

	INTUMESCENT COATING FIRE PROTECTION SYSTEM CERTIFICATE NO.	RPL1 Version 2.0
	WARNING: This certificate may only be reproduced in full	
	SYSTEM NAME: W&J LEIGH & CO FIRETEX M70/M71 & FIRETEX M77/M71	DATE ISSUED: April 2005 EXPIRY DATE: 30 June 2008
PO Box 6825 St Kilda Road Central VIC 8008 Tel: +61 3 9865 8644 Fax: +61 3 9865 8615 www.certifire.com.au info@certifire.com.au	SUPPLIER: Resene Paints (Australia) Pty Ltd PO Box 785, Ashmore City QLD 4214 Tel +61 7 5594 9522 Fax +61 7 5594 9093	

1. SCOPE

This certificate relates to the use of Firetex M70/M71 and Firetex M77/M71 intumescent coating systems for the fire protection of structural steel sections that have been appraised against Certifire schedules [CA001](#), [CA002](#), and [CA033](#). These schedules require that the FRLs of the system have been established in accordance with the BCA provisions and that the products are manufactured/supplied under an independently audited quality management system.

The Firetex M70/M71 intumescent coating system consists of the primer Metagard G250, the intumescent paint Firetex M70 Intubuild, and the top sealer Firetex M71 Intuseal.

The Firetex M77/M71 intumescent coating system consists of the primer Metagard G250, the intumescent paint Firetex M77 Intubuild, and the top sealer Firetex M71 Intuseal.

2. FIELD OF APPLICATION

- This certificate relates to the use of Firetex M70/M71 and Firetex M77/M71 intumescent coating fire protection systems for structural steel.
- The different thicknesses of the Firetex M70/M71 and Firetex M77/M71 intumescent coating fire protection systems have been established for different steel sections and for Fire Resistance Levels (FRLs) in accordance with the BCA provisions and relevant Certifire schedules and are given in the Tables below ([RPL1.2.1 to RPL1.2.13](#)).
- The data referring to three-sided beams relate to beams supporting concrete floor slabs. Separate consideration is required where this is not the case.
- The data shown are applicable to Firetex M70/71 and Firetex M77/M71 applied by brush or spray to horizontal, vertical or flexural and compression members supporting loads up to the maximum design loads specified in AS4100.
- The dry film thicknesses quoted refer to Firetex M70 and Firetex M77 excluding primer and top sealer, where the thickness of the primer and top sealer together do not exceed 0.20mm

Performance of Firetex intumescent coating fire protection system:

