YELLOW BOOK

Fire protection for structural steel in buildings

4th Edition

(Volume 2: Part 4: Sprayed Reactive Intumescent Coatings)

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Amendments to Vol 2 Part 4: Section 10:4

DATE	SECTION	AMENDMENT SUMMARY	SOURCE
27/06/07	10	List of Products amended	BP
13/07/07	ALL	Book divided into two volumes. Vol 1: Sections 1-8 & 10 and Vol 2: Section 9 Product Data Sheets	BP
13/07/07	10:4	COPON PYROTECH SPX and SPX90: Amendments to information and data sheets following assessment	Requested by E Wood
19/07/07	10:4	PROTEGAFIRE S168: Tables for 4 sided beams and columns, omitted from earlier edition, are now included	Requested by Protega
19/07/07	10:4	SIKA UNITHERM 38091: Removal of extraneous figures from RHS beams, 120min data	BP
27/07/07	10:4	FIRETEX FX7000: Note on 4 sided RHS/SHS beams made clearer	BP
20/11/07	ALL	Sections renumbered sequentially. 9 is now Bibliography and 10 the Product Data Sheets	BP
20/11/07	10	Product Sections renumbered and called Vol 2 Parts 1, 2, 3 and 4	BP
20/11/07	10.4	STEELGUARD FM549/550/560 Clarification to table headings for hollow sections all tables	BP
20/11/07	10.4	INTERCHAR 212 / 963 / 973 All new tables	BP
17/12/07	10.4	COPON products Pyrotech SPX and SPX90 New Manufacturer name now 3M E Wood and new address	BP
15/01/08	10.4	COPON products Pyrotech SPX and SPX90 Amendments to numbering system and product name	BP
18/02/08	10.4	NULLIFIRE S605 New tables	BP
18/02/08	10.4	NULLIFIRE S706 Amended tables added	BP
28/04/08	10.4	BROSTEEL Removed - company no longer in membership	BP
28/04/08	10.4	INTUSTEEL WB Removed - company no longer in membership	BP
28/04/08	10.4	SPRAYFILM WB3 Amendments to loading temps for universal columns (4 sided) for 30 and 90 mins	requested by Cafco
17/09/08	10.4	SCOTCHKOTE products: Now know as 3M SCOTCHKOTE SPX 710, 720 and 730 (new product)	BP
06/09/09	10.4	Section repaginated as Vol 2 Part 4	BP
19/01/10	10.4	Addition of footnote to three International Paint products	BP
30/03/10	Cover	New volume cover	NR

Note 1:
Amendments may only be inserted by ASFP Secretariat with approval of the ASFP Technical Officer.

SECTION 10:4
SPRAYED REACTIVE INTUMESCENT COATINGS

List of Product Data Sheets

3M™ SCOTCHKOTE™ SPX 710

3M™ SCOTCHKOTE™ SPX 720

3M™ SCOTCHKOTE™ SPX 730

FIRESTEEL 47-4

FIRESTEEL 47-4 EXT

FIRESTEEL CLASSIC 120

FIRETEX FX1000 / FX2000

FIRETEX FX3000 / FX4000

FIRETEX FX5000

FIRETEX FX5002

FIRETEX FX7000 / FX8000

FIRETEX M95

INTERCHAR 212

INTERCHAR 963

INTERCHAR 973

NULLIFIRE SYSTEM S605

NULLIFIRE SYSTEM S606

NULLIFIRE SYSTEM S706

NULLIFIRE SYSTEM S707-60

NULLIFIRE SYSTEM S707-120

PROTEGAFIRE S168

SIKA UNITHERM SAFIR

SIKA UNITHERM 38091

SPRAYFILM WB3

STEELGUARD FM549

STEELGUARD FM550

STEELGUARD FM560

STEELGUARD FM580

STEELGUARD FM585

STEELGUARD FM2570

STEELGUARD 551

STEELGUARD 561

This volume should be read in conjunction with Volume 1, available to download from www.asfp.org.uk

3M™ SCOTCHKOTE™ SPX 710

(Formerly Copon Pyrotech SPX)

1. Product description

Scotchkote SPX 710 waterborne thin film intumescent coating

2. Manufacturer

3M E WOOD
Standard Way, Northallerton, DL6 2XA
T: 01609 780170
F: 01609 780438 W: www.copon.co.uk

3. Availability

Supplied direct from the manufacturer

4. Nominal specific gravity

Nominal Density 1.37kg/ltr
Nominal Volume Solids (ASTM 2697) 66%

5. Wet coverage rate

Theoretical coverage 0.66m² per litre at 1mm dft by Airless Spray
Theoretical coverage 1.65m² per litre at 400 microns dft by Brush

6. Appearance

Smooth, white finish

7. On site use

Dry internal areas only. Covering a wide range of A/V (Hp/A) values in 1 coat, with multicoats required for the higher A/V (Hp/A) range.

8. Durability

Scotchkote SPX 710 is suitable for use unprotected in dry internal areas classified C1 in accordance with ISO 12944. Scotchkote SPX 710 is required for C2/C3 internal environments.

9. Performance in other BS tests

For details consult manufacturer.

10. Other applications

For sections with web openings please consult the manufacturer for data and product loadings

For details for other applications consult manufacturer.

a) Protection technique
Profile

b) Application technique
Airless spray or brush

c) Specification of system
Application – min temp of 7°C and Max humidity of 80%

- Blast clean to a minimum standard of SA2½ and apply an approved primer. Consult manufacturer for details of approved primers.
- Apply Scotchkote SPX 710 - See thickness table for required loading.
- Apply sealer coat where required

3M™ SCOTCHKOTE™ SPX 710 (formerly Copon Pyrotech SPX)

