



CERTIFICATE OF APPROVAL
No CF 559

This is to certify that, in accordance with
CERTIFIRE's Rules for Certification
The undermentioned products of

**FIRETHERM INTUMESCENT & INSULATION
SUPPLIES LIMITED**

**Unit F, Acorn Industrial Park, Crayford Road, Crayford
Kent, DA1 4FT**

Tel: 01322 551010 Fax: 01322 552727

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

Firesteel Classic 120

TECHNICAL SCHEDULE

**TS15 Intumescent
Coatings for Steelwork**

Signed and sealed for and on behalf of CERTIFIRE

A handwritten signature in black ink, appearing to read "Sir Ken Knight".

Sir Ken Knight
Chairman - Management Council
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Issued: 12th June 2007
Valid to: 11th June 2012



Only valid when authentic
Seal is in place
CERTIFIRE



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FIRETHERM INTUMESCENT & INSULATION
SUPPLIES LIMITED

Firesteel Classic 120

1. This approval relates to the use of Firesteel Classic 120 for the fire protection of I-shaped and hollow steel sections. The precise scope is given in Tables 1 to 7 which show the total dry film thickness of Firesteel Classic 120 (excluding primer and top sealer) required to provide fire resistance periods in accordance with BS476: Part 21: 1987 of 30 minutes up to 120 minutes for differing sections and section factors (Hp/A).
2. This certification is designed to demonstrate compliance of the product or system specifically with Approved Document B (England and Wales), Section D of the Technical Standards (Scotland), Technical Booklet E (N. Ireland). If compliance is required to other regulatory or guidance documents there may be additional considerations or conflict to be taken into account.
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: 2000.
 - 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 Sika Korrosionsschutz GmbH whose responsibility is to ensure that Firesteel Classic 120 is compatible for use in respect of both ambient and fire conditions. The total dry film thickness of primer and top sealer together should not exceed 0.1mm
6. The data shown is applicable to Firesteel Classic 120 applied by spray to horizontal, vertical, flexural and compression members supporting loads up to the maximum design loads specified in BS449: Part 2 as indicated in Tables 1, 2, 6 and 7. For other design temperatures it should be confirmed it is acceptable to utilise these temperatures prior to using the data for approval purposes.
7. The approval relates to on going production. Product and/or its immediate packaging is identified with the manufacturers' name, the product name or number, the CERTIFIRE name or name and mark, together with the CERTIFIRE certificate number and application where appropriate.
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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Firesteel Classic 120

Table 1: Four Sided Protection to I-Section Columns: Steel Temperature 550°C

15 minutes		30 minutes		45 minutes	
Section Factor m ⁻¹	Coating Thickness mm	Section Factor m ⁻¹	Coating Thickness mm	Section Factor m ⁻¹	Coating Thickness mm
320	0.44	320	0.60	320	1.48
285	0.40	285	0.55	303	1.46
250	0.36	250	0.50	285	1.40
180	0.30	215	0.45	278	1.31
up to 90	0.25	180	0.40	273	1.23
		150	0.35	269	1.15
		120	0.30	264	1.08
		up to 90	0.25	259	1.00
				255	0.92
				252	0.88
				250	0.85
				225	0.80
				198	0.75
				171	0.70
				144	0.65
				117	0.60
				90	0.55
				84	0.50
				78	0.45
				72	0.40
				66	0.35
				60	0.30
				up to 54	0.25

Thickness refers to intumescent coating only.



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**Table 1 continued : Four Sided Protection to I-Section Columns:
 Steel Temperature 550°C**

60 minutes		90 minutes		120 minutes	
Section Factor m ⁻¹	Coating Thickness mm	Section Factor m ⁻¹	Coating Thickness mm	Section Factor m ⁻¹	Coating Thickness mm
320	1.95	240	3.40	170	3.40
303	1.90	228	3.20	150	3.20
285	1.85	215	3.00	130	3.00
278	1.70	206	2.80	122	2.80
273	1.60	198	2.60	113	2.60
269	1.50	189	2.40	105	2.40
264	1.40	185	2.30	99	2.30
259	1.30	168	2.20	94	2.20
255	1.20	150	2.10	88	2.10
252	1.15	137	2.00	82	2.00
250	1.10	123	1.90	76	1.90
241	1.00	110	1.80	71	1.80
231	0.95	97	1.70	65	1.70
222	0.90	90	1.65	59	1.60
204	0.85	85	1.55	54	1.50
194	0.80	80	1.45	48	1.40
185	0.75	76	1.35	42	1.30
170	0.70	71	1.25	36	1.20
156	0.65	66	1.15	31	1.10
141	0.60	62	1.05	up to 25	1.00
127	0.55	57	0.95		
112	0.50	52	0.85		
97	0.45	47	0.75		
83	0.40	43	0.65		
71	0.35	up to 38	0.55		
53	0.30				
up to 37	0.25				

Thickness refers to intumescent coating only.