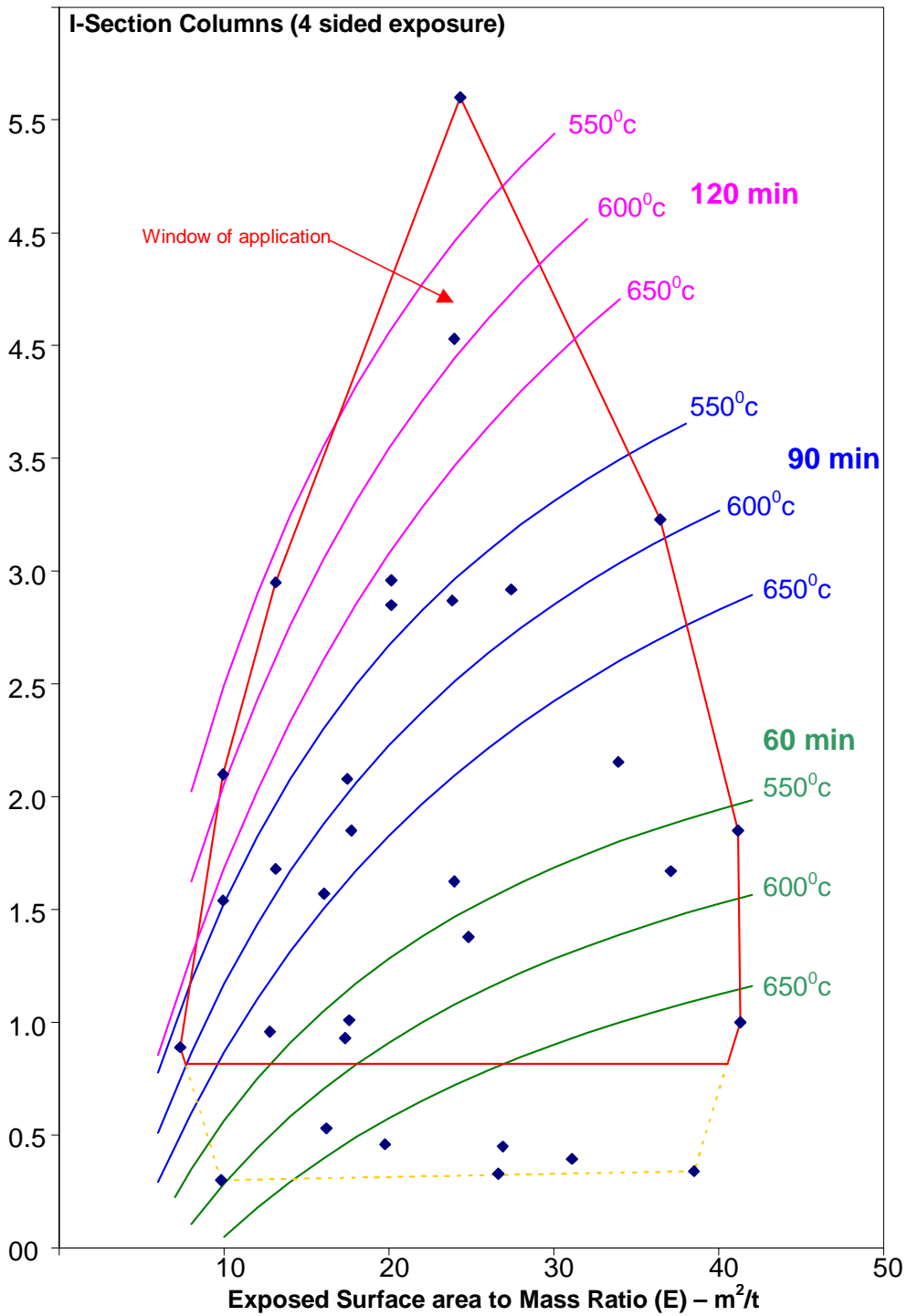


Figure RLP1.2.1: Window application and design chart for various critical temperatures for I-section steel columns (4sided exposure)

		Material Thickness (mm) for FRL of 120 min		
E (m ² /t)	H _p /A (m ⁻¹)	550°C	600°C	650°
Up to 8	Up to 63	3.7	2.1	1.
10	79	3.7	2.1	1.
12	94	3.7	2.5	2.
14	110	3.7	2.8	2.
16	126	3.7	3.1	2.
18	141	3.9	3.4	2.
20	157	4.1	3.6	3.
22	173	4.3	3.8	3.
24	188	4.5	4.0	3.
26	204	4.7	4.2	3.
28	220	-	4.3	3.
29	228	-	4.4	3.
31	243	-	-	4.

Figure RLP1.2.2: Design table to select applied thickness for various exposed surface area to mass ratios (E) or section factors (H_p/A) for I-section steel columns (4-sided exposure) to achieve FRL of 120 minutes.