Universal Columns and Beams4-Sided Exposure								
Critical Temperature 550°C								
30 MINS			**60 MINS**			**90 MINS**		
A/V	dft µm	l/m²	A/V	dft µm	l/m²	A/V	dft µm	l/m²
50	183	0.277	30	187	0.283	75	600	0.909
55	186	0.282	35	196	0.297	80	650	0.985
60	188	0.285	40	206	0.312	85	700	1.061
65	190	0.288	45	215	0.326	90	750	1.136
70	192	0.291	50	224	0.339	95	800	1.212
75	195	0.295	55	234	0.355	100	850	1.288
80	197	0.298	60	243	0.368	105	900	1.364
85	199	0.302	65	252	0.382	110	1000	1.515
90	201	0.305	70	262	0.397	115	1100	1.667
95	204	0.309	75	271	0.411	120	1165	1.765
100	206	0.312	80	280	0.424	125	1230	1.864
105	208	0.315	85	290	0.439	130	1300	1.970
110	210	0.318	90	299	0.453			
115	213	0.323	95	308	0.467			
120	215	0.326	100	318	0.482			
125	217	0.329	105	327	0.495			
130	219	0.332	110	336	0.509			
135	222	0.336	115	353	0.535			
140	224	0.339	120	374	0.567			
145	226	0.342	125	395	0.598			
150	228	0.345	130	417	0.632			
155	231	0.350	135	438	0.664			
160	233	0.353	140	459	0.695			
165	235	0.356	145	481	0.729			
170	237	0.359	150	502	0.761			
175	240	0.364	155	523	0.792			
180	242	0.367	160	545	0.826			
185	244	0.370	165	566	0.858			
190	246	0.373	170	587	0.889			
195	249	0.377	175	608	0.921			
200	251	0.380	180	630	0.955			
205	253	0.383	185	651	0.986			
210	255	0.386	190	672	1.018			
215	257	0.389	195	694	1.052			
220	259	0.392	200	715	1.083			
225	262	0.397	205	736	1.115			
230	264	0.400	210	758	1.148			
235	266	0.403	215	779	1.180			
240	268	0.406	220	800	1.212			
245	271	0.411	225	821	1.244			
250	273	0.414	230	844	1.279			
255	275	0.417	235	866	1.312			
260	277	0.420	240	889	1.347			
265	280	0.424						
270	282	0.427						
275	284	0.430						
280	286	0.433						
285	289	0.438						
290	291	0.441						
295	293	0.444						
300	295	0.447						
305	298	0.452						
310	300	0.455						
315	302	0.458						
320	304	0.461						

This product is certified by a 3rd Party Certification body accredited to ISO Guide 65
The data provided complies with the principles of the ASFP/BCF/ICF industry Guidance and Sections 3 and 5 or 6 of this Yellow Book

3M™ SCOTCHKOTE™ SPX 710 (formerly Copon Pyrotech SPX)

Universal Beams 3-Sided Exposure								
Critical Temperature 620°C								
30 MINS			**60 MINS**			**90 MINS**		
A/V	dft µm	l/m²	A/V	dft µm	l/m²	A/V	dft µm	l/m²
0-310	300	0.455	0-100	300	0.455	0-75	425	0.644
			101-105	315	0.477	76-80	465	0.705
			106-110	330	0.500	81-85	500	0.758
			111-115	345	0.523	86-90	530	0.803
			116-120	360	0.545	91-95	560	0.848
			121-125	380	0.576	96-100	600	0.909
			126-130	400	0.606	101-105	650	0.985
			131-135	410	0.621	106-110	700	1.061
			136-140	425	0.644	111-115	750	1.136
			141-145	440	0.667	116-120	800	1.212
			146-150	455	0.689	121-125	830	1.258
			151-155	470	0.712	126-130	860	1.303
			156-160	485	0.735	131-135	900	1.364
			161-165	500	0.758	136-140	950	1.439
			166-170	510	0.773	141-145	1000	1.515
			171-175	525	0.795	146-150	1050	1.591
			176-180	540	0.818	151-155	1100	1.667
			181-185	555	0.841	156-160	1150	1.742
			186-190	570	0.864	161-165	1200	1.818
			191-195	585	0.886	166-170	1300	1.970
			196-200	600	0.909			
			201-205	615	0.932			
			206-210	630	0.955			
			211-215	645	0.977			
			216-220	660	1.000			
			221-225	680	1.030			
			226-230	700	1.061			
			231-235	710	1.076			
			236-240	720	1.091			
			241-245	730	1.106			
			246-250	740	1.121			
			251-255	755	1.144			
			256-260	770	1.167			
			261-265	785	1.189			
			266-270	800	1.212			
			271-275	810	1.227			
			276-280	820	1.242			
			281-285	830	1.256			
			286-290	840	1.273			
			291-295	855	1.295			
			296-300	870	1.318			
			301-305	885	1.341			
			306-310	900	1.364			
			311-315	905	1.371			
			316-320	915	1.386			
			321-325	930	1.409			
			326-330	940	1.424			
			331-335	950	1.439			
			336-340	960	1.455			

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3M™ SCOTCHKOTE™ SPX 720

(Formerly Copon Pyrotech SPX90)

11. Product description

Scotchkote SPX 720 waterborne thin film intumescent coating

12. Manufacturer

3M E WOOD
Standard Way, Northallerton, DL6 2XA
T: 01609 780170
F: 01609 780438 W: www.copon.co.uk

13. Availability

Supplied direct from the manufacturer

14. Nominal specific gravity

Nominal Density 1.37kg/ltr

Nominal Volume Solids (ASTM 2697) 68%

15. Wet coverage rate

Theoretical coverage 0.68m² per litre at 1mm dft by Airless Spray

Theoretical coverage 1.70m² per litre at 400 microns dft by Brush

16. Appearance

Smooth, white finish

17. On site use

Dry internal areas only. Covering a wide range of A/V (Hp/A) values in 1 coat, with multicoats required for the higher A/V (Hp/A) range.

18. Durability

Scotchkote SPX 720 is suitable for use unprotected in dry internal areas classified C1 in accordance with ISO 12944. Scotchkote SPX 700 Sealer is required for C2/C3 internal environments.

19. Performance in other BS tests

For details consult manufacturer.

20. Other applications

For details for other applications consult manufacturer.

a) Protection technique
Profile

b) Application technique
Airless spray or brush

c) Specification of system
Application – min temp of 7°C and max humidity of 80%

- Blast clean to a minimum standard of SA2½ and apply an approved primer. Consult manufacturer for details of approved primers.
- Apply Scotchkote SPX 720 - See thickness table for required loading.
- Apply sealer coat where required.

3M™ SCOTCHKOTE™ SPX 720 (formerly Copon Pyrotech SPX90)

3M™SCOTCHKOTE™SPX 720
(Formerly Copon Pyrotech SPX 90)
Universal Columns and Beams 4-Sided Exposure
Critical Temperature 550°C

