	-	-	-	-	-
255	-	-	-	-	-	-	-	-	-	-
260	-	-	-	-	-	-	-	-	-	-
265	-	-	-	-	-	-	-	-	-	-
270	-	-	-	-	-	-	-	-	-	-
275	-	-	-	-	-	-	-	-	-	-
280	-	-	-	-	-	-	-	-	-	-
285	-	-	-	-	-	-	-	-	-	-
290	-	-	-	-	-	-	-	-	-	-
295	-	-	-	-	-	-	-	-	-	-
300	-	-	-	-	-	-	-	-	-	-
305	-	-	-	-	-	-	-	-	-	-

Thickness is intumescent only.

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Table 23: RHS and CHS 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	520°C	550°C	600°C	650°C	700°C	750°C
40	-	-	-	4.180	4.180	4.180	4.180	4.180	4.180	4.180
45	-	-	-	4.180	4.180	4.180	4.180	4.180	4.180	4.180
50	-	-	-	4.455	4.180	4.180	4.180	4.180	4.180	4.180
55	-	-	-	5.769	5.097	4.180	4.180	4.180	4.180	4.180
60	-	-	-	-	6.374	5.279	4.180	4.180	4.180	4.180
65	-	-	-	-	-	6.461	4.708	4.180	4.180	4.180
70	-	-	-	-	-	-	5.751	4.180	4.180	4.180
75	-	-	-	-	-	-	-	4.965	4.180	4.180
80	-	-	-	-	-	-	-	5.792	4.261	4.180
85	-	-	-	-	-	-	-	6.619	4.848	4.180
90	-	-	-	-	-	-	-	-	5.435	4.180
95	-	-	-	-	-	-	-	-	6.023	4.559
100	-	-	-	-	-	-	-	-	6.610	4.985
105	-	-	-	-	-	-	-	-	-	5.411
110	-	-	-	-	-	-	-	-	-	5.837
115	-	-	-	-	-	-	-	-	-	6.263
120	-	-	-	-	-	-	-	-	-	-
125	-	-	-	-	-	-	-	-	-	-
130	-	-	-	-	-	-	-	-	-	-
135	-	-	-	-	-	-	-	-	-	-
140	-	-	-	-	-	-	-	-	-	-
145	-	-	-	-	-	-	-	-	-	-
150	-	-	-	-	-	-	-	-	-	-
155	-	-	-	-	-	-	-	-	-	-
160	-	-	-	-	-	-	-	-	-	-
165	-	-	-	-	-	-	-	-	-	-
170	-	-	-	-	-	-	-	-	-	-
175	-	-	-	-	-	-	-	-	-	-
180	-	-	-	-	-	-	-	-	-	-
185	-	-	-	-	-	-	-	-	-	-
190	-	-	-	-	-	-	-	-	-	-
195	-	-	-	-	-	-	-	-	-	-
200	-	-	-	-	-	-	-	-	-	-
205	-	-	-	-	-	-	-	-	-	-
210	-	-	-	-	-	-	-	-	-	-
215	-	-	-	-	-	-	-	-	-	-
220	-	-	-	-	-	-	-	-	-	-
225	-	-	-	-	-	-	-	-	-	-
230	-	-	-	-	-	-	-	-	-	-
235	-	-	-	-	-	-	-	-	-	-
240	-	-	-	-	-	-	-	-	-	-
245	-	-	-	-	-	-	-	-	-	-
250	-	-	-	-	-	-	-	-	-	-
255	-	-	-	-	-	-	-	-	-	-
260	-	-	-	-	-	-	-	-	-	-
265	-	-	-	-	-	-	-	-	-	-
270	-	-	-	-	-	-	-	-	-	-
275	-	-	-	-	-	-	-	-	-	-
280	-	-	-	-	-	-	-	-	-	-
285	-	-	-	-	-	-	-	-	-	-
290	-	-	-	-	-	-	-	-	-	-
295	-	-	-	-	-	-	-	-	-	-
300	-	-	-	-	-	-	-	-	-	-
305	-	-	-	-	-	-	-	-	-	-

Thickness is intumescent only.