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**Table 2: Three Sided Protection to I-Section Beams: Steel Temperature
620°C**

15 minutes		30 minutes		45 minutes	
Section Factor m ⁻¹	Coating Thickness mm	Section Factor m ⁻¹	Coating Thickness mm	Section Factor m ⁻¹	Coating Thickness mm
320	0.35	320	0.46	320	1.27
285	0.32	285	0.42	317	1.23
250	0.29	250	0.38	310	1.15
180	0.26	215	0.34	304	1.08
up to 117	0.25	180	0.30	298	1.00
		up to 117	0.25	291	0.92
				285	0.85
				260	0.77
				213	0.70
				197	0.65
				145	0.60
				111	0.55
				105	0.50
				100	0.45
				94	0.40
				88	0.35
				83	0.30
				up to 77	0.25

Thickness is intumescent only.
Table applies to beams with concrete slab.



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**Table 2 continued: Three Sided Protection to I-Section Beams: Steel
 Temperature 620°C**

60 minutes		90 minutes		120 minutes	
Section Factor m ⁻¹	Coating Thickness mm	Section Factor m ⁻¹	Coating Thickness mm	Section Factor m ⁻¹	Coating Thickness mm
320	1.65	285	3.00	190	3.40
317	1.60	268	2.80	177	3.20
310	1.50	250	2.60	165	3.00
304	1.40	235	2.40	154	2.80
298	1.30	220	2.20	142	2.60
291	1.20	185	2.00	130	2.40
285	1.10	155	1.80	123	2.30
260	1.00	125	1.70	115	2.20
250	0.95	96	1.40	108	2.10
241	0.90	85	1.30	100	2.00
231	0.85	80	1.20	93	1.90
222	0.80	75	1.00	85	1.80
212	0.75	70	0.90	78	1.70
202	0.70	65	0.80	70	1.60
193	0.65	55	0.70	63	1.50
183	0.60	50	0.60	55	1.40
173	0.55	up to 48	0.55	48	1.30
164	0.50			40	1.20
154	0.45			33	1.10
127	0.40			up to 25	1.00
99	0.35				
72	0.30				
up to 44	0.25				

Thickness is intumescent only.
 Table applies to beams with concrete slab.



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Table 3: Structural Steel I-Sections: Steel Temperature 500°C

15 minutes		30 minutes		45 minutes	
Section Factor m ⁻¹	Coating Thickness mm	Section Factor m ⁻¹	Coating Thickness mm	Section Factor m ⁻¹	Coating Thickness mm
320	0.55	320	0.75	320	1.85
256	0.43	256	0.60	256	1.50
228	0.39	228	0.55	228	1.42
200	0.35	200	0.50	215	1.35
144	0.27	144	0.40	200	0.85
up to 83	0.25	124	0.35	174	0.77
		103	0.30	162	0.73
		up to 83	0.25	149	0.69
				136	0.65
				110	0.62
				82	0.58
				77	0.55
				71	0.45
				66	0.40
				61	0.35
				55	0.30
				up to 50	0.25

Thickness is intumescent only.



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Table 3 continued: Structural Steel I-Sections: Steel Temperature 500°C

60 minutes		90 minutes		120 minutes	
Section Factor m ⁻¹	Coating Thickness mm	Section Factor m ⁻¹	Coating Thickness mm	Section Factor m ⁻¹	Coating Thickness mm
320	2.40	192	3.40	136	3.40
256	1.95	182	3.20	120	3.20
228	1.85	172	3.00	104	3.00
215	1.75	165	2.80	97	2.80
200	1.10	148	2.60	91	2.60
174	1.00	120	2.30	84	2.40
162	0.95	99	2.10	76	2.20
149	0.90	72	1.65	67	2.00
136	0.85	70	1.60	59	1.80
123	0.80	64	1.40	50	1.60
110	0.75	57	1.20	42	1.40
97	0.70	51	1.00	33	1.20
85	0.65	44	0.80	up to 25	1.00
72	0.60	38	0.60		
59	0.55	up to 36	0.55		
55	0.50				
51	0.45				
48	0.40				
44	0.35				
40	0.30				
up to 36	0.25				

Thickness is intumescent only.