60 MINUTES			90 MINUTES		
A/V	dft µm	l/m²	A/V	dft µm	l/m²
110	621	0.913	25	803	1.181
115	632	0.929	30	830	1.221
120	643	0.946	35	857	1.260
125	654	0.962	40	883	1.299
130	666	0.979	45	910	1.338
135	677	0.996	50	937	1.378
140	688	1.012	55	964	1.418
145	699	1.028	60	991	1.457
150	711	1.046	65	1017	1.496
155	722	1.062	70	1044	1.535
160	733	1.078	75	1071	1.575
165	744	1.094	80	1098	1.615
170	755	1.110	85	1125	1.654
175	767	1.128	90	1152	1.694
180	778	1.144	95	1178	1.732
185	789	1.160	100	1205	1.772
190	800	1.176	105	1232	1.812
195	812	1.194	110	1259	1.851
200	823	1.210	115	1286	1.891
205	834	1.226	120	1312	1.929
210	845	1.243	125	1339	1.969
215	857	1.260	130	1366	2.009
220	868	1.276	135	1393	2.049
225	879	1.293	140	1420	2.088
230	890	1.309	145	1446	2.126
235	901	1.325	150	1473	2.166
240	913	1.343	155	1500	2.206
245	924	1.359	160	1583	2.328
250	935	1.375	165	1667	2.451
255	946	1.391	170	1750	2.574
260	958	1.409	175	1833	2.696
265	969	1.425	180	1917	2.819
270	980	1.441	185	2000	2.941
275	1027	1.510	190	2037	2.996
280	1075	1.581	195	2074	3.050
285	1122	1.650	200	2111	3.104
290	1169	1.719	205	2147	3.157
295	1216	1.788	210	2184	3.212
300	1264	1.859	215	2221	3.266
305	1311	1.928	The loadings above are for use with columns and 4 sided beams		
310	1358	1.997			
315	1405	2.066			
320	1453	2.137	The loadings below are for use with columns only		
325	1500	2.206			
330	1547	2.275	220	2258	3.321
			225	2295	3.375
			230	2332	3.429
			235	2368	3.482
			240	2405	3.537
			245	2442	3.591
			250	2479	3.646
			255	2516	3.700
			260	2553	3.754
			265	2589	3.807
			270	2626	3.862
			275	2663	3.916
			280	2700	3.971
			285	2737	4.025
			290	2774	4.079
			295	2811	4.134
			300	2847	4.187

3M™SCOTCHKOTE™SPX 720
(Formerly Copon Pyrotech SPX 90)
Universal Beams 3-Sided Exposure
Critical Temperature 620°C

60 MINUTES			90 MINUTES		
A/V	dft µm	l/m²	A/V	dft µm	l/m²
185	621	0.913	35	614	0.903
190	632	0.929	40	632	0.929
195	643	0.946	45	650	0.956
200	655	0.963	50	669	0.984
205	666	0.979	55	687	1.010
210	678	0.997	60	705	1.037
215	689	1.013	65	724	1.065
220	700	1.029	70	742	1.091
225	712	1.047	75	760	1.118
230	723	1.063	80	779	1.146
235	735	1.081	85	797	1.172
240	746	1.097	90	815	1.199
245	757	1.113	95	833	1.225
250	769	1.131	100	852	1.253
255	780	1.147	105	870	1.279
260	792	1.165	110	888	1.306
265	803	1.181	115	907	1.334
270	816	1.200	120	925	1.360
275	828	1.218	125	943	1.387
280	841	1.237	130	962	1.415
285	854	1.256	135	980	1.441
290	866	1.274	140	1015	1.493
295	879	1.293	145	1049	1.543
300	892	1.312	150	1084	1.594
305	904	1.329	155	1119	1.646
310	917	1.349	160	1153	1.696
315	929	1.366	165	1188	1.747
320	942	1.385	170	1223	1.799
325	955	1.404	175	1257	1.849
330	967	1.422	180	1292	1.900
			185	1327	1.951
			190	1361	2.001
			195	1396	2.053
			200	1431	2.104
			205	1465	2.154
			210	1500	2.206
			215	1563	2.299
			220	1625	2.390
			225	1688	2.482
			230	1750	2.574
			235	1813	2.666
			240	1875	2.757
			245	1938	2.850
			250	2000	2.941
			255	2047	3.010
			260	2093	3.078
			265	2140	3.147
			270	2187	3.216

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3M™ SCOTCHKOTE™ SPX 720 (formerly Copon Pyrotech SPX90)

3M™SCOTCHKOTE™SPX 720(Formerly Copon Pyrotech SPX 90) Rectangular Hollow Columns 4-Sided Exposure Critical Temperature 520°C					
30 MINUTES			60 MINUTES		
A/V	dft µm	l/m²	A/V	dft µm	l/m²
175	552	0.812	55	618	0.909
180	613	0.901	60	784	1.153
185	674	0.991	65	949	1.396
190	735	1.081	70	1115	1.640
195	796	1.171	75	1280	1.882
200	857	1.260	80	1446	2.126
205	918	1.350	85	1611	2.369
210	979	1.440	90	1777	2.613
215	1041	1.531	95	1846	2.715
220	1102	1.621	100	1890	2.779
225	1163	1.710	105	1935	2.846
230	1224	1.800	110	1979	2.910
235	1285	1.890	115	2024	2.976
240	1346	1.979	120	2068	3.041
245	1407	2.069	125	2113	3.107
250	1468	2.159	130	2157	3.172
255	1529	2.249	135	2202	3.238
260	1590	2.338	140	2246	3.303
265	1651	2.428	145	2291	3.369
270	1712	2.518	150	2335	3.434
275	1773	2.607	155	2380	3.500
280	1822	2.679	160	2424	3.565
285	1851	2.722	165	2469	3.631
290	1880	2.765	170	2513	3.696
295	1909	2.807	175	2558	3.762
			180	2602	3.826
			185	2647	3.893
			190	2691	3.957
			195	2736	4.024
			200	2780	4.088
			205	2825	4.154
			210	2869	4.219
			215	2914	4.285

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3M™ SCOTCHKOTE™ SPX 730

1. Product description
Scotchkote SPX 730 waterborne thin film intumescent coating

2. Manufacturer
3M E WOOD
Standard Way, Northallerton, DL6 2XA
T: 01609 780170
F: 01609 780438 W: www.copon.co.uk

3. Availability
Supplied direct from the manufacturer

4. Nominal specific gravity
Nominal Density 1.34kg/ltr

Nominal Volume Solids (ASTM 2697) 65%

5. Wet coverage rate
Theoretical coverage 0.65m² per litre at 1mm dft by Airless Spray

Theoretical coverage 1.63m² per litre at 400 microns dft by Brush

6. Appearance
Smooth, white finish

7. On site use
Dry internal areas only. Covering a wide range of A/V (Hp/A) values in 1 coat, with multicoats required for the higher A/V (Hp/A) range.

8. Durability
Scotchkote SPX 730 is suitable for use unprotected in dry internal areas classified C1 in accordance with ISO 12944. Scotchkote SPX 700 Sealer is required for C2/C3 internal environments.

9. Performance in other BS tests
For details consult manufacturer.

10. Other applications
For details for other applications consult manufacturer.

a) Protection technique
Profile

b) Application technique
Airless spray or brush

c) Specification of system
Application – min temp of 7°C and max humidity of 80%

- Blast clean to a minimum standard of SA2½ and apply an approved primer. Consult manufacturer for details of approved primers.
- Apply Scotchkote SPX 730 - See thickness table for required loading.
- Apply sealer coat where required.