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Table 24: Rectangular Hollow 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	750°C
65	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477
70	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477
75	0.494	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477
80	0.543	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477
85	0.591	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477
90	0.640	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477
95	0.688	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477
100	0.737	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477
105	0.786	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477
110	0.834	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477
115	0.883	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477
120	0.932	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477
125	0.980	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477
130	1.029	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477
135	1.078	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477
140	1.126	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477
145	1.175	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477
150	1.223	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477
155	1.272	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477
160	1.321	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477
165	1.369	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477
170	1.418	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477
175	1.467	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477
180	1.515	0.512	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477
185	1.564	0.558	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477
190	1.613	0.604	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477
195	1.661	0.650	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477

Thickness is intumescent only. Results apply to rectangular hollow beams with 3-side fire exposures.

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Table 25: Rectangular Hollow 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	750°C
65	1.658	0.874	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477
70	1.737	0.929	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477
75	1.816	0.983	0.513	0.477	0.477	0.477	0.477	0.477	0.477	0.477
80	1.895	1.038	0.565	0.477	0.477	0.477	0.477	0.477	0.477	0.477
85	1.975	1.093	0.618	0.477	0.477	0.477	0.477	0.477	0.477	0.477
90	2.054	1.148	0.670	0.477	0.477	0.477	0.477	0.477	0.477	0.477
95	2.133	1.203	0.722	0.477	0.477	0.477	0.477	0.477	0.477	0.477
100	2.212	1.258	0.775	0.477	0.477	0.477	0.477	0.477	0.477	0.477
105	2.291	1.312	0.827	0.477	0.477	0.477	0.477	0.477	0.477	0.477
110	2.370	1.367	0.880	0.477	0.477	0.477	0.477	0.477	0.477	0.477
115	2.449	1.422	0.932	0.477	0.477	0.477	0.477	0.477	0.477	0.477
120	2.528	1.477	0.984	0.477	0.477	0.477	0.477	0.477	0.477	0.477
125	2.607	1.532	1.037	0.477	0.477	0.477	0.477	0.477	0.477	0.477
130	2.686	1.587	1.089	0.477	0.477	0.477	0.477	0.477	0.477	0.477
135	2.765	1.641	1.142	0.477	0.477	0.477	0.477	0.477	0.477	0.477
140	2.844	1.696	1.194	0.532	0.477	0.477	0.477	0.477	0.477	0.477
145	2.923	1.751	1.247	0.595	0.477	0.477	0.477	0.477	0.477	0.477
150	3.002	1.827	1.299	0.659	0.477	0.477	0.477	0.477	0.477	0.477
155	3.082	1.912	1.351	0.722	0.477	0.477	0.477	0.477	0.477	0.477
160	3.161	1.996	1.404	0.785	0.477	0.477	0.477	0.477	0.477	0.477
165	3.240	2.080	1.456	0.848	0.477	0.477	0.477	0.477	0.477	0.477
170	3.319	2.164	1.509	0.912	0.477	0.477	0.477	0.477	0.477	0.477
175	3.398	2.249	1.561	0.975	0.477	0.477	0.477	0.477	0.477	0.477
180	3.479	2.333	1.614	1.038	0.477	0.477	0.477	0.477	0.477	0.477
185	3.565	2.417	1.666	1.101	0.522	0.477	0.477	0.477	0.477	0.477
190	3.650	2.502	1.718	1.164	0.583	0.477	0.477	0.477	0.477	0.477
195	3.736	2.586	1.773	1.228	0.644	0.477	0.477	0.477	0.477	0.477

Thickness is intumescent only. Results apply to rectangular hollow beams with 3-side fire exposures.

