

Appendix 1

Certificate Number: 1109a (1) Issue: 11

Issued to: **INTERNATIONAL PAINT LIMITED**

For: **Interchar 1190**

Required Intumescent Dry Film Thickness (dft) in millimetres (mm) of Interchar 1190 for I- and H- section beams, with exposure

This appendix forms part of Certificate Number 1109a (1), Issue 11, issued to:

INTERNATIONAL PAINT LIMITED
International Paint Limited
Stoneygate lane
Felling
Gateshead
Tyne & Wear
NE10 0JY

on 10 August 2020

To check the validity of the Certificate and Appendix please visit www.redbooklive.com

This Appendix is part of the Product Approval Certificate and shall not be distributed separately.

The certificate and this appendix are issued subject to terms and conditions. For details visit www.redbooklive.com/terms

Table 1 Required thickness (mm) of Interchar 1190 for a fire resistance period of 15 minutes

Section factor (m ⁻¹)	Design temperature (°C)									
	350	400	450	500	550	600	620	650	700	750
70	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770
75	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770
80	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770
85	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770
90	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770
95	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770
100	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770
105	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770
110	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770
115	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770
120	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770
125	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770
130	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770
135	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770
140	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770
145	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770
150	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770
155	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770
160	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770
165	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770
170	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770
175	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770
180	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770

Section factor (m ⁻¹)	Design temperature (°C)									
	350	400	450	500	550	600	620	650	700	750
185	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770
190	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770
195	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770
200	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770
205	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770
210	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770
215	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770
220	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770
225	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770
230	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770
235	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770
240	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770
245	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770
250	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770
255	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770
260	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770
265	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770
270	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770
275	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770
280	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770
285	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770
290	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770
295	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770
300	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770

Section factor (m ⁻¹)	Design temperature (°C)									
	350	400	450	500	550	600	620	650	700	750
305	0.771	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770
310	0.779	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770
315	0.787	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770
320	0.795	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770

Table 2 Required thickness (mm) of Interchar 1190 for a fire resistance period of 30 minutes

Section factor (m ⁻¹)	Design temperature (°C)									
	350	400	450	500	550	600	620	650	700	750
70	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770
75	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770
80	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770
85	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770
90	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770
95	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770
100	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770
105	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770
110	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770
115	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770
120	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770
125	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770
130	0.781	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770
135	0.796	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770
140	0.812	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770
145	0.827	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770

Section factor (m ⁻¹)	Design temperature (°C)									
	350	400	450	500	550	600	620	650	700	750
150	0.842	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770
155	0.858	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770
160	0.873	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770
165	0.888	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770
170	0.904	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770
175	0.919	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770
180	0.935	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770
185	0.950	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770
190	0.965	0.782	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770
195	0.981	0.796	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770
200	0.996	0.809	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770
205	1.011	0.823	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770
210	1.027	0.837	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770
215	1.042	0.850	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770
220	1.058	0.864	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770
225	1.073	0.877	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770
230	1.088	0.891	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770
235	1.104	0.905	0.775	0.770	0.770	0.770	0.770	0.770	0.770	0.770
240	1.119	0.918	0.787	0.770	0.770	0.770	0.770	0.770	0.770	0.770
245	1.134	0.932	0.799	0.770	0.770	0.770	0.770	0.770	0.770	0.770
250	1.150	0.946	0.810	0.770	0.770	0.770	0.770	0.770	0.770	0.770
255	1.165	0.959	0.822	0.770	0.770	0.770	0.770	0.770	0.770	0.770
260	1.181	0.973	0.834	0.770	0.770	0.770	0.770	0.770	0.770	0.770
265	1.196	0.987	0.846	0.770	0.770	0.770	0.770	0.770	0.770	0.770

Section factor (m ⁻¹)	Design temperature (°C)									
	350	400	450	500	550	600	620	650	700	750
270	1.211	1.000	0.858	0.770	0.770	0.770	0.770	0.770	0.770	0.770
275	1.227	1.014	0.869	0.770	0.770	0.770	0.770	0.770	0.770	0.770
280	1.242	1.027	0.881	0.770	0.770	0.770	0.770	0.770	0.770	0.770
285	1.258	1.041	0.893	0.777	0.770	0.770	0.770	0.770	0.770	0.770
290	1.273	1.055	0.905	0.787	0.770	0.770	0.770	0.770	0.770	0.770
295	1.288	1.068	0.917	0.798	0.770	0.770	0.770	0.770	0.770	0.770
300	1.304	1.082	0.928	0.808	0.770	0.770	0.770	0.770	0.770	0.770
305	1.319	1.096	0.940	0.818	0.770	0.770	0.770	0.770	0.770	0.770
310	1.334	1.109	0.952	0.828	0.770	0.770	0.770	0.770	0.770	0.770
315	1.350	1.123	0.964	0.839	0.770	0.770	0.770	0.770	0.770	0.770
320	1.365	1.136	0.976	0.849	0.770	0.770	0.770	0.770	0.770	0.770