		Material Thickness (mm) for FRL of 90 min		
E (m ² /t)	H _p /A (m ⁻¹)	550°C	600°C	650°
Up to 8	Up to 63	1.2	0.9	0.
10	79	1.6	1.2	0.
12	94	1.9	1.5	1.
14	110	2.1	1.7	1.
16	126	2.4	1.9	1.
18	141	2.5	2.1	1.
20	157	2.7	2.3	1.
22	173	2.9	2.4	2.
24	188	3.0	2.6	2.
26	204	3.1	2.7	2.
28	220	3.3	2.8	2.
30	236	3.4	2.9	2.
32	251	3.5	3.0	2.
34	267	3.5	3.1	2.
36	283	-	3.2	2.
38	298	-	-	2.

Figure RLP1.2.3: Design table to select applied thickness for various exposed surface area to mass ratios (E) or section factors (H_p/A) for I-section steel columns (4-sided exposure) to achieve FRL of 90 minutes.

		Material Thickness (mm) for FRL of 60 min		
E (m ² /t)	H _p /A (m ⁻¹)	550°C	600°C	650°
Up to 13	Up to 102	0.9	0.9	0.
14	110	1.0	0.9	0.
16	126	1.1	0.9	0.
18	141	1.2	0.9	0.
20	157	1.3	1.0	0.
22	173	1.4	1.0	0.
24	188	1.5	1.1	0.
26	204	1.6	1.2	0.
28	220	1.7	1.3	0.
30	236	1.7	1.3	1.
32	251	1.8	1.4	1.
34	267	1.9	1.4	1.
36	283	1.9	1.5	1.
38	298	2.0	1.5	1.
40	314	2.0	1.6	1.
41	322	-	1.6	1.

Figure RLP1.2.4: *Design table to select applied thickness for various exposed surface area to mass ratios (E) or section factors (H_p/A) for I-section steel columns (4-sided exposure) to achieve FRL of 60 minutes.*

		Material Thickness (mm) for FRL of 30 min		
E (m ² /t)	H _p /A (m ⁻¹)	550°C	600°C	650°
Up to 40	Up to 314	0.9	0.9	0.
41	322	1.0	1.0	1.

Figure RLP1.2.5: *Design table to select applied thickness for various exposed surface area to mass ratios (E) or section factors (H_p/A) for I-section steel columns (4-sided exposure) to achieve FRL of 30 minutes.*

		Material Thickness (mm) for Critical Temperature of 550°C (R =			
SECTION	E (m ² /t)	30 min	60 min	90 min	120 min
760UB244	10.6	0.9	0.9	1.7	3.
760UB220	11.7	0.9	0.9	1.8	3.
760UB197	12.9	0.9	0.9	2.0	3.
760UB173	14.6	0.9	1.0	2.2	3.
760UB147	17.0	0.9	1.2	2.5	3.
690UB140	16.6	0.9	1.1	2.4	3.
690UB125	18.6	0.9	1.3	2.6	3.
610UB125	16.7	0.9	1.1	2.4	3.
610UB113	18.4	0.9	1.2	2.6	3.
610UB101	20.5	0.9	1.4	2.8	4.
530UB92	20.1	0.9	1.3	2.7	4.
530UB82	22.6	0.9	1.5	2.9	4.
460UB82	20.1	0.9	1.3	2.7	4.
460UB74	22.0	0.9	1.4	2.9	4.
460UB67	24.3	0.9	1.5	3.0	4.
410UB60	25.0	0.9	1.6	3.1	4.
410UB54	27.6	0.9	1.7	3.2	-
360UB57	24.2	0.9	1.5	3	4.
360UB51	26.8	0.9	1.6	3.2	4.
360UB45	30.4	0.9	1.7	3.4	-
310UB46	27.1	0.9	1.6	3.2	-
310UB40	30.7	0.9	1.8	3.4	-
250UB37	28.7	0.9	1.7	3.3	-
250UB31	33.8	0.9	1.8	3.5	-
200UB30	31.0	0.9	1.8	3.4	-
200UB25	36.0	0.9	1.9	-	-
180UB22	31.1	0.9	1.8	3.4	-
180UB18	37.8	0.9	1.9	-	-
150UB18	32.4	0.9	1.8	3.5	-
150UB14	41.1	1.0	-	-	-
310UC283	6.9	0.9	0.9	1.2	3.
310UC240	7.9	0.9	0.9	1.2	3.
310UC198	9.4	0.9	0.9	1.5	3.
310UC158	11.6	0.9	0.9	1.8	3.
310UC137	13.3	0.9	0.9	2.0	3.
310UC118	15.3	0.9	1.1	2.3	3.
310UC97	18.5	0.9	1.3	2.6	3.
250UC89	16.8	0.9	1.2	2.4	3.
250UC73	20.3	0.9	1.3	2.7	4.
200UC30	20.2	0.9	1.3	2.7	4.
200UC52	22.8	0.9	1.5	2.9	4.
200UC46	25.8	0.9	1.6	3.1	4.
150UC38	23.8	0.9	1.5	3.0	4.
150UC37	24.5	0.9	1.5	3.0	4.
150UC30	30.0	0.9	1.7	3.4	-
150UC23	38.0	0.9	2.0	-	-
100UC15	38.0	0.9	2.0	-	-