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Table 26: Rectangular Hollow 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	750°C
65	3.349	1.785	1.131	0.772	0.494	0.477	0.477	0.477	0.477	0.477
70	3.424	1.875	1.212	0.829	0.550	0.477	0.477	0.477	0.477	0.477
75	3.498	1.964	1.294	0.886	0.605	0.477	0.477	0.477	0.477	0.477
80	3.573	2.053	1.376	0.944	0.661	0.477	0.477	0.477	0.477	0.477
85	3.648	2.143	1.457	1.001	0.717	0.477	0.477	0.477	0.477	0.477
90	3.723	2.232	1.539	1.058	0.772	0.524	0.477	0.477	0.477	0.477
95	3.797	2.322	1.621	1.116	0.828	0.582	0.477	0.477	0.477	0.477
100	3.872	2.411	1.703	1.173	0.883	0.640	0.477	0.477	0.477	0.477
105	3.947	2.500	1.785	1.230	0.939	0.697	0.477	0.477	0.477	0.477
110	4.022	2.590	1.872	1.288	0.994	0.755	0.518	0.477	0.477	0.477
115	4.096	2.679	1.959	1.345	1.050	0.813	0.581	0.477	0.477	0.477
120	4.171	2.768	2.046	1.402	1.106	0.871	0.644	0.477	0.477	0.477
125	4.246	2.858	2.133	1.460	1.161	0.929	0.708	0.477	0.477	0.477
130	4.321	2.947	2.220	1.517	1.217	0.987	0.771	0.477	0.477	0.477
135	4.396	3.037	2.307	1.574	1.272	1.045	0.834	0.477	0.477	0.477
140	4.470	3.126	2.394	1.631	1.328	1.103	0.897	0.522	0.477	0.477
145	4.545	3.215	2.481	1.689	1.384	1.161	0.961	0.592	0.477	0.477
150	4.620	3.305	2.568	1.746	1.439	1.219	1.024	0.662	0.477	0.477
155	4.695	3.394	2.655	1.832	1.495	1.277	1.087	0.733	0.477	0.477
160	4.769	3.491	2.742	1.933	1.550	1.335	1.151	0.803	0.477	0.477
165	4.844	3.598	2.829	2.035	1.606	1.393	1.214	0.874	0.477	0.477
170	4.919	3.706	2.916	2.136	1.662	1.451	1.277	0.944	0.477	0.477
175	4.994	3.813	3.003	2.237	1.717	1.509	1.341	1.014	0.477	0.477
180	5.068	3.920	3.090	2.339	1.778	1.567	1.404	1.085	0.519	0.477
185	5.143	4.028	3.177	2.440	1.872	1.625	1.467	1.155	0.588	0.477
190	5.218	4.135	3.264	2.541	1.967	1.683	1.531	1.225	0.657	0.477
195	5.293	4.242	3.351	2.643	2.062	1.740	1.594	1.296	0.726	0.477

Thickness is intumescent only. Results apply to rectangular hollow beams with 3-side fire exposures.

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Table 27: Rectangular Hollow 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	750°C
65	4.602	3.275	1.979	1.340	1.010	0.861	0.793	0.671	0.477	0.477
70	4.725	3.367	2.075	1.441	1.089	0.928	0.854	0.727	0.477	0.477
75	4.847	3.458	2.171	1.542	1.168	0.996	0.914	0.783	0.504	0.477
80	4.969	3.549	2.266	1.643	1.246	1.064	0.975	0.840	0.561	0.477
85	5.091	3.641	2.362	1.744	1.325	1.131	1.036	0.896	0.617	0.477
90	5.213	3.732	2.458	1.843	1.403	1.199	1.097	0.952	0.674	0.477
95	-	3.824	2.554	1.942	1.482	1.267	1.158	1.008	0.730	0.477
100	-	3.915	2.650	2.041	1.561	1.334	1.219	1.065	0.787	0.477
105	-	4.006	2.746	2.139	1.639	1.402	1.280	1.121	0.843	0.477
110	-	4.098	2.842	2.238	1.718	1.470	1.340	1.177	0.900	0.477
115	-	4.189	2.937	2.337	1.805	1.537	1.401	1.234	0.956	0.477
120	-	4.280	3.033	2.435	1.907	1.605	1.462	1.290	1.013	0.477
125	-	4.372	3.129	2.534	2.008	1.673	1.523	1.346	1.069	0.477
130	-	4.463	3.225	2.633	2.109	1.740	1.584	1.403	1.126	0.477
135	-	4.555	3.321	2.731	2.210	1.835	1.645	1.459	1.182	0.477
140	-	4.646	3.417	2.830	2.311	1.947	1.706	1.515	1.239	0.549
145	-	4.737	3.536	2.929	2.413	2.060	1.767	1.572	1.295	0.625
150	-	4.829	3.664	3.027	2.514	2.172	1.888	1.628	1.352	0.701
155	-	4.920	3.792	3.126	2.615	2.284	2.009	1.684	1.408	0.776
160	-	5.012	3.921	3.225	2.716	2.396	2.130	1.740	1.465	0.852
165	-	5.103	4.049	3.324	2.818	2.508	2.251	1.841	1.521	0.928
170	-	5.194	4.178	3.422	2.919	2.620	2.372	1.979	1.578	1.004
175	-	5.286	4.306	3.549	3.020	2.732	2.493	2.116	1.634	1.080
180	-	-	4.435	3.684	3.121	2.844	2.614	2.254	1.691	1.155
185	-	-	4.563	3.820	3.222	2.956	2.735	2.391	1.747	1.231
190	-	-	4.692	3.955	3.324	3.069	2.856	2.529	1.877	1.307
195	-	-	4.820	4.090	3.425	3.181	2.977	2.666	2.043	1.383