3M™ SCOTCHKOTE™ SPX 730

3M™ SCOTCHKOTE™ SPX 730
Universal Columns and Beams 4-Sided Exposure
Critical Temperature 550°C

90 MINUTES			120 MINUTES		
A/V	dft µm	l/m²	A/V	dft µm	l/m²
25	938	1.443	25	992	1.526
30	947	1.457	30	1072	1.649
35	1005	1.546	35	1153	1.774
40	1063	1.635	40	1234	1.898
45	1122	1.726	45	1315	2.023
50	1180	1.815	50	1396	2.148
55	1239	1.906	55	1477	2.272
60	1297	1.995	60	1557	2.395
65	1356	2.086	65	1638	2.520
70	1414	2.175	70	1718	2.643
75	1472	2.265	75	1800	2.769
80	1531	2.355	80	1881	2.894
85	1589	2.445	85	1962	3.018
90	1648	2.535	90	2063	3.174
95	1706	2.625	95	2195	3.377
100	1765	2.715	100	2327	3.580
105	1823	2.805	105	2460	3.785
110	1881	2.894	110	2592	3.988
115	1940	2.985	115	2742	4.218
120	1998	3.074	120	2856	4.394
125	2057	3.165	125	2988	4.597
130	2116	3.255	130	3121	4.802
135	2175	3.346	135	3246	4.994
140	2234	3.437	140	3362	5.172
145	2293	3.528	145	3477	5.349
150	2352	3.618	150	3592	5.526
155	2411	3.709	155	3708	5.705
160	2470	3.800	160	3823	5.882
165	2528	3.889	165	3938	6.058
170	2587	3.980	170	4054	6.237
175	2646	4.071	175	4169	6.414
180	2705	4.162	180	4285	6.592
185	2764	4.252	185	4400	6.769
190	2823	4.343	190	4465	6.869
195	2882	4.434	195	4529	6.968
200	2941	4.525	200	4594	7.068
205	3000	4.615	205	4658	7.166
210	3059	4.706	210	4723	7.266
215	3118	4.797	215	4787	7.365
220	3176	4.886	220	4852	7.465
225	3231	4.971	225	4916	7.563
230	3282	5.049	230	4981	7.663
235	3333	5.128	235	5045	7.762
240	3385	5.208	240	5110	7.862
245	3436	5.286	245	5174	7.960
250	3487	5.365	The loadings above are for use		
255	3538	5.443	with columns and 4 sided beams		
260	3590	5.523			
265	3641	5.602	The loadings below are for use		
270	3692	5.680	with columns only		
275	3744	5.760	250	5239	8.060
280	3795	5.838	255	5303	8.158
285	3846	5.917	260	5386	8.286
290	3897	5.995	265	5432	8.357
295	3949	6.075	270	5497	8.457
300	4000	6.154	275	5561	8.555
305	4051	6.232	280	5626	8.655
310	4103	6.312	285	5690	8.754
315	4154	6.391	290	5755	8.854
320	4205	6.469	295	5819	8.952
			300	5884	9.052
			305	5948	9.151
			310	6013	9.251
			315	6077	9.349
			320	6142	9.449

3M™ SCOTCHKOTE™ SPX 730
Universal Beams 3-Sided Exposure
Critical Temperature 620°C

90 MINUTES			120 MINUTES		
A/V	dft µm	l/m²	A/V	dft µm	l/m²
135	923	1.420	25	923	1.420
140	984	1.514	30	976	1.502
145	1061	1.632	35	1030	1.585
150	1138	1.751	40	1084	1.668
155	1216	1.871	45	1137	1.749
160	1293	1.989	50	1191	1.832
165	1370	2.108	55	1245	1.915
170	1448	2.228	60	1298	1.997
175	1525	2.346	65	1352	2.080
180	1603	2.466	70	1406	2.163
185	1680	2.585	75	1459	2.245
190	1757	2.703	80	1513	2.328
195	1835	2.823	85	1566	2.409
200	1912	2.942	90	1620	2.492
205	1989	3.060	95	1674	2.575
210	2067	3.180	100	1727	2.657
215	2144	3.298	105	1781	2.740
220	2221	3.417	110	1835	2.823
225	2299	3.537	115	1888	2.905
230	2376	3.655	120	1942	2.988
235	2454	3.775	125	1996	3.071
240	2522	3.880	130	2049	3.152
245	2576	3.963	135	2103	3.235
250	2631	4.048	140	2157	3.318
255	2685	4.131	145	2210	3.400
260	2739	4.214	150	2264	3.483
265	2794	4.298	155	2318	3.566
270	2848	4.382	160	2371	3.648
275	2903	4.466	165	2425	3.731
280	2957	4.549	170	2479	3.814
285	3012	4.634	175	2553	3.928
290	3066	4.717	180	2641	4.063
295	3120	4.800	185	2729	4.198
300	3175	4.885	190	2816	4.332
305	3229	4.968	195	2904	4.468
310	3284	5.052	200	2992	4.603
315	3338	5.135	205	3080	4.738
320	3393	5.220	210	3168	4.874
			215	3256	5.009
			220	3344	5.145
			225	3432	5.280
			230	3520	5.415
			235	3608	5.551
			240	3696	5.686
			245	3784	5.822
			250	3871	5.955
			255	3959	6.091
			260	4047	6.226
			265	4136	6.363
			270	4226	6.502
			275	4316	6.640
			280	4406	6.778
			285	4496	6.917
			290	4586	7.055
			295	4676	7.194
			300	4766	7.332
			305	4856	7.471
			310	4946	7.609
			315	5036	7.748
			320	5126	7.886

This product is certified by a 3rd Party Certification body accredited to ISO Guide 65
The data provided complies with the principles of the ASFP/BCF/ICF industry Guidance and Sections 3 and 5 or 6 of this Yellow Book

FIRESTEEL 47-4

1. Product description
Water based thin film intumescent coating for interior use.

2. Manufacturer
FIRETHERM INTUMESCENT AND INSULATION SUPPLIES LIMITED
Unit F, Acorn Industrial Park, Crayford Road, Crayford, Kent DA1 4FT
T: 01322 551010
F: 01322 552727 W: www.firetherm.com

3. Availability
Supplied direct from the manufacturers or local distributors overseas.

4. Nominal specific gravity & solids

	SG	**Vol/solids**
Basecoat:	1.38	72 ±3%

5. Wet coverage rates
Maximum application rates for Firesteel 47-4
per spray coat 1.4mm (1400 microns) wet / 1.008mm (1008 micron) dry
per brush coat 0.5mm (500 microns) wet / 0.36mm (360 microns) dry.

6. Appearance
A bright white, smooth, fibre free basecoat giving a good decorative appearance on its own.

A wide selection of water based and solvent based, single and two pack top seals available to BS4800, BS381C and RAL colours.

7. On site use
Internal use only.

8. Durability
Firesteel 47-4 provides a hard strong film that is highly resistance to impact and abrasion when fully cured.

9. Other applications
Suitable for use on a range of suitably primed substrates such as galvanised steel, cast iron and stainless steel. Consult manufacturer for details of other substrates.

a) Protection technique
Profile

b) Application technique
Airless spray, roller or brush

c) Specification of the System
"Apply Firesteel 47-4 onto suitably primed steelwork at a loading to achieve (30, 60 mins) fire protection strictly in accordance with Firetherm application instructions".