Figure RLP1.2.6: *Design table for commonly occurring I-column sections (4-sided exposure) for critical temperature of 550°C (load ratio of 0.514).*

		Material Thickness (mm) for Critical Temperature of 650°C (R =			
SECTION	E (m ² /t)	30 min	60 min	90 min	120 min
760UB244	10.6	0.9	0.9	1.0	1.
760UB220	11.7	0.9	0.9	1.1	2.
760UB197	12.9	0.9	0.9	1.3	2.
760UB173	14.6	0.9	0.9	1.4	2.
760UB147	17.0	0.9	0.9	1.6	2.
690UB140	16.6	0.9	0.9	1.6	2.
690UB125	18.6	0.9	0.9	1.8	3.
610UB125	16.7	0.9	0.9	1.6	2.
610UB113	18.4	0.9	0.9	1.8	3.
610UB101	20.5	0.9	0.9	1.9	3.
530UB92	20.1	0.9	0.9	1.9	3.
530UB82	22.6	0.9	0.9	2.1	3.
460UB82	20.1	0.9	0.9	1.9	3.
460UB74	22.0	0.9	0.9	2.0	3.
460UB67	24.3	0.9	0.9	2.2	3.
410UB60	25.0	0.9	0.9	2.2	3.
410UB54	27.6	0.9	0.9	2.4	3.
360UB57	24.2	0.9	0.9	2.2	3.
360UB51	26.8	0.9	0.9	2.3	3.
360UB45	30.4	0.9	1.0	2.5	4.
310UB46	27.1	0.9	0.9	2.3	3.
310UB40	30.7	0.9	1.0	2.5	4.
250UB37	28.7	0.9	0.9	2.4	3.
250UB31	33.8	0.9	1.0	2.6	-
200UB30	31.0	0.9	1.0	2.5	4.
200UB25	36.0	0.9	1.1	2.7	-
180UB22	31.1	0.9	1.0	2.5	4.
180UB18	37.8	0.9	1.1	2.8	-
150UB18	32.4	0.9	1.0	2.6	-
150UB14	41.1	1.0	1.2	-	-
310UC283	6.9	0.9	0.9	0.9	1.
310UC240	7.9	0.9	0.9	0.9	1.
310UC198	9.4	0.9	0.9	0.9	1.
310UC158	11.6	0.9	0.9	1.1	2.
310UC137	13.3	0.9	0.9	1.3	2.
310UC118	15.3	0.9	0.9	1.5	2.
310UC97	18.5	0.9	0.9	1.8	3.
250UC89	16.8	0.9	0.9	1.6	2.
250UC73	20.3	0.9	0.9	1.9	3.
200UC30	20.2	0.9	0.9	1.9	3.
200UC52	22.8	0.9	0.9	2.1	3.
200UC46	25.8	0.9	0.9	2.3	3.
150UC38	23.8	0.9	0.9	2.1	3.
150UC37	24.5	0.9	0.9	2.2	3.
150UC30	30.0	0.9	1.0	2.5	4.
150UC23	38.0	0.9	1.1	2.8	-
100UC15	38.0	0.9	1.1	2.8	-