Thickness is intumescent only. Results apply to rectangular hollow beams with 3-side fire exposures.

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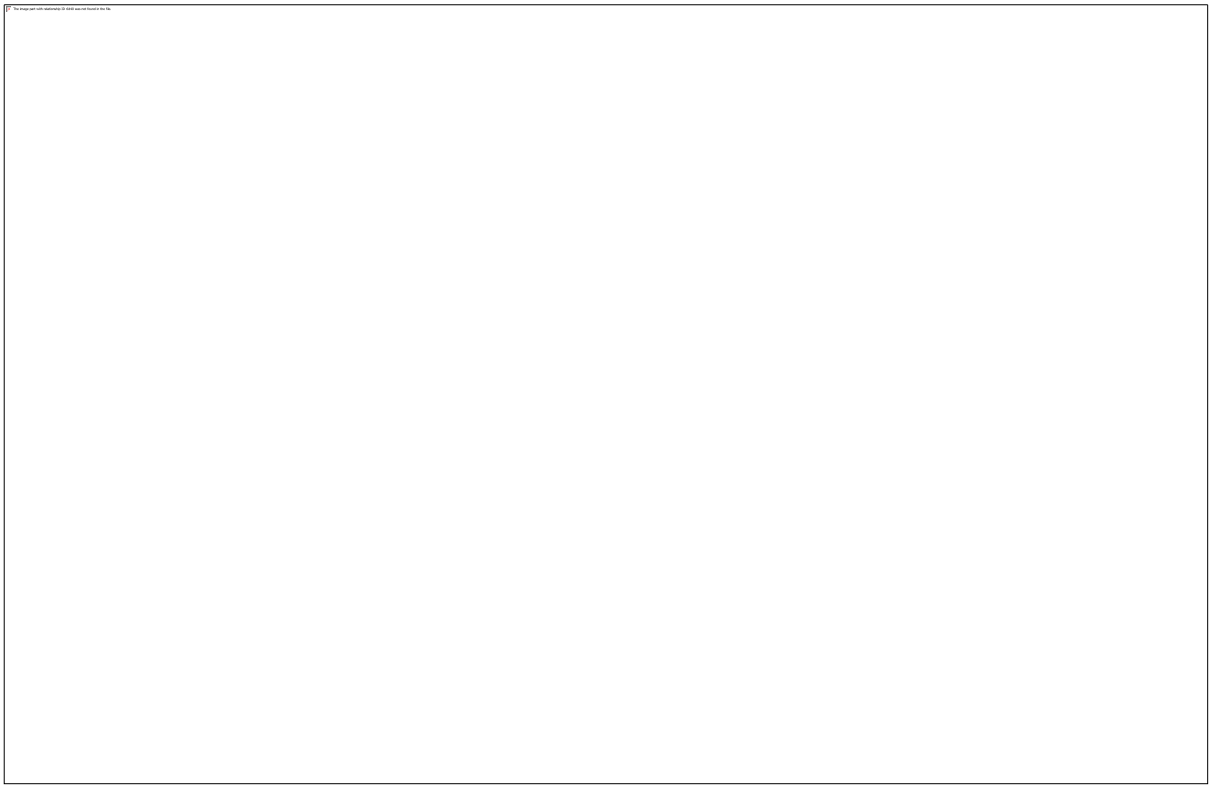
CERTIFICATE No CF 5300
SHERWIN-WILLIAMS PROTECTIVE & MARINE COATINGS