Table 3 Required thickness (mm) of Interchar 1190 for a fire resistance period of 45 minutes

Section factor (m ⁻¹)	Design temperature (°C)									
	350	400	450	500	550	600	620	650	700	750
70	0.889	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770
75	0.918	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770
80	0.947	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770
85	0.976	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770
90	1.005	0.786	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770
95	1.034	0.803	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770
100	1.063	0.820	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770
105	1.092	0.838	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770
110	1.121	0.855	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770

Section factor (m ⁻¹)	Design temperature (°C)									
	350	400	450	500	550	600	620	650	700	750
115	1.150	0.873	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770
120	1.179	0.890	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770
125	1.208	0.907	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770
130	1.237	0.925	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770
135	1.266	0.942	0.770	0.770	0.770	0.770	0.770	0.770	0.770	0.770
140	1.295	0.959	0.775	0.770	0.770	0.770	0.770	0.770	0.770	0.770
145	1.324	0.977	0.792	0.770	0.770	0.770	0.770	0.770	0.770	0.770
150	1.353	0.994	0.809	0.770	0.770	0.770	0.770	0.770	0.770	0.770
155	1.382	1.011	0.826	0.770	0.770	0.770	0.770	0.770	0.770	0.770
160	1.412	1.029	0.843	0.770	0.770	0.770	0.770	0.770	0.770	0.770
165	1.441	1.046	0.860	0.770	0.770	0.770	0.770	0.770	0.770	0.770
170	1.470	1.064	0.877	0.770	0.770	0.770	0.770	0.770	0.770	0.770
175	1.499	1.081	0.894	0.772	0.770	0.770	0.770	0.770	0.770	0.770
180	1.528	1.098	0.911	0.787	0.770	0.770	0.770	0.770	0.770	0.770
185	1.561	1.116	0.929	0.803	0.770	0.770	0.770	0.770	0.770	0.770
190	1.594	1.133	0.946	0.818	0.770	0.770	0.770	0.770	0.770	0.770
195	1.628	1.150	0.963	0.834	0.770	0.770	0.770	0.770	0.770	0.770
200	1.661	1.168	0.980	0.849	0.770	0.770	0.770	0.770	0.770	0.770
205	1.694	1.185	0.997	0.865	0.770	0.770	0.770	0.770	0.770	0.770
210	1.728	1.202	1.014	0.881	0.770	0.770	0.770	0.770	0.770	0.770
215	1.761	1.220	1.031	0.896	0.778	0.770	0.770	0.770	0.770	0.770
220	1.794	1.237	1.048	0.912	0.792	0.770	0.770	0.770	0.770	0.770
225	1.828	1.255	1.065	0.927	0.806	0.770	0.770	0.770	0.770	0.770
230	1.861	1.272	1.082	0.943	0.820	0.770	0.770	0.770	0.770	0.770

Section factor (m ⁻¹)	Design temperature (°C)									
	350	400	450	500	550	600	620	650	700	750
235	1.895	1.289	1.099	0.958	0.834	0.770	0.770	0.770	0.770	0.770
240	1.928	1.307	1.116	0.974	0.848	0.770	0.770	0.770	0.770	0.770
245	1.961	1.324	1.134	0.989	0.862	0.770	0.770	0.770	0.770	0.770
250	1.995	1.341	1.151	1.005	0.876	0.777	0.770	0.770	0.770	0.770
255	2.028	1.359	1.168	1.020	0.890	0.789	0.770	0.770	0.770	0.770
260	2.061	1.376	1.185	1.036	0.904	0.802	0.770	0.770	0.770	0.770
265	2.095	1.393	1.202	1.052	0.918	0.814	0.778	0.770	0.770	0.770
270	2.128	1.411	1.219	1.067	0.932	0.826	0.790	0.770	0.770	0.770
275	2.161	1.428	1.236	1.083	0.946	0.839	0.802	0.770	0.770	0.770
280	2.195	1.446	1.253	1.098	0.960	0.851	0.813	0.770	0.770	0.770
285	2.228	1.463	1.270	1.114	0.974	0.863	0.825	0.770	0.770	0.770
290	2.261	1.480	1.287	1.129	0.988	0.876	0.837	0.777	0.770	0.770
295	2.295	1.498	1.304	1.145	1.002	0.888	0.848	0.788	0.770	0.770
300	2.328	1.515	1.321	1.160	1.016	0.900	0.860	0.799	0.770	0.770
305	2.361	1.539	1.339	1.176	1.030	0.913	0.872	0.809	0.770	0.770
310	2.395	1.583	1.356	1.191	1.044	0.925	0.883	0.820	0.770	0.770
315	2.428	1.627	1.373	1.207	1.058	0.938	0.895	0.831	0.770	0.770
320	2.461	1.671	1.390	1.222	1.072	0.950	0.906	0.841	0.770	0.770