Figure RLP1.2.7: *Design table for commonly occurring I-column sections (4-sided exposure) for critical temperature of 650°C (load ratio of 0.370).*

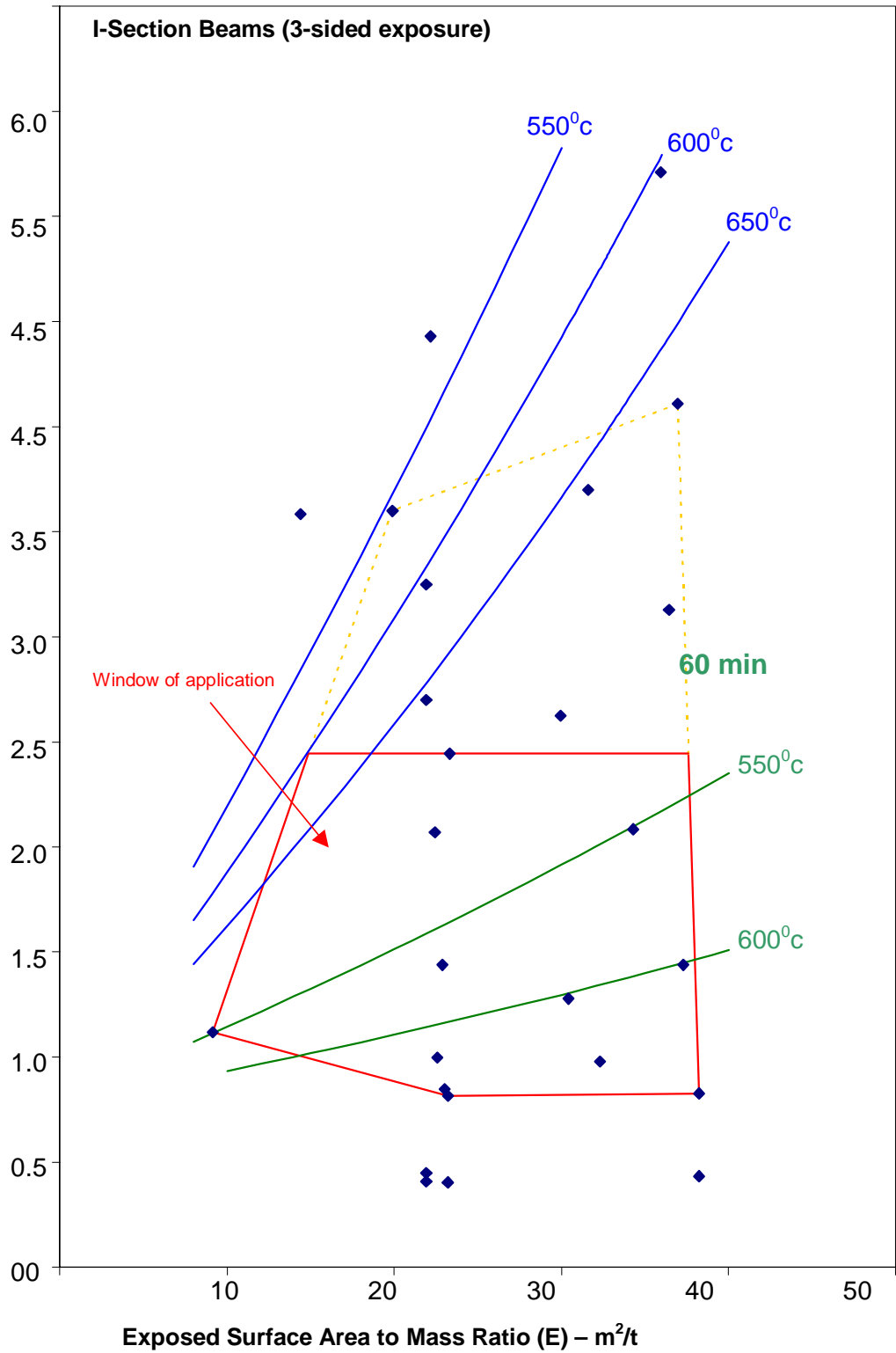


Figure RLP1.2.8: Window of application and design chart for various critical temperatures for I-section steel beams (3-sided exposure)

		Material Thickness (mm) for FRL of 90 min		
E (m ² /t)	H _p /A (m ⁻¹)	550°C	600°C	650°
Up to 12	Up to 94	2.5	2.5	1.
14	110	2.5	2.5	2.
16	126	2.5	2.5	2.
18	141	2.5	2.5	2.
20	157	2.5	2.5	2.
22	173	2.5	2.5	2.
23	181	2.5	2.5	2.

Figure RLP1.2.9: *Design table to select applied thickness for various exposed surface area to mass ratios (E) or section factors (H_p/A) for I-section steel beams (3-sided exposure) to achieve FRL of 90 minutes.*

		Material Thickness (mm) for FRL of 60 min		
E (m ² /t)	H _p /A (m ⁻¹)	550°C	600°C	650°
Up to 10	Up to 79	1.2	1.1	0.
12	94	1.3	1.1	0.
14	110	1.3	1.1	0.
16	126	1.4	1.1	0.
18	141	1.5	1.1	0.
20	157	1.6	1.2	0.
22	173	1.6	1.2	0.
24	188	1.7	1.2	0.
26	204	1.8	1.3	0.
28	220	1.9	1.3	0.
30	236	2.0	1.3	0.
32	251	2.1	1.4	0.
34	267	2.1	1.4	0.
36	283	2.2	1.5	0.
37	290	2.3	1.5	0.

Figure RLP1.2.10: *Design table to select applied thickness for various exposed surface area to mass ratios (E) or section factors (H_p/A) for universal section steel beams (3-sided exposure) to achieve FRL of 60 minutes.*

		Material Thickness (mm) for FRL of 30 min		
E (m ² /t)	H _p /A (m ⁻¹)	550°C	600°C	650°
Up to 23	Up to 181	0.5	0.5	0.
23 - 38	181 – 298	0.9	0.9	0.

Figure RLP1.2.11: *Design table to select applied thickness for various exposed surface area to mass ratios (E) or section factors (H_p/A) for universal section steel beams (3-sided exposure) to achieve FRL of 30 minutes.*