FIRESTEEL 47-4

Hp/A m^{-1}	Universal columns and beams (4 sided)		Universal beams (3 sided)		HS columns & beams (4-sided)	
	Steel Temperature 550° C		Steel Temperature 620° C		Steel Temperature 510° C	
	Total material thickness in mm for fire resistance periods (mins)					
	30	**60**	**30**	**60**	**30**	**60**
75		0.340				1.280
80		0.360				1.470
85		0.380				1.650
90		0.400				1.840
95		0.420				2.030
100		0.440		0.324		2.220
105		0.470		0.332		2.400
110				0.340		2.590
111		0.490				
115		0.500		0.347		2.710
120		0.520		0.355		2.810
125		0.530		0.363	0.400	2.900
130		0.550		0.370		3.000
135		0.560		0.378	0.480	3.100
140		0.580		0.388	0.510	3.140
145		0.590		0.394	0.540	3.180
150		0.610		0.401	0.570	3.220
155		0.620		0.409	0.600	3.260
160		0.630		0.417	0.630	3.300
165		0.650		0.424	0.670	3.340
170		0.660		0.432	0.700	3.390
175		0.680		0.440	0.730	3.430
180				0.448	0.750	3.470
182		0.700				
185		0.730		0.455	0.790	3.510
190		0.770		0.463	0.820	3.550
195		0.810		0.471	0.850	3.590
200	0.300	0.850		0.478	0.880	3.630
205	0.310	0.900		0.486	0.910	
208			0.290			
210	0.320	0.940		0.494	0.940	
215		0.980		0.501	0.960	
220	0.330	1.020		0.509	0.990	
225	0.340	1.070		0.517	1.020	
230	0.350	1.110	0.300	0.525	1.050	
235	0.360	1.150		0.532	1.080	
240	0.370	1.200	0.310	0.540	1.110	
245		1.240		0.566	1.140	
250	0.380	1.280		0.591	1.170	
255	0.390	1.320		0.617	1.190	
260	0.400	1.370	0.320	0.642	1.220	
265	0.410			0.668	1.250	
270	0.420		0.330	0.693	1.280	
275				0.719	1.330	
280	0.430			0.744	1.380	
285	0.440			0.770	1.440	
290	0.450			0.817	1.490	
295	0.460			0.864	1.540	
300	0.470		0.340	0.911	1.590	
305				0.959	1.640	
310	0.480			1.006	1.700	
313	0.490					
315				1.053	1.750	
320	0.500	2.100	0.350	1.100	1.800	
Note: 4 sided beam for 60 min protection is limited up to 230 Hp/A						

This product is certified by a 3rd Party Certification body accredited to ISO Guide 65
The data provided complies with the principles of the ASFP/BCF/ICF industry Guidance and Sections 3 and 5 or 6 of this Yellow Book

FIRESTEEL 47-4 EXT

1. Product description

Water based thin film intumescent coating

2. Manufacturer

FIRETHERM INTUMESCENT AND INSULATION SUPPLIES LIMITED
Unit F, Acorn Industrial Park, Crayford Road, Crayford, Kent DA1 4FT
T: 01322 551010
F: 01322 552727 W: www.firetherm.com

3. Availability

Supplied direct from the manufacturers or local distributors overseas

4. Nominal specific gravity & solids

	SG	V/solids
Basecoat:	1.388	72 ±3%
Top seals		
a) Hempathane Enamel 5510E – High Gloss:	1.3	54 ±1%
b) Hempathane Top Seal 5510E – Semi Gloss:	1.2	54 ±1%

5. Wet coverage rates

Maximum application rates for Firesteel 47-4EXT
per spray coat 1.4mm (1400 microns) wet / 1.008mm (1008 microns) dry
per brush coat 0.5mm (500 microns) wet / 0.360mm (360 microns) dry

Nominal application rate for Hempathane PU 5510E – High Gloss
per spray coat 0.075mm (75 microns) wet / 0.035mm (35 microns) dry

Nominal application rate for Hempathane PU 5521E – Semi Gloss
per spray coat 0.1mm (100 microns) wet / 0.050mm (50 microns) dry

6. Appearance

A bright white, smooth, fibre free basecoat giving a good decorative appearance on its own.

A wide selection of two pack Hempathane PU top seals available to BS4800, BS381C and RAL colours

7. On site use

Internal and external

8. Durability

Firesteel 47-4EXTprovides a hard strong film that is highly resistance to impact and abrasion when fully cured

9. Other applications

Suitable for use on a range of suitably primed substrates such as galvanised steel, cast iron and stainless steel. Consult manufacturer for details of other substrates

a) Protection technique
Profile

b) Application technique
Airless spray, roller or brush

c) Specification of the System
"Apply Firesteel 47-4EXT and Hempathane 5510E (high gloss) or 5521E (semi-gloss) onto suitably primed steelwork at a loading to achieve (30, 60 mins) fire protection strictly in accordance with Firetherm application instructions"

FIRESTEEL 47-4 EXT

Hp/A m^{-1}	Universal columns and beams (4 sided)		Universal beams (3 sided)		HS columns & beams (4-sided)	
	Steel Temperature 550° C		Steel Temperature 620° C		Steel Temperature 510° C	
	Total material thickness in mm for fire resistance periods (mins)					
	30	**60**	**30**	**60**	**30**	**60**
75		0.340				1.280
80		0.360				1.470
85		0.380				1.650
90		0.400				1.840
95		0.420				2.030
100		0.440		0.324		2.220
105		0.470		0.332		2.400
110				0.340		2.590
111		0.490				
115		0.500		0.347		2.710
120		0.520		0.355		2.810
125		0.530		0.363	0.400	2.900
130		0.550		0.370		3.000
135		0.560		0.378	0.480	3.100
140		0.580		0.388	0.510	3.140
145		0.590		0.394	0.540	3.180
150		0.610		0.401	0.570	3.220
155		0.620		0.409	0.600	3.260
160		0.630		0.417	0.630	3.300
165		0.650		0.424	0.670	3.340
170		0.660		0.432	0.700	3.390
175		0.680		0.440	0.730	3.430
180				0.448	0.750	3.470
182		0.700				
185		0.730		0.455	0.790	3.510
190		0.770		0.463	0.820	3.550
195		0.810		0.471	0.850	3.590
200	0.300	0.850		0.478	0.880	3.630
205	0.310	0.900		0.486	0.910	
208			0.290			
210	0.320	0.940		0.494	0.940	
215		0.980		0.501	0.960	
220	0.330	1.020		0.509	0.990	
225	0.340	1.070		0.517	1.020	
230	0.350	1.110	0.300	0.525	1.050	
235	0.360	1.150		0.532	1.080	
240	0.370	1.200	0.310	0.540	1.110	
245		1.240		0.566	1.140	
250	0.380	1.280		0.591	1.170	
255	0.390	1.320		0.617	1.190	
260	0.400	1.370	0.320	0.642	1.220	
265	0.410			0.668	1.250	
270	0.420		0.330	0.693	1.280	
275				0.719	1.330	
280	0.430			0.744	1.380	
285	0.440			0.770	1.440	
290	0.450			0.817	1.490	
295	0.460			0.864	1.540	
300	0.470		0.340	0.911	1.590	
305				0.959	1.640	
310	0.480			1.006	1.700	
313	0.490					
315				1.053	1.750	
320	0.500	2.100	0.350	1.100	1.800	
Note: 4 sided beam for 60 min protection is limited up to 230 Hp/A						