Table 4 Required thickness (mm) of Interchar 1190 for a fire resistance period of 60 minutes

Section factor (m ⁻¹)	Design temperature (°C)									
	350	400	450	500	550	600	620	650	700	750
70	1.279	0.984	0.774	0.770	0.770	0.770	0.770	0.770	0.770	0.770
75	1.333	1.017	0.798	0.770	0.770	0.770	0.770	0.770	0.770	0.770
80	1.388	1.051	0.822	0.770	0.770	0.770	0.770	0.770	0.770	0.770
85	1.443	1.084	0.846	0.770	0.770	0.770	0.770	0.770	0.770	0.770
90	1.497	1.117	0.870	0.770	0.770	0.770	0.770	0.770	0.770	0.770
95	1.543	1.151	0.894	0.770	0.770	0.770	0.770	0.770	0.770	0.770
100	1.578	1.184	0.918	0.781	0.770	0.770	0.770	0.770	0.770	0.770
105	1.613	1.218	0.942	0.799	0.770	0.770	0.770	0.770	0.770	0.770
110	1.648	1.251	0.966	0.817	0.770	0.770	0.770	0.770	0.770	0.770
115	1.683	1.284	0.990	0.835	0.770	0.770	0.770	0.770	0.770	0.770
120	1.718	1.318	1.014	0.853	0.770	0.770	0.770	0.770	0.770	0.770
125	1.753	1.351	1.038	0.871	0.770	0.770	0.770	0.770	0.770	0.770
130	1.788	1.384	1.062	0.889	0.770	0.770	0.770	0.770	0.770	0.770
135	1.823	1.418	1.085	0.907	0.770	0.770	0.770	0.770	0.770	0.770
140	1.858	1.451	1.109	0.925	0.770	0.770	0.770	0.770	0.770	0.770
145	1.893	1.485	1.133	0.943	0.784	0.770	0.770	0.770	0.770	0.770
150	1.928	1.518	1.157	0.960	0.802	0.770	0.770	0.770	0.770	0.770
155	1.963	1.553	1.181	0.978	0.820	0.770	0.770	0.770	0.770	0.770
160	1.998	1.588	1.205	0.996	0.837	0.770	0.770	0.770	0.770	0.770
165	2.033	1.624	1.229	1.014	0.855	0.770	0.770	0.770	0.770	0.770
170	2.068	1.660	1.253	1.032	0.873	0.778	0.770	0.770	0.770	0.770
175	2.103	1.695	1.277	1.050	0.891	0.794	0.770	0.770	0.770	0.770
180	2.138	1.731	1.301	1.068	0.909	0.810	0.770	0.770	0.770	0.770

Section factor (m ⁻¹)	Design temperature (°C)									
	350	400	450	500	550	600	620	650	700	750
185	2.173	1.766	1.325	1.086	0.927	0.826	0.785	0.770	0.770	0.770
190	2.208	1.802	1.349	1.104	0.945	0.843	0.801	0.770	0.770	0.770
195	2.243	1.838	1.373	1.122	0.963	0.859	0.816	0.770	0.770	0.770
200	2.278	1.873	1.397	1.140	0.981	0.875	0.832	0.770	0.770	0.770
205	2.313	1.909	1.421	1.158	0.999	0.892	0.848	0.775	0.770	0.770
210	2.348	1.944	1.444	1.176	1.017	0.908	0.863	0.790	0.770	0.770
215	2.383	1.980	1.468	1.194	1.035	0.924	0.879	0.805	0.770	0.770
220	2.418	2.016	1.492	1.212	1.053	0.940	0.895	0.820	0.770	0.770
225	2.453	2.051	1.516	1.229	1.071	0.957	0.910	0.835	0.770	0.770
230	2.488	2.087	1.550	1.247	1.089	0.973	0.926	0.850	0.770	0.770
235	2.523	2.122	1.592	1.265	1.106	0.989	0.942	0.865	0.776	0.770
240	2.558	2.158	1.634	1.283	1.124	1.006	0.958	0.880	0.789	0.770
245	2.593	2.194	1.676	1.301	1.142	1.022	0.973	0.895	0.802	0.770
250	2.628	2.229	1.718	1.319	1.160	1.038	0.989	0.910	0.815	0.770
255	2.663	2.265	1.760	1.337	1.178	1.054	1.005	0.925	0.828	0.770
260	2.698	2.300	1.802	1.355	1.196	1.071	1.020	0.940	0.841	0.770
265	2.733	2.336	1.844	1.373	1.214	1.087	1.036	0.955	0.854	0.770
270	2.768	2.372	1.886	1.391	1.232	1.103	1.052	0.970	0.867	0.770
275	2.803	2.407	1.928	1.409	1.250	1.120	1.067	0.985	0.880	0.770
280	2.838	2.443	1.970	1.427	1.268	1.136	1.083	1.000	0.893	0.781
285	2.883	2.478	2.012	1.445	1.286	1.152	1.099	1.016	0.906	0.792
290	2.950	2.514	2.054	1.463	1.304	1.168	1.114	1.031	0.919	0.804
295	3.016	2.550	2.096	1.481	1.322	1.185	1.130	1.046	0.932	0.815
300	3.083	2.585	2.138	1.499	1.340	1.201	1.146	1.061	0.945	0.826