		Material Thickness (mm) for Critical Temperature of 550°C (R =		
SECTION	E (m ² /t)	30 min	60 min	90
760UB244	9.5	0.5	1.2	2.
760UB220	10.5	0.5	1.2	2.
760UB197	11.6	0.5	1.3	2.
760UB173	13.1	0.5	1.3	2.
760UB147	15.2	0.5	1.4	2.
690UB140	14.8	0.5	1.4	2.
690UB125	16.5	0.5	1.4	2.
610UB125	14.9	0.5	1.4	2.
610UB113	16.4	0.5	1.4	2.
610UB101	18.2	0.5	1.5	2.
530UB92	17.9	0.5	1.5	2.
530UB82	20.0	0.5	1.6	2.
460UB82	17.8	0.5	1.5	2.
460UB74	19.4	0.5	1.5	2.
460UB67	21.5	0.5	1.6	2.
410UB60	22.0	0.5	1.6	2.
410UB54	24.3	0.9	1.7	-
360UB57	21.1	0.5	1.6	2.
360UB51	23.4	0.9	1.7	-
360UB45	26.6	0.9	1.8	-
310UB46	23.5	0.9	1.7	-
310UB40	26.6	0.9	1.8	-
250UB37	24.8	0.9	1.8	-
250UB31	29.1	0.9	1.9	-
200UB30	26.5	0.9	1.8	-
200UB25	30.8	0.9	2.0	-
180UB22	27.1	0.9	1.8	-
180UB18	32.9	0.9	2.1	-
150UB18	28.3	0.9	1.9	-
150UB14	35.8	0.9	2.2	-
310UC283	5.7	0.5	1.2	2.
310UC240	6.6	0.5	1.2	2.
310UC198	7.9	0.5	1.2	2.
310UC158	9.7	0.5	1.2	2.
310UC137	11.0	0.5	1.2	2.
310UC118	12.7	0.5	1.3	2.
310UC97	15.3	0.5	1.4	2.
250UC89	13.9	0.5	1.3	2.
250UC73	16.8	0.5	1.4	2.
200UC30	16.7	0.5	1.4	2.
200UC52	18.9	0.5	1.5	2.
200UC46	21.4	0.5	1.6	2.
150UC38	19.8	0.5	1.6	2.
150UC37	20.4	0.5	1.6	2.
150UC30	24.9	0.9	1.8	-
150UC23	31.5	0.9	2.0	-
100UC15	31.4	0.9	2.0	-

Figure RLP1.2.12: Design table for commonly occurring I-beam sections (3-sided exposure) for critical temperature of 550° C (load ratio of 5.14).

		Material Thickness (mm) for Critical Temperature of 650°C (R =		
SECTION	E (m ² /t)	30 min	60 min	90
760UB244	9.5	0.5	0.9	1.
760UB220	10.5	0.5	0.9	1.
760UB197	11.6	0.5	0.9	1.
760UB173	13.1	0.5	0.9	2.
760UB147	15.2	0.5	0.9	2.
690UB140	14.8	0.5	0.9	2.
690UB125	16.5	0.5	0.9	2.
610UB125	14.9	0.5	0.9	2.
610UB113	16.4	0.5	0.9	2.
610UB101	18.2	0.5	0.9	2.
530UB92	17.9	0.5	0.9	2.
530UB82	20.0	0.5	0.9	2.
460UB82	17.8	0.5	0.9	2.
460UB74	19.4	0.5	0.9	2.
460UB67	21.5	0.5	0.9	2.
410UB60	22.0	0.5	0.9	2.
410UB54	24.3	0.9	0.9	-
360UB57	21.1	0.5	0.9	2.
360UB51	23.4	0.9	0.9	-
360UB45	26.6	0.9	0.9	-
310UB46	23.5	0.9	0.9	-
310UB40	26.6	0.9	0.9	-
250UB37	24.8	0.9	0.9	-
250UB31	29.1	0.9	0.9	-
200UB30	26.5	0.9	0.9	-
200UB25	30.8	0.9	0.9	-
180UB22	27.1	0.9	0.9	-
180UB18	32.9	0.9	0.9	-
150UB18	28.3	0.9	0.9	-
150UB14	35.8	0.9	0.9	-
310UC283	5.7	0.5	0.9	1.
310UC240	6.6	0.5	0.9	1.
310UC198	7.9	0.5	0.9	1.
310UC158	9.7	0.5	0.9	1.
310UC137	11.0	0.5	0.9	1.
310UC118	12.7	0.5	0.9	1.
310UC97	15.3	0.5	0.9	2.
250UC89	13.9	0.5	0.9	2.
250UC73	16.8	0.5	0.9	2.
200UC30	16.7	0.5	0.9	2.
200UC52	18.9	0.5	0.9	2.
200UC46	21.4	0.5	0.9	2.
150UC38	19.8	0.5	0.9	2.
150UC37	20.4	0.5	0.9	2.
150UC30	24.9	0.9	0.9	-
150UC23	31.5	0.9	0.9	-
100UC15	31.4	0.9	0.9	-