This product is certified by a 3rd Party Certification body accredited to ISO Guide 65
The data provided complies with the principles of the ASFP/BCF/ICF industry Guidance and Sections 3 and 5 or 6 of this Yellow Book

FIRESTEEL CLASSIC 120

1. Product description
Solvent based thin film intumescent coating

2. Manufacturer
FIRETHERM INTUMESCENT AND INSULATION SUPPLIES LIMITED
Unit F, Acorn Industrial Park, Crayford Road, Crayford, Kent DA1 4FT
T: 01322 551010
F: 01322 552727 W: www.firetherm.com

3. Availability
Supplied direct from the manufacturers or local distributors overseas

4. Nominal specific gravity & solids

	SG	Vol/solids
Basecoat:	1.28	63 ±3%
Top seals		
a) Hempathane Enamel 5510E – High Gloss:	1.3	54 ±1%
b) Hempathane Top Seal 5510E – Semi Gloss:	1.2	54 ±1%

5. Wet coverage rates
Maximum application rates for Firesteel Classic 120
per spray coat 1.2mm (1200 microns) wet / 0.768mm (768 microns) dry
per brush coat 0.5mm (500 microns) wet / 0.320mm (320 microns) dry

Nominal application rate for Hempathane PU 5510E – High Gloss
per spray coat 0.075mm (75 microns) wet / 0.035mm (35 microns) dry

Nominal application rate for Hempathane PU 5521E – Semi Gloss
per spray coat 0.100mm (100 microns) wet / 0.050mm (50 microns) dry

6. Appearance
A matt off-white, smooth, fibre free basecoat giving a good decorative appearance on its own. A wide selection of two pack Hempathane PU top seals available to BS4800, BS381C and RAL colours

7. On site use
Internal and external

8. Durability
Firesteel Classic 120 provides a hard strong film that is highly resistance to impact and abrasion when fully cured.

9. Other applications
Suitable for use on a range of suitably primed substrates such as galvanised steel, cast iron and stainless steel. Consult manufacturer for details of other substrates

a) Protection technique
Profile

b) Application technique
Airless spray, roller or brush

c) Specification of the System
"Apply Firesteel Classic 120 and Hempathane 5510E (high gloss) or 5521E (semi-gloss) onto suitably primed steelwork at a loading to achieve (90 , 120 mins) fire protection strictly in accordance with Firetherm application instructions"

FIRESTEEL CLASSIC 120

	Universal columns and beams (4 sided)		**Universal beams (3 sided)**	
Hp/A m^{-1}	Steel Temperature 550 C		Steel Temperature 620 C	
	Total material thickness in mm for fire resistance periods (mins)			
	90	**120**	**90**	**120**
25		1.000		1.000
31		1.100		
33				1.100
36		1.200		
38	0.550			
40				1.200
42		1.300		
43	0.650			
47	0.750			
48		1.400	0.550	1.300
50			0.600	
52	0.850			
54		1.500		
55			0.700	1.400
57	0.950			
59		1.600		
62	1.050			
63				1.500
65		1.700	0.800	
66	1.150			
70			0.900	1.600
71	1.250	1.800		
75			1.000	
76	1.350	1.900		
78				1.700
80	1.450		1.200	
82		2.000		
85	1.550		1.300	1.800
88		2.100		
90	1.650			
93				1.900
94		2.200		
96			1.400	
97	1.700			
99		2.300		
100				2.000
105		2.400		
108				2.100
110	1.800			
113		2.600		
115				2.200
122		2.800		
123	1.900			2.300
125			1.700	
130		3.000		2.400
137	2.000			
142				2.600
150	2.100	3.200		
154				2.800
155			1.800	
165				3.000

	Universal columns and beams (4 sided)			**Universal beams (3 sided)**	
Hp/A m^{-1}	Steel Temperature 550 C			Steel Temperature 620 C	
	Total material thickness in mm for fire resistance periods (mins)				
	90	**120**		**90**	**120**
168	2.200				
170		3.400			
177					3.200
185	2.300			2.000	
189	2.400				
190					3.400
198	2.600				
206	2.800				
215	3.000				
220				2.200	
228	3.200				
235				2.400	
240	3.400				
250				2.600	
268				2.800	
285				3.000	

The data provided complies with the principles of the ASFP/BCF/ICF industry Guidance and Sections 3 and 5 or 6 of this Yellow Book

FIRESTEEL CLASSIC 120

	HS as columns and beams (4 sided)			HS as beams (3 sided)	
	Steel Temperature 520° C			Steel Temperature 590° C	
Hp/A m^{-1}	Total material thickness in mm for fire resistance periods (mins)				
	90	**120**		**90**	**120**
25	1.300				
30	1.400				
35	1.500				
37		2.700			
40	1.600	2.720			
45	1.700	2.760			
47					
50	1.800	2.790			
55	1.900	2.830			
57					
60	2.000	2.860			
65	2.100	2.900			
66					
70	2.200	2.930			
75	2.300	2.970			
80	2.400	3.000			
85	2.500				
90	2.600				
115					2.570
120					2.630
125					2.700
130					2.770
135					2.830
140				2.340	2.900

	HS as columns and beams (4 sided)			HS as beams (3 sided)	
	Steel Temperature 520° C			Steel Temperature 590° C	
Hp/A m^{-1}	Total material thickness in mm for fire resistance periods (mins)				
	90	**120**		**90**	**120**
145				2.380	2.970
150				2.430	3.030
155				2.470	3.100
160				2.520	3.170
165				2.560	3.230
170				2.610	3.300
175				2.650	
180				2.700	
185				2.740	
190				2.780	
195				2.820	
200				2.860	
205				2.900	
210				2.940	
215				2.980	
220				3.020	
225				3.060	
230				3.100	
235				3.140	
240				3.180	
245				3.220	
250				3.260	
255				3.300	

The data provided complies with the principles of the ASFP/BCF/ICF industry Guidance and Sections 3 and 5 or 6 of this Yellow Book

FIRETEX FX1000 / FX2000

1. Product Description

Solvent based thin film intumescent coatings.

FX1000 for site application.