Section factor (m ⁻¹)	Design temperature (°C)									
	350	400	450	500	550	600	620	650	700	750
305	3.150	2.621	2.180	1.516	1.357	1.217	1.162	1.076	0.958	0.837
310	3.217	2.656	2.222	1.548	1.375	1.234	1.177	1.091	0.971	0.848
315	3.283	2.692	2.264	1.601	1.393	1.250	1.193	1.106	0.984	0.860
320	3.350	2.728	2.306	1.654	1.411	1.266	1.209	1.121	0.997	0.871

Table 5 Required thickness (mm) of Interchar 1190 for a fire resistance period of 75 minutes

Section factor (m ⁻¹)	Design temperature (°C)									
	350	400	450	500	550	600	620	650	700	750
70	1.778	1.304	1.060	0.827	0.770	0.770	0.770	0.770	0.770	0.770
75	1.833	1.359	1.096	0.857	0.770	0.770	0.770	0.770	0.770	0.770
80	1.887	1.415	1.133	0.887	0.773	0.770	0.770	0.770	0.770	0.770
85	1.942	1.470	1.170	0.917	0.795	0.770	0.770	0.770	0.770	0.770
90	1.996	1.526	1.207	0.947	0.816	0.770	0.770	0.770	0.770	0.770
95	2.051	1.568	1.243	0.977	0.838	0.770	0.770	0.770	0.770	0.770
100	2.105	1.610	1.280	1.007	0.859	0.770	0.770	0.770	0.770	0.770
105	2.160	1.652	1.317	1.037	0.881	0.774	0.770	0.770	0.770	0.770
110	2.214	1.694	1.353	1.067	0.902	0.792	0.770	0.770	0.770	0.770
115	2.269	1.736	1.390	1.097	0.924	0.810	0.770	0.770	0.770	0.770
120	2.324	1.778	1.427	1.127	0.945	0.828	0.786	0.770	0.770	0.770
125	2.378	1.820	1.464	1.157	0.967	0.846	0.803	0.770	0.770	0.770
130	2.433	1.862	1.500	1.187	0.988	0.864	0.821	0.770	0.770	0.770
135	2.487	1.904	1.538	1.217	1.010	0.882	0.839	0.770	0.770	0.770
140	2.542	1.946	1.576	1.247	1.031	0.901	0.857	0.786	0.770	0.770
145	2.596	1.988	1.615	1.277	1.053	0.919	0.874	0.804	0.770	0.770

Section factor (m ⁻¹)	Design temperature (°C)									
	350	400	450	500	550	600	620	650	700	750
150	2.651	2.031	1.653	1.307	1.075	0.937	0.892	0.821	0.770	0.770
155	2.706	2.073	1.692	1.337	1.096	0.955	0.910	0.839	0.770	0.770
160	2.760	2.115	1.730	1.367	1.118	0.973	0.928	0.856	0.770	0.770
165	2.815	2.157	1.769	1.397	1.139	0.991	0.945	0.873	0.774	0.770
170	2.868	2.199	1.808	1.427	1.161	1.009	0.963	0.891	0.790	0.770
175	2.912	2.241	1.846	1.457	1.182	1.027	0.981	0.908	0.806	0.770
180	2.957	2.283	1.885	1.487	1.204	1.045	0.999	0.926	0.822	0.770
185	3.001	2.325	1.923	1.517	1.225	1.063	1.016	0.943	0.838	0.770
190	3.046	2.367	1.962	1.555	1.247	1.081	1.034	0.961	0.854	0.770
195	3.090	2.409	2.000	1.598	1.268	1.099	1.052	0.978	0.870	0.770
200	3.135	2.451	2.039	1.640	1.290	1.118	1.070	0.995	0.886	0.770
205	3.179	2.493	2.077	1.683	1.311	1.136	1.087	1.013	0.902	0.770
210	3.224	2.535	2.116	1.725	1.333	1.154	1.105	1.030	0.918	0.785
215	3.268	2.577	2.155	1.768	1.354	1.172	1.123	1.048	0.934	0.801
220	3.313	2.619	2.193	1.811	1.376	1.190	1.141	1.065	0.950	0.816
225	3.357	2.661	2.232	1.853	1.397	1.208	1.158	1.083	0.966	0.831
230	3.402	2.703	2.270	1.896	1.419	1.226	1.176	1.100	0.982	0.846
235	3.446	2.745	2.309	1.939	1.440	1.244	1.194	1.117	0.999	0.861
240	3.491	2.787	2.347	1.981	1.462	1.262	1.212	1.135	1.015	0.876
245	3.535	2.829	2.386	2.024	1.483	1.280	1.229	1.152	1.031	0.891
250	3.579	2.874	2.424	2.066	1.505	1.298	1.247	1.170	1.047	0.906
255	3.624	2.931	2.463	2.109	1.526	1.317	1.265	1.187	1.063	0.921
260	3.668	2.988	2.502	2.152	1.578	1.335	1.283	1.205	1.079	0.936
265	3.713	3.045	2.540	2.194	1.632	1.353	1.300	1.222	1.095	0.951