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Table 4: Structural Steel I-Sections: Steel Temperature 600°C

15 minutes		30 minutes		45 minutes	
Section Factor m ⁻¹	Coating Thickness mm	Section Factor m ⁻¹	Coating Thickness mm	Section Factor m ⁻¹	Coating Thickness mm
320	0.39	320	0.51	320	1.41
288	0.35	288	0.46	288	1.27
225	0.29	257	0.42	282	1.19
up to 105	0.25	225	0.38	277	1.11
		194	0.34	271	1.04
		162	0.30	265	0.96
		up to 105	0.25	257	0.85
				162	0.77
				149	0.73
				137	0.69
				124	0.65
				112	0.62
				99	0.58
				93	0.55
				87	0.50
				83	0.45
				78	0.40
				73	0.35
				68	0.30
				up to 63	0.25

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Table 4 continued: Structural Steel I-Sections: Steel Temperature 600°C

60 minutes		90 minutes		120 minutes	
Section Factor m ⁻¹	Coating Thickness mm	Section Factor m ⁻¹	Coating Thickness mm	Section Factor m ⁻¹	Coating Thickness mm
320	1.83	257	3.00	171	3.40
288	1.65	225	2.70	160	3.20
282	1.55	211	2.50	149	3.00
277	1.45	198	2.30	138	2.80
271	1.35	167	2.10	128	2.60
265	1.25	143	1.90	117	2.40
257	1.10	131	1.80	104	2.20
162	1.00	113	1.65	91	2.00
149	0.95	98	1.50	78	1.80
137	0.90	87	1.40	64	1.60
124	0.85	77	1.30	51	1.40
112	0.80	73	1.20	38	1.20
99	0.75	69	1.10	32	1.10
92	0.70	65	1.00	up to 25	1.00
86	0.65	61	0.90		
79	0.60	57	0.80		
72	0.55	53	0.70		
67	0.50	49	0.60		
62	0.45	up to 47	0.55		
57	0.40				
52	0.35				
47	0.30				
up to 42	0.25				

Thickness is intumescent only.



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Table 5: Structural Steel I-Sections: Steel Temperature 650°C

15 minutes		30 minutes		45 minutes	
Section Factor m ⁻¹	Coating Thickness mm	Section Factor m ⁻¹	Coating Thickness mm	Section Factor m ⁻¹	Coating Thickness mm
320	0.333	320	0.44	320	1.19
288	0.30	279	0.40	295	0.85
up to 135	0.25	259	0.38	242	0.81
		187	0.30	187	0.77
		up to 136	0.25	172	0.73
				157	0.69
				143	0.65
				128	0.62
				114	0.55
				106	0.50
				99	0.45
				91	0.40
				84	0.35
				76	0.30
				up to 69	0.25
60 minutes		90 minutes		120 minutes	
Section Factor m ⁻¹	Coating Thickness mm	Section Factor m ⁻¹	Coating Thickness mm	Section Factor m ⁻¹	Coating Thickness mm
320	1.55	295	3.00	197	3.40
295	1.10	271	2.80	184	3.20
242	1.05	259	2.70	171	3.00
187	1.00	240	2.50	158	2.80
172	0.95	228	2.30	141	2.60
157	0.90	192	2.10	135	2.40
143	0.85	164	1.90	119	2.20
128	0.80	130	1.65	104	2.00
114	0.75	112	1.50	88	1.80
107	0.70	100	1.40	72	1.60
101	0.65	88	1.30	57	1.40
94	0.60	83	1.20	41	1.20
87	0.55	78	1.10	up to 25	1.00
80	0.50	73	1.00		
74	0.45	68	0.90		
67	0.40	63	0.80		
60	0.35	58	0.70		
54	0.30	53	0.60		
up to 47	0.25	up to 51	0.55		

Thickness is intumescent only.