Figure RLP1.2.13: *Design table for commonly occurring I-beam sections (3-sided exposure) for critical temperature of 650°C (load ratio of 3.70).*

3. DESCRIPTION OF COMPONENTS

The Firetex M70/M71 and Firetex M77/M71 intumescent coating system consists of the following:

1. Certifire approved primer (see list below),
2. The intumescent paint, Firetex M70 or M77Intubuild, and
3. Certifire approved top sealer (see list below)

CERTIFIRE APPROVED PRIMERS

W.J Leigh & Co. - Metagard G250

CERTIFIRE APPROVED TOP SEALS

W.J Leigh & Co. - Firetex M71 Intuseal.

NOTE – No changes to the primer or top seal are allowed.

4. INSTALLATION SUMMARY

- Prior to application of the intumescent coating fire protection system, the steel surfaces are to be shot-blasted or grit-blasted to remove rust and dust to grade Sa2.5 as per International Standards, ISO 8501-1: 1988, BS 7079:Part A1:1989
- A Certifire approved primer, (see section 3 above), is first applied to a target nominal thickness of 20 –50 µm
- The intumescent paint, M70 or M77 Intubuild, is then applied. Refer to the manufacturer's instructions for maximum thickness applicable to each individual coat, as multiple coats may be applicable for some steel sections and fire ratings
- A Certifire approved top sealer, (see section 3 above) is then applied to a target nominal thickness of 0.1mm
- It is recommended that the system described in this certificate is installed by a Certifire listed Fire Protection Contractor certified in the appropriate category and that the installation be required to be labelled with a Certifire Label.

5. SERVICEABILITY DATA

No data presented.

6. HEALTH AND SAFETY

Health and Safety data sheet can be obtained from the supplier.

7. SUPPORTING DATA

WFRA Project No. 45691, WARRES No. 39630, WARRES No. 40266, WARRES No. 39631, WARRES No. 40267, WARRES No. 40360, WARRES No. 42485, WARRES No. 45437, WARRES No. 47873, WARRES No. 56878, WARRES No. 67757, TE5944, TE7130.

8. DISTRIBUTION OUTLETS

Resene Paints (Australia) Pty Ltd

Queensland

PO Box 785, ASHMORE CITY Qld 4214
Tel: +61 7 5594 9522 Fax: +61 7 5594 9093

7 Production Ave, ERNEST Qld 4214
Tel: 1800 738 383 Fax: 1800 064 960

New South Wales

11/49-63 Victoria Street, Smithfield NSW 2164
Tel: 1800 738 383 Fax: 1800 064 960

10 Bishopsgate Steet, Wickham NSW 2294
Tel: 1800 738 383 Fax: 1800 064 960

Western Australia

107 Forsyth Street, O'Connor WA 6163
Tel: 1800 738 383 Fax: 1800 064 960

9. INFORMATION ON CERTIFIRE

Certifire Australia is an independent, authoritative body providing a certification scheme for passive fire protection systems, suppliers and contractors. For further information contact Certifire Australia.

Certifire Australia is a partnership between the Commonwealth of Australia represented by Scientific Services Laboratory (SSL) and Warrington Fire Research, Australia (WFRA) taking direction from the Certifire Advisory Panel which has been constituted with balanced representation from all sectors of the industry.

NOTE: This system certificate should be read in conjunction with Certifire schedules [CA001](#), [CA002](#) and [CA033](#). The BCA requires that FRLs are based on tests performed in accordance with AS1530.4-1990 or a similar/more severe test. It should be recognised that a single test method will not provide a full assessment of the performance of a system or fire hazard under all fire conditions.

Reviewed by Resene 5 April 2005	Approved by Certifire Pty Ltd
Richard Wales General Manager	G J Evans Chief Executive Officer CERTIFIRE PTY LTD