Section factor (m ⁻¹)	Design temperature (°C)									
	350	400	450	500	550	600	620	650	700	750
270	3.757	3.101	2.579	2.237	1.686	1.371	1.318	1.239	1.111	0.966
275	3.802	3.158	2.617	2.279	1.739	1.389	1.336	1.257	1.127	0.981
280	3.846	3.215	2.656	2.322	1.793	1.407	1.354	1.274	1.143	0.996
285	3.891	3.271	2.694	2.365	1.847	1.425	1.371	1.292	1.159	1.011
290	3.935	3.328	2.733	2.407	1.901	1.443	1.389	1.309	1.175	1.026
295	3.980	3.385	2.771	2.450	1.954	1.461	1.407	1.327	1.191	1.041
300	4.024	3.442	2.810	2.492	2.008	1.479	1.425	1.344	1.207	1.056
305	4.069	3.498	2.849	2.535	2.062	1.497	1.442	1.361	1.223	1.071
310	4.113	3.555	2.909	2.578	2.115	1.515	1.460	1.379	1.239	1.086
315	4.158	3.612	2.982	2.620	2.169	1.548	1.478	1.396	1.255	1.101
320	4.202	3.668	3.055	2.663	2.223	1.612	1.496	1.414	1.271	1.116

Table 6 Required thickness (mm) of Interchar 1190 for a fire resistance period of 90 minutes

Section factor (m ⁻¹)	Design temperature (°C)									
	350	400	450	500	550	600	620	650	700	750
70	2.327	1.610	1.339	1.124	0.936	0.770	0.770	0.770	0.770	0.770
75	2.405	1.676	1.396	1.163	0.967	0.793	0.770	0.770	0.770	0.770
80	2.482	1.743	1.453	1.203	0.998	0.820	0.785	0.770	0.770	0.770
85	2.560	1.809	1.510	1.242	1.029	0.847	0.808	0.770	0.770	0.770
90	2.638	1.875	1.564	1.282	1.060	0.873	0.832	0.783	0.770	0.770
95	2.716	1.941	1.615	1.322	1.091	0.900	0.856	0.803	0.770	0.770
100	2.794	2.008	1.667	1.361	1.122	0.927	0.879	0.822	0.770	0.770
105	2.868	2.074	1.718	1.401	1.153	0.953	0.903	0.842	0.770	0.770
110	2.918	2.140	1.770	1.440	1.184	0.980	0.926	0.861	0.776	0.770