FX2000 for shop application

2. Manufacturer

LEIGHS PAINTS
Tower Works, Kestor Street, Bolton, BL2 2AL
T: 01204 521771
F: 01204 382115 W: www.leighspaints.co.uk

3. Availability

Supplied direct from the manufacturer

4. Nominal specific gravity

Firetex FX1000 : 1.35 kg/ltr

Practical volume solids : 75%

Firetex FX2000 : 1.36 kg/ltr

Practical volume solids : 75%

5. Wet coverage rate

Firetex FX1000 - maximum application rate by spray, 1333 microns wet giving 1000 microns dry

Firetex FX1000 - maximum application rate by brush, 400 microns wet giving 300 microns dry

Firetex FX2000 - maximum application rate by spray, 1333 microns wet giving 1000 microns dry

Firetex FX2000 is not suitable for brush application

6. Appearance

Smooth matt finish with a variety of topcoats available in a wide range of colours

7. On site use

Firetex FX1000 is for on site application for internal and limited external use

Firetex FX2000 is for off site application for internal and limited external use

8. Durability

Both can be left for up to 6 months without topcoat when subjected to normal weather conditions

9. Performance in other tests

Ongoing test program, consult manufacturer for specific requirements.
This product has also been tested in compliance with the ASFP/SCI test protocol for cellular beams (see Section 6.3 of this document).

10. Other applications

Consult manufacturer

a) Protection technique
Profile

b) Application technique
Firetex FX1000 - Spray or brush
Firetex FX2000 - Spray only

c) Specification of system
Consult manufacturer for specific details

FIRETEX FX1000 / FX2000

	I-Section beams 3-sided					I-Section columns and beams 4-sided	
Hp/A	Basecoat dft (mm) required for a fire resistance period of (mins)						
	Critical Temp 620°C					Critical Temp 550°C	
	30	**60**	**90**	**120**		**30**	**60**
30	0.200	0.200	0.330	0.845		0.200	0.200
40	0.200	0.200	0.330	0.845		0.200	0.200
50	0.200	0.200	0.330	0.845		0.200	0.235
60	0.200	0.210	0.460	1.015		0.200	0.275
70	0.200	0.240	0.600	1.185		0.200	0.320
80	0.200	0.270	0.745	1.355		0.200	0.360
90	0.200	0.300	0.890	1.525		0.200	0.405
100	0.200	0.325	1.030	1.695		0.200	0.450
110	0.200	0.355	1.175	1.865		0.200	0.490
120	0.200	0.385	1.315	2.030		0.200	0.535
130	0.200	0.415	1.460	2.200		0.200	0.580
140	0.200	0.440	1.600	2.370		0.200	0.620
150	0.200	0.475	1.745			0.200	0.665
160	0.200	0.515	1.885			0.200	0.710
170	0.200	0.550	2.030			0.200	0.750
180	0.200	0.585	2.175			0.200	0.790
190	0.200	0.625	2.315			0.215	0.825
200	0.200	0.660	2.460			0.230	0.865
210	0.200	0.695				0.245	0.905
220	0.200	0.735				0.260	0.940
230	0.200	0.770				0.275	0.980
240	0.205	0.805				0.290	1.020
250	0.220	0.840				0.305	1.060
260	0.235	0.875				0.320	1.095
270	0.250	0.910				0.335	1.135
280	0.265	0.945				0.350	1.175
290	0.280	0.985				0.365	1.210
300	0.300	1.020				0.380	1.250
310	0.315	1.055				0.390	1.290
320	0.330	1.090				0.405	1.330
330	0.345	1.125				0.420	1.365

This product is certified by a 3rd Party Certification body accredited to ISO Guide 65
The data provided complies with the principles of the ASFP/BCF/ICF industry Guidance and Sections 3 and 5 or 6 of this Yellow Book

FIRETEX FX1000 / FX2000

	Hollow Section beams 3-sided				Hollow Section RHS/SHS columns and beams 4-sided		CHS columns	
Hp/A	Basecoat dft (mm) required for a fire resistance period of (mins)							
	Critical Temp 620°C				Critical Temp 520°C		Critical Temp 520°C	
	30	**60**	**90**	**120**	**30**	**60**	**30**	**60**
30	0.300	0.300	0.330	0.845	0.460	0.460	0.440	0.440
40	0.300	0.300	0.330	0.845	0.460	0.460	0.440	0.440
50	0.300	0.300	0.330	0.845	0.460	0.460	0.440	0.495
60	0.300	0.300	0.460	1.015	0.460	0.460	0.440	0.610
70	0.300	0.300	0.600	1.185	0.465	0.595	0.440	0.725
80	0.300	0.300	0.745	1.355	0.465	0.740	0.440	0.840
90	0.300	0.310	0.890	1.525	0.465	0.890	0.440	0.950
100	0.300	0.410	1.030	1.695	0.465	1.035	0.440	1.065
110	0.300	0.505	1.175	1.865	0.465	1.185	0.440	1.180
120	0.300	0.600	1.315	2.030	0.465	1.330	0.485	1.285
130	0.300	0.695	1.460	2.200	0.465	1.480	0.530	1.340
140	0.300	0.795	1.600	2.370	0.465	1.630	0.580	1.400
150	0.300	0.890	1.745		0.465	1.745	0.625	1.460
160	0.300	0.985	1.885		0.495	1.860	0.675	1.520
170	0.300	1.085	2.030		0.555	1.975	0.720	1.580
180	0.300	1.180	2.175		0.620	2.090	0.770	1.640
190	0.300	1.275	2.315		0.680	2.205	0.815	1.700
200	0.300	1.370	2.460		0.745	2.320	0.865	1.845
210	0.300	1.470			0.805	2.435	0.910	2.010
220	0.325	1.565			0.865	2.545	0.960	2.175
230	0.350	1.660			0.930	2.660	1.005	2.340
240	0.375	1.760			0.990	2.775	1.055	2.505
250	0.405	1.855			1.055	2.890	1.100	2.675
260	0.430	1.950			1.115	3.005	1.150	2.840
270	0.455	2.045			1.175	3.120	1.195	3.005
280	0.480	2.145			1.240	3.235	1.240	3.170
290	0.505	2.245			1.300	3.350	1.280	3.335
300	0.530	2.360			1.365	3.465	1.305	3.500
310	0.555				1.425	3.580	1.325	3.670
320	0.580				1.490	3.690	1.350	3.835
330	0.610				1.550	3.805	1.375	4.000

Note : 4-sided RHS/SHS beam loadings can only be used up to Hp/A 210 for 60 mins

This product is certified by a 3rd Party Certification body accredited to ISO Guide 65
The data provided complies with the principles of the ASFP/BCF/ICF industry Guidance and Sections 3 and 5 or 6 of this Yellow Book

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FIRETEX FX3000 / FX4000

1. Product Description

Solvent based thin film intumescent coatings.

FX3000 for site application.