Thickness is intumescent only. Results apply to rectangular hollow beams with 3-side fire exposures.

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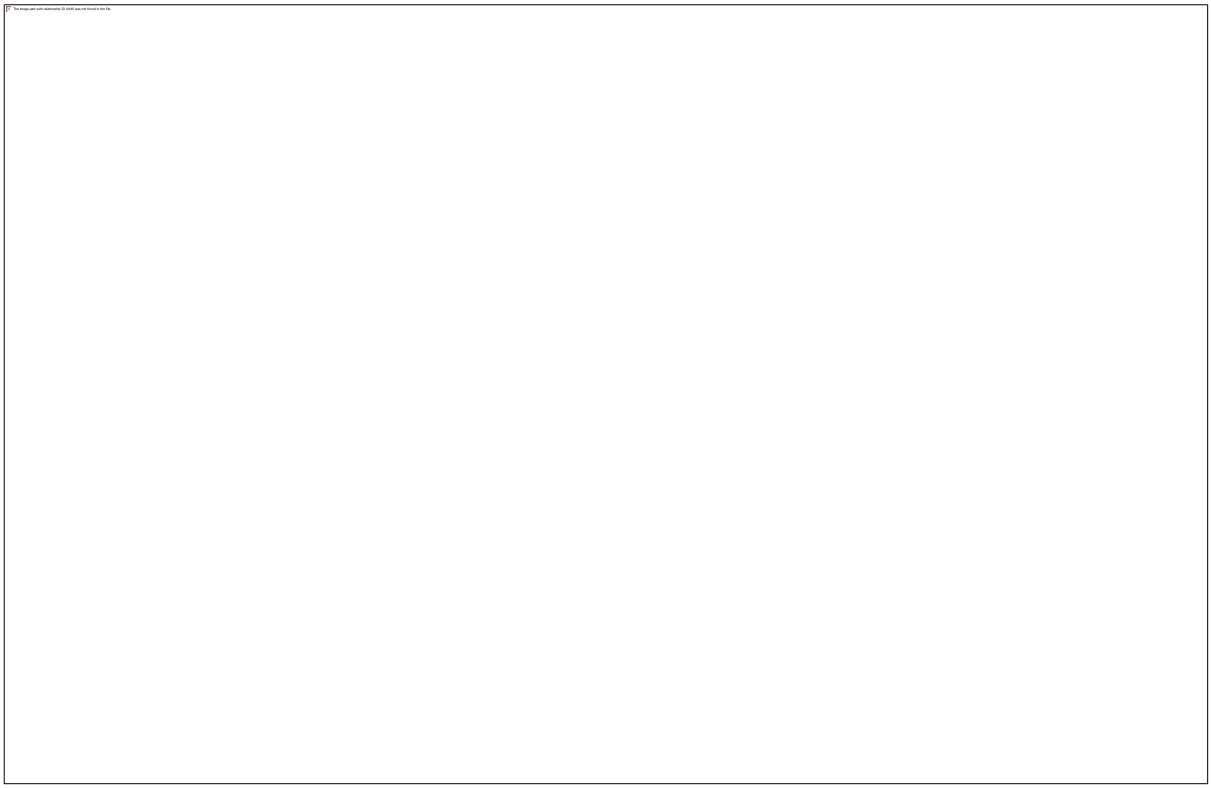

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