Section factor (m ⁻¹)	Design temperature (°C)									
	350	400	450	500	550	600	620	650	700	750
115	2.969	2.206	1.821	1.480	1.215	1.007	0.950	0.881	0.794	0.770
120	3.019	2.273	1.873	1.519	1.247	1.033	0.974	0.900	0.811	0.770
125	3.070	2.339	1.925	1.560	1.278	1.060	0.997	0.920	0.829	0.770
130	3.120	2.405	1.976	1.601	1.309	1.087	1.021	0.939	0.846	0.770
135	3.170	2.472	2.028	1.642	1.340	1.114	1.045	0.959	0.864	0.770
140	3.221	2.538	2.079	1.683	1.371	1.140	1.068	0.978	0.882	0.770
145	3.271	2.604	2.131	1.724	1.402	1.167	1.092	0.998	0.899	0.787
150	3.322	2.670	2.182	1.765	1.433	1.194	1.116	1.017	0.917	0.804
155	3.372	2.737	2.234	1.805	1.464	1.220	1.139	1.037	0.934	0.821
160	3.422	2.803	2.286	1.846	1.495	1.247	1.163	1.056	0.952	0.838
165	3.473	2.867	2.337	1.887	1.526	1.274	1.187	1.076	0.970	0.855
170	3.523	2.914	2.389	1.928	1.571	1.300	1.210	1.095	0.987	0.872
175	3.574	2.960	2.440	1.969	1.616	1.327	1.234	1.115	1.005	0.889
180	3.624	3.007	2.492	2.010	1.661	1.354	1.257	1.134	1.022	0.906
185	3.674	3.053	2.543	2.051	1.706	1.380	1.281	1.154	1.040	0.923
190	3.725	3.100	2.595	2.092	1.751	1.407	1.305	1.173	1.058	0.939
195	3.775	3.147	2.646	2.133	1.796	1.434	1.328	1.193	1.075	0.956
200	3.826	3.193	2.698	2.174	1.841	1.460	1.352	1.212	1.093	0.973
205	3.876	3.240	2.750	2.214	1.886	1.487	1.376	1.232	1.110	0.990
210	3.926	3.287	2.801	2.255	1.932	1.514	1.399	1.251	1.128	1.007
215	3.977	3.333	2.853	2.296	1.977	1.552	1.423	1.271	1.146	1.024
220	4.027	3.380	2.906	2.337	2.022	1.603	1.447	1.290	1.163	1.041
225	4.078	3.426	2.959	2.378	2.067	1.654	1.470	1.310	1.181	1.058
230	4.128	3.473	3.012	2.419	2.112	1.705	1.494	1.329	1.198	1.075

Section factor (m ⁻¹)	Design temperature (°C)									
	350	400	450	500	550	600	620	650	700	750
235	4.178	3.520	3.065	2.460	2.157	1.756	1.518	1.349	1.216	1.092
240	4.229	3.566	3.118	2.501	2.202	1.807	1.560	1.368	1.234	1.109
245	4.279	3.613	3.171	2.542	2.247	1.859	1.616	1.388	1.251	1.125
250	4.330	3.660	3.224	2.582	2.292	1.910	1.672	1.407	1.269	1.142
255	-	3.706	3.277	2.623	2.337	1.961	1.729	1.427	1.286	1.159
260	-	3.753	3.330	2.664	2.382	2.012	1.785	1.446	1.304	1.176
265	-	3.799	3.383	2.705	2.428	2.063	1.841	1.466	1.322	1.193
270	-	3.846	3.437	2.746	2.473	2.114	1.898	1.485	1.339	1.210
275	-	3.893	3.490	2.787	2.518	2.165	1.954	1.505	1.357	1.227
280	-	3.939	3.543	2.828	2.563	2.216	2.010	1.524	1.374	1.244
285	-	3.986	3.596	2.878	2.608	2.267	2.066	1.585	1.392	1.261
290	-	4.032	3.649	2.971	2.653	2.318	2.123	1.656	1.410	1.278
295	-	4.079	3.702	3.064	2.698	2.369	2.179	1.726	1.427	1.295
300	-	4.126	3.755	3.157	2.743	2.420	2.235	1.796	1.445	1.311
305	-	4.172	3.808	3.250	2.788	2.471	2.291	1.866	1.462	1.328
310	-	4.219	3.861	3.343	2.833	2.522	2.348	1.936	1.480	1.345
315	-	4.266	3.914	3.435	2.900	2.573	2.404	2.006	1.498	1.362
320	-	4.312	3.968	3.528	3.002	2.624	2.460	2.076	1.515	1.379

Table 7 Required thickness (mm) of Interchar 1190 for a fire resistance period of 105 minutes

Section factor (m ⁻¹)	Design temperature (°C)									
	350	400	450	500	550	600	620	650	700	750
70	2.859	2.294	1.617	1.378	1.181	1.001	0.931	0.801	0.770	0.770
75	2.917	2.374	1.690	1.437	1.224	1.033	0.962	0.832	0.770	0.770
80	2.974	2.455	1.764	1.495	1.267	1.066	0.994	0.863	0.782	0.770
85	3.031	2.536	1.838	1.555	1.310	1.099	1.026	0.894	0.805	0.770
90	3.089	2.616	1.911	1.615	1.353	1.131	1.057	0.924	0.828	0.770
95	3.146	2.697	1.985	1.675	1.395	1.164	1.089	0.955	0.851	0.772
100	3.203	2.778	2.059	1.735	1.438	1.196	1.121	0.986	0.874	0.791
105	3.260	2.858	2.132	1.795	1.481	1.229	1.152	1.017	0.897	0.809
110	3.318	2.911	2.206	1.855	1.524	1.262	1.184	1.048	0.920	0.827
115	3.375	2.962	2.279	1.915	1.574	1.294	1.216	1.079	0.943	0.845
120	3.432	3.013	2.353	1.975	1.624	1.327	1.247	1.110	0.966	0.863
125	3.490	3.065	2.427	2.035	1.675	1.359	1.279	1.141	0.989	0.882
130	3.547	3.116	2.500	2.095	1.726	1.392	1.311	1.171	1.012	0.900
135	3.604	3.167	2.574	2.155	1.776	1.425	1.342	1.202	1.035	0.918
140	3.662	3.219	2.648	2.215	1.827	1.457	1.374	1.233	1.058	0.936
145	3.719	3.270	2.721	2.275	1.878	1.490	1.406	1.264	1.081	0.954
150	3.776	3.321	2.795	2.335	1.928	1.522	1.437	1.295	1.104	0.973
155	3.833	3.372	2.867	2.395	1.979	1.567	1.469	1.326	1.127	0.991
160	3.891	3.424	2.923	2.455	2.030	1.615	1.501	1.357	1.150	1.009
165	3.948	3.475	2.979	2.515	2.080	1.662	1.535	1.388	1.173	1.027
170	4.005	3.526	3.035	2.575	2.131	1.710	1.583	1.418	1.196	1.045
175	4.063	3.578	3.091	2.635	2.182	1.757	1.632	1.449	1.219	1.064
180	4.120	3.629	3.147	2.695	2.232	1.805	1.681	1.480	1.242	1.082