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Table 6: Structural Steel Hollow Section Columns (RHS and CHS)

15 minutes		30 minutes		45 minutes	
Section Factor m ⁻¹	Coating Thickness mm	Section Factor m ⁻¹	Coating Thickness mm	Section Factor m ⁻¹	Coating Thickness mm
320	1.00	320	1.30	320	2.54
288	0.90	288	1.20	290	2.30
255	0.83	255	1.10	260	2.06
230	0.79	230	1.05	247	1.96
223	0.77	223	1.00	238	1.90
216	0.75	216	0.95	235	1.88
209	0.73	209	0.90	229	1.80
up to 166	0.60	202	0.85	226	1.75
		194	0.80	222	1.70
		187	0.75	218	1.65
		180	0.70	215	1.60
		173	0.65	210	1.55
		up to 166	0.60	208	1.50
				205	1.45
				202	1.40
				199	1.35
				196	1.30
				193	1.25
				190	1.20
				175	1.15
				160	1.10
				145	1.05
				130	1.00
				126	0.95
				121	0.90
				117	0.85
				113	0.80
				108	0.75
				104	0.70
				99	0.65
				up to 95	0.60

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Table 6 Continued: Structural Steel Hollow Section Columns (RHS and CHS)

60 minutes		90 minutes		120 minutes	
Section Factor m ⁻¹	Coating Thickness mm	Section Factor m ⁻¹	Coating Thickness mm	Section Factor m ⁻¹	Coating Thickness mm
260	2.75	90	2.60	80	3.00
235	2.50	85	2.50	75	2.97
223	2.30	80	2.40	70	2.93
210	2.05	75	2.30	65	2.90
200	1.80	70	2.20	60	2.86
190	1.60	65	2.10	55	2.83
170	1.50	60	2.00	50	2.79
150	1.40	55	1.90	45	2.76
130	1.30	50	1.80	40	2.72
120	1.20	45	1.70	up to 37	2.70
110	1.10	40	1.60		
105	1.06	35	1.50		
100	1.00	30	1.40		
96	0.95	up to 25	1.30		
92	0.90				
88	0.85				
84	0.80				
79	0.75				
75	0.70				
71	0.65				
up to 67	0.60				

Thickness is intumescent only.



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Table 7: Structural Steel Hollow Section Beams (RHS)

15 minutes		30 minutes		45 minutes	
Section Factor m ⁻¹	Coating Thickness mm	Section Factor m ⁻¹	Coating Thickness mm	Section Factor m ⁻¹	Coating Thickness mm
320	0.83	320	1.10	320	2.20
285	0.79	285	1.05	295	2.03
250	0.75	250	1.00	285	1.95
231	0.70	243	0.95	275	1.85
211	0.65	236	0.90	270	1.80
up to 192	0.60	228	0.85	257	1.70
		221	0.80	240	1.58
		214	0.75	230	1.50
		207	0.70	217	1.40
		up to 192	0.60	210	1.35
				197	1.25
				180	1.13
				165	0.98
				152	0.90
				144	0.85
				135	0.80
				127	0.75
				118	0.70
				110	0.65
				up to 100	0.60

Thickness is intumescent only.
 Table applies to beams with concrete slab.



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Table 7 Continued: Structural Steel Hollow Section Beams (RHS)

60minutes		90 minutes				120 minutes	
Section Factor m ⁻¹	Coating Thickness mm	Section Factor m ⁻¹	Coating Thickness mm	Section Factor m ⁻¹	Coating Thickness mm	Section Factor m ⁻¹	Coating Thickness mm
295	2.70	255	3.30	135	2.29	170	3.30
285	2.60	250	3.26	130	2.25	165	3.23
270	2.40	245	3.22	125	2.20	160	3.17
240	2.10	240	3.18	120	2.16	155	3.10
220	1.90	235	3.14	115	2.11	150	3.03
210	1.80	230	3.10	110	2.07	145	2.97
200	1.70	225	3.06	105	2.02	140	2.90
190	1.60	220	3.02	100	1.98	135	2.83
180	1.50	215	2.98	95	1.93	130	2.77
172	1.40	210	2.94	90	1.89	125	2.70
165	1.30	205	2.90	85	1.84	120	2.63
133	1.20	200	2.86	80	1.80	up to 115	2.57
100	1.10	195	2.82	75	1.75		
87	1.06	190	2.78	70	1.71		
86	1.00	185	2.74	65	1.66		
85	0.95	180	2.70	60	1.62		
84	0.90	175	2.65	55	1.57		
82	0.85	170	2.61	50	1.53		
81	0.80	165	2.56	45	1.48		
80	0.75	160	2.52	40	1.44		
79	0.70	155	2.47	35	1.39		
78	0.65	150	2.43	30	1.35		
up to 77	0.60	145	2.38	up to 25	1.30		
		140	2.34				

Thickness is intumescent only.
 Table applies to beams with concrete slab.