



CERTIFICATE OF APPROVAL
No CF 545

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	TECHNICAL SCHEDULE
Firesteel 47-4 and Firesteel 47-4 EXT	TS15 Intumescent Coatings for Steelwork

Signed and sealed for and on behalf of CERTIFIRE

Sir Ken Knight
Chairman - Management Council
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Issued: 21st May 2007
Valid to: 20th May 2012



Seal is in place Only valid when authentic
CERTIFIRE



CERTIFICATE No CF 545
FIRETHERM INTUMESCENT & INSULATION SUPPLIES LIMITED

Firesteel 47-4 and Firesteel 47-4 EXT

1. This approval relates to the use of Firesteel 47-4 and Firesteel 47-4 EXT for the fire protection of I-shaped and hollow steel sections. The precise scope is given in Tables 1 to 3 which show the total dry film thickness of Firesteel 47-4 and Firesteel 47-4 EXT (excluding primer and top sealer) required to provide fire resistance periods in accordance with BS476: Part 21: 1987 of 30 minutes up to 90 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 are 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 International Paint Limited whose responsibility is to ensure that Firesteel 47-4 and Firesteel 47-4 EXT is compatible for use in respect of both ambient and fire conditions. The total dry film thickness of primer should not exceed that tested.
6. The data shown is applicable to Firesteel 47-4 and Firesteel 47-4 EXT 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 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 are based on assessments which comply with the criteria for acceptability now incorporated within the Certifire scheme.



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Firesteel 47-4 and Firesteel 47-4 EXT

Table 1: Three Sided I-Section Beams: 620°C

30 minutes		60 minutes				90 minutes	
Section factor m ⁻¹	Material Thickness mm	Section factor m ⁻¹	Material Thickness mm	Section factor m ⁻¹	Material Thickness mm	Section factor m ⁻¹	Material Thickness mm
208	0.290	100	0.324	215	0.501	Up to 105	1.16
230	0.300	105	0.332	220	0.509	114	1.30
240	0.310	110	0.340	225	0.517	120	1.39
260	0.320	115	0.347	230	0.525	125	1.47
270	0.330	120	0.355	235	0.532	130	1.54
300	0.340	125	0.363	240	0.540	135	1.62
320	0.350	130	0.370	245	0.566	140	1.69
		135	0.378	250	0.591	147	1.80
		140	0.386	255	0.617	150	1.84
		145	0.394	260	0.642	155	1.92
		150	0.401	265	0.668	160	1.99
		155	0.409	270	0.693	165	2.06
		160	0.417	275	0.719	175	2.10
		165	0.424	280	0.744		
		170	0.432	285	0.770		
		175	0.440	290	0.817		
		180	0.448	295	0.864		
		185	0.455	300	0.911		
		190	0.463	305	0.959		
		195	0.471	310	1.006		
		200	0.478	315	1.053		
		205	0.486	320	1.100		
		210	0.494				

Thickness is intumescent only. Beams with a concrete slab.



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Firesteel 47-4 and Firesteel 47-4 EXT

Table 2: Four Sided I-Section Columns and Beams: 550°C

30 minutes		60 minutes				90 minutes	
Section Factor up to m ⁻¹	Material Thickness mm	Section Factor up to m ⁻¹	Material Thickness mm	Section Factor up to m ⁻¹	Material Thickness mm	Section Factor up to m ⁻¹	Material Thickness mm
200	0.30	75	0.34	175	0.68	Up to 85	1.21
205	0.31	80	0.36	182	0.70	91	1.30
210	0.32	85	0.38	185	0.73	95	1.36
220	0.33	90	0.40	190	0.77	100	1.43
225	0.34	95	0.42	195	0.81	105	1.51
230	0.35	100	0.44	200	0.85	110	1.58
235	0.36	105	0.47	205	0.90	115	1.65
240	0.37	111	0.49	210	0.94	120	1.73
250	0.38	115	0.50	215	0.98	125	1.80
255	0.39	120	0.52	220	1.02	130	1.90
260	0.40	125	0.53	225	1.07	135	2.00
265	0.41	130	0.55	230	1.11	140	2.10
270	0.42	135	0.56	235	1.15		
280	0.43	140	0.58	240	1.20		
285	0.44	145	0.59	245	1.24		
290	0.45	150	0.61	250	1.28		
295	0.46	155	0.62	255	1.32		
300	0.47	160	0.63	260	1.37		
310	0.48	165	0.65	320	2.10		
313	0.49	170	0.66				
320	0.50						

Thickness refers to intumescent coating.
 Tables apply to 4-sided beams.



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Table 3: Four Sided Rectangular Hollow Columns: 520°C

30 minutes				60 minutes	
Section factor m ⁻¹	Material Thickness mm	Section factor m ⁻¹	Material Thickness mm	Section factor m ⁻¹	Material Thickness mm
Up to 125	0.40	230	1.08	Up to 75	1.28
135	0.48	235	1.11	80	1.47
140	0.51	240	1.14	85	1.65
145	0.54	245	1.17	90	1.84
150	0.57	250	1.19	95	2.03
155	0.60	255	1.22	100	2.22
160	0.63	260	1.25	105	2.40
165	0.67	265	1.28	110	2.59
170	0.70	270	1.33	115	2.71
175	0.76	275	1.38	120	2.81
180	0.79	280	1.38	125	2.90
185	0.82	285	1.44	130	3.00
190	0.85	290	1.49	135	3.10
195	0.88	295	1.54	140	3.14
200	0.91	300	1.59	145	3.18
205	0.94	305	1.64	150	3.22
210	0.96	310	1.70	155	3.26
215	0.99	315	1.75	160	3.30
220	1.02	320	1.80	165	3.34
225	1.05			170	3.39
				175	3.43
				180	3.47
				185	3.51
				190	3.55
				195	3.59
				200	3.63

Thickness refers to intumescent coating (maximum for beams 2.10mm).