Section factor (m ⁻¹)	Design temperature (°C)									
	350	400	450	500	550	600	620	650	700	750
185	4.177	3.680	3.203	2.755	2.283	1.852	1.729	1.511	1.265	1.100
190	4.235	3.731	3.259	2.816	2.334	1.900	1.778	1.551	1.288	1.118
195	4.292	3.783	3.315	2.874	2.384	1.947	1.827	1.603	1.311	1.136
200	4.349	3.834	3.371	2.928	2.435	1.995	1.875	1.654	1.334	1.155
205	-	3.885	3.427	2.983	2.486	2.042	1.924	1.705	1.357	1.173
210	-	3.937	3.483	3.037	2.536	2.090	1.972	1.756	1.380	1.191
215	-	3.988	3.539	3.091	2.587	2.137	2.021	1.808	1.403	1.209
220	-	4.039	3.595	3.145	2.638	2.185	2.070	1.859	1.426	1.227
225	-	4.091	3.650	3.199	2.688	2.232	2.118	1.910	1.449	1.246
230	-	4.142	3.706	3.253	2.739	2.280	2.167	1.962	1.472	1.264
235	-	4.193	3.762	3.308	2.790	2.327	2.216	2.013	1.495	1.282
240	-	4.244	3.818	3.362	2.840	2.375	2.264	2.064	1.519	1.300
245	-	4.296	3.874	3.416	2.906	2.422	2.313	2.116	1.565	1.318
250	-	4.347	3.930	3.470	2.983	2.470	2.362	2.167	1.627	1.337
255	-	-	3.986	3.524	3.059	2.517	2.410	2.218	1.689	1.355
260	-	-	4.042	3.578	3.136	2.565	2.459	2.269	1.751	1.373
265	-	-	4.098	3.633	3.213	2.612	2.508	2.321	1.813	1.391
270	-	-	4.154	3.687	3.290	2.659	2.556	2.372	1.874	1.410
275	-	-	4.210	3.741	3.366	2.707	2.605	2.423	1.936	1.428
280	-	-	4.266	3.795	3.443	2.754	2.653	2.475	1.998	1.446
285	-	-	4.322	3.849	3.520	2.802	2.702	2.526	2.060	1.464
290	-	-	-	3.904	3.596	2.849	2.751	2.577	2.122	1.482
295	-	-	-	3.958	3.673	2.962	2.799	2.628	2.184	1.501
300	-	-	-	4.012	3.750	3.098	2.848	2.680	2.246	1.519

Section factor (m ⁻¹)	Design temperature (°C)									
	350	400	450	500	550	600	620	650	700	750
305	-	-	-	4.066	3.826	3.234	2.964	2.731	2.308	1.566
310	-	-	-	4.120	3.903	3.370	3.105	2.782	2.370	1.643
315	-	-	-	4.174	3.980	3.506	3.246	2.834	2.432	1.719
320	-	-	-	4.229	4.056	3.641	3.388	2.931	2.493	1.795

Table 8 Required thickness (mm) of Interchar 1190 for a fire resistance period of 120 minutes

Section factor (m ⁻¹)	Design temperature (°C)									
	350	400	450	500	550	600	620	650	700	750
70	-	2.838	2.291	1.641	1.420	1.233	1.163	1.063	0.831	0.770
75	-	2.897	2.382	1.720	1.481	1.280	1.205	1.097	0.865	0.784
80	-	2.956	2.473	1.800	1.545	1.326	1.246	1.131	0.899	0.810
85	-	3.015	2.564	1.879	1.612	1.373	1.288	1.165	0.932	0.836
90	-	3.073	2.655	1.959	1.680	1.420	1.330	1.199	0.966	0.862
95	-	3.132	2.746	2.038	1.748	1.466	1.371	1.233	0.999	0.888
100	-	3.191	2.837	2.118	1.815	1.513	1.413	1.266	1.033	0.913
105	-	3.250	2.903	2.198	1.883	1.568	1.455	1.300	1.066	0.939
110	-	3.309	2.960	2.277	1.950	1.627	1.496	1.334	1.100	0.965
115	-	3.368	3.017	2.357	2.018	1.686	1.541	1.368	1.133	0.991
120	-	3.427	3.075	2.436	2.085	1.745	1.598	1.402	1.167	1.017
125	-	3.486	3.132	2.516	2.153	1.803	1.654	1.435	1.200	1.043
130	-	3.545	3.189	2.595	2.221	1.862	1.710	1.469	1.234	1.068
135	-	3.603	3.246	2.675	2.288	1.921	1.766	1.503	1.267	1.094
140	-	3.662	3.303	2.754	2.356	1.980	1.822	1.542	1.301	1.120
145	-	3.721	3.360	2.834	2.423	2.039	1.879	1.596	1.335	1.146

Section factor (m ⁻¹)	Design temperature (°C)									
	350	400	450	500	550	600	620	650	700	750
150	-	3.780	3.417	2.906	2.491	2.097	1.935	1.650	1.368	1.172
155	-	3.839	3.474	2.973	2.559	2.156	1.991	1.703	1.402	1.198
160	-	3.898	3.531	3.041	2.626	2.215	2.047	1.757	1.435	1.223
165	-	3.957	3.588	3.109	2.694	2.274	2.104	1.811	1.469	1.249
170	-	4.016	3.645	3.177	2.761	2.332	2.160	1.864	1.502	1.275
175	-	4.075	3.702	3.245	2.829	2.391	2.216	1.918	1.540	1.301
180	-	4.133	3.759	3.312	2.897	2.450	2.272	1.972	1.593	1.327
185	-	4.192	3.816	3.380	2.964	2.509	2.328	2.026	1.645	1.353
190	-	4.251	3.874	3.448	3.032	2.568	2.385	2.079	1.697	1.378
195	-	4.310	3.931	3.516	3.100	2.626	2.441	2.133	1.750	1.404
200	-	-	3.988	3.584	3.168	2.685	2.497	2.187	1.802	1.430
205	-	-	4.045	3.651	3.236	2.744	2.553	2.240	1.854	1.456
210	-	-	4.102	3.719	3.304	2.803	2.610	2.294	1.906	1.482
215	-	-	4.159	3.787	3.371	2.861	2.666	2.348	1.959	1.508
220	-	-	4.216	3.855	3.439	2.937	2.722	2.401	2.011	1.540
225	-	-	4.273	3.922	3.507	3.013	2.778	2.455	2.063	1.599
230	-	-	4.330	3.990	3.575	3.089	2.834	2.509	2.116	1.657
235	-	-	-	4.058	3.643	3.165	2.906	2.562	2.168	1.715
240	-	-	-	4.126	3.711	3.241	2.991	2.616	2.220	1.773
245	-	-	-	4.194	3.778	3.317	3.076	2.670	2.272	1.831
250	-	-	-	4.261	3.846	3.393	3.162	2.724	2.325	1.889
255	-	-	-	4.329	3.914	3.469	3.247	2.777	2.377	1.947
260	-	-	-	-	3.982	3.545	3.332	2.831	2.429	2.005
265	-	-	-	-	4.050	3.621	3.418	2.915	2.482	2.064

Section factor (m ⁻¹)	Design temperature (°C)									
	350	400	450	500	550	600	620	650	700	750
270	-	-	-	-	4.118	3.697	3.503	3.041	2.534	2.122
275	-	-	-	-	4.185	3.773	3.588	3.166	2.586	2.180
280	-	-	-	-	4.253	3.849	3.673	3.291	2.638	2.238
285	-	-	-	-	4.321	3.925	3.759	3.417	2.691	2.296
290	-	-	-	-	-	4.001	3.844	3.542	2.743	2.354
295	-	-	-	-	-	4.077	3.929	3.667	2.795	2.412
300	-	-	-	-	-	4.153	4.015	3.793	2.848	2.470
305	-	-	-	-	-	4.229	4.100	3.918	3.018	2.529
310	-	-	-	-	-	4.305	4.185	4.043	3.232	2.587
315	-	-	-	-	-	-	4.271	4.169	3.446	2.645
320	-	-	-	-	-	-	4.356	4.294	3.660	2.703

Note:

Results from analysis of I- or H-sections are directly applicable to angles, channels and T-sections for the same section factor, whether used as individual elements or as bracing