FX4000 for shop application

2. Manufacturer

LEIGHS PAINTS
Tower Works, Kestor Street, Bolton, BL2 2AL
T: 01204 521771
F: 01204 382115 W: www.leighspaints.co.uk

3. Availability

Supplied direct from the manufacturer

4. Nominal specific gravity

Firetex FX3000 : 1.32 kg/ltr

Practical volume solids : 72%

Firetex FX4000 : 1.33 kg/ltr

Practical volume solids : 75%

5. Wet coverage rate

Firetex FX3000 - maximum application rate by spray, 1333 microns wet giving 1000 microns dry

Firetex FX3000 - maximum application rate by brush, 400 microns wet giving 300 microns dry

Firetex FX4000 - maximum application rate by spray, 1333 microns wet giving 1000 microns dry

Firetex FX4000 is not suitable for brush application

6. Appearance

Smooth matt finish with a variety of topcoats available in a wide range of colours

7. On site use

Firetex FX3000 is for on site application for internal and limited external use

Firetex FX4000 is for off site application for internal and limited external use

8. Durability

Both can be left for up to 6 months without topcoat when subjected to normal weather conditions

9. Performance in other tests

Ongoing test program, consult manufacturer for specific requirements

10. Other applications

Consult manufacturer

a) Protection technique
Profile

b) Application technique
Firetex FX3000 - Spray or brush
Firetex FX4000 - Spray only

c) Specification of system
Consult manufacturer for specific details

FIRETEX FX3000 / FX4000

Hp/A	I-Section beams 3-sided			I-Section columns and beams 4-sided		
	Basecoat dft (mm) required for a fire resistance period of (mins)					
	Critical Temp 620°C			Critical Temp 550°C		
	30	**60**	**90**	**30**	**60**	**90**
30	0.350	0.350	0.350	0.350	0.350	0.370
40	0.350	0.350	0.550	0.350	0.350	0.480
50	0.350	0.410	0.590	0.350	0.380	0.580
60	0.350	0.535	0.630	0.350	0.440	0.690
70	0.350	0.555	0.670	0.350	0.510	0.790
80	0.350	0.570	0.710	0.350	0.570	0.900
90	0.350	0.590	0.800	0.350	0.630	1.000
100	0.350	0.610	0.885	0.350	0.700	1.110
110	0.350	0.630	0.975	0.350	0.760	1.210
120	0.375	0.650	1.085	0.370	0.820	1.320
130	0.490	0.665	1.195	0.390	0.890	1.430
140	0.530	0.685	1.310	0.420	0.950	1.530
150	0.535	0.705	1.425	0.450	1.010	1.640
160	0.545	0.770	1.535	0.480	1.070	1.740
170	0.555	0.865	1.650	0.510	1.140	1.850
180	0.560	0.965	1.750	0.540	1.200	2.070
190	0.570	1.030	1.855	0.560	1.260	2.310
200	0.575	1.090	1.955	0.590	1.330	2.560
210	0.585	1.150	2.060	0.620	1.390	2.810
220	0.590	1.205	2.160	0.650	1.450	3.060
230	0.600	1.265	2.260	0.680	1.520	3.300
240	0.610	1.325	2.365	0.710	1.580	3.550
250	0.615	1.385	2.465	0.730	1.640	3.800
260	0.625	1.440	2.565	0.760	1.710	
270	0.630	1.500	2.670	0.790	1.770	
280	0.640	1.560	2.770	0.820	1.830	
290	0.650	1.620	2.875	0.850	1.900	
300	0.655	1.770	2.975	0.880	1.980	
310	0.665	1.990	3.080	0.910	2.050	
320	0.670	2.205		0.930	2.130	
330	0.680	2.425		0.950	2.210	

Note : 4-sided beam loadings can only be used up to Hp/A 220 for 90 mins

This product is certified by a 3rd Party Certification body accredited to ISO Guide 65
The data provided complies with the principles of the ASFP/BCF/ICF industry Guidance and Sections 3 and 5 or 6 of this Yellow Book

FIRETEX FX3000 / FX4000

	Hollow Section beams 3-sided				Hollow Section RHS/SHS columns and beams 4-sided			CHS columns		
Hp/A	Basecoat dft (mm) required for a fire resistance period of (mins)									
	Critical Temp 620°C				Critical Temp 520°C			Critical Temp 520°C		
	30	**60**	**90**	**120**	**30**	**60**	**90**	**30**	**60**	**90**
30	0.320	0.320	0.520	1.210	0.600	1.260	1.260	0.430	0.430	0.880
40	0.320	0.320	0.520	1.210	0.600	1.260	1.260	0.430	0.430	0.880
50	0.320	0.320	0.580	1.210	0.600	1.260	1.260	0.430	0.430	1.185
60	0.320	0.320	0.690	1.210	0.600	1.260	1.355	0.430	0.545	1.435
70	0.320	0.390	0.800	1.210	0.600	1.260	1.820	0.430	0.665	1.650
80	0.320	0.460	0.920	1.390	0.600	1.260	2.280	0.430	0.780	1.865
90	0.320	0.540	1.030	1.740	0.600	1.260	2.740	0.430	0.895	2.080
100	0.320	0.620	1.150	2.100	0.600	1.260	3.200	0.430	1.015	2.300
110	0.320	0.690	1.260		0.600	1.260	3.660	0.430	1.130	2.515
120	0.320	0.770	1.380		0.600	1.310		0.430	1.245	2.730
130	0.320	0.850	1.540		0.620	1.490		0.450	1.345	2.945
140	0.320	0.920	1.690		0.660	1.660		0.495	1.420	3.160
150	0.320	1.000	1.850		0.700	1.830		0.535	1.500	3.380
160	0.325	1.080	2.010		0.740	2.000		0.580	1.580	3.610
170	0.360	1.150	2.160		0.785			0.625	1.655	3.840
180	0.390	1.230	2.320		0.825			0.665	1.735	
190	0.420	1.300			0.870			0.710	1.815	
200	0.460	1.390			0.910			0.750	1.890	
210	0.490	1.500			0.950			0.795	1.960	
220	0.520	1.610			0.990			0.835	2.030	
230	0.550	1.720			1.030			0.880	2.100	
240	0.590	1.830			1.075			0.920		
250	0.620	1.940			1.115			0.965		
260	0.650	2.040			1.160			1.005		
270	0.680	2.150			1.200			1.050		
280	0.720	2.260			1.240			1.090		
290	0.750				1.280			1.135		
300	0.780				1.320			1.175		
310	0.810				1.360			1.220		
320	0.850				1.400			1.260		
330	0.890				1.420			1.305		

Note : 4-sided RHS/SHS beam loadings can only be used up to Hp/A 80 for 90 mins

This product is certified by a 3rd Party Certification body accredited to ISO Guide 65
The data provided complies with the principles of the ASFP/BCF/ICF industry Guidance and Sections 3 and 5 or 6 of this Yellow Book

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FIRETEX FX5000

1. Product Description
Water based thin film intumescent coating for site application

2. Manufacturer
LEIGHS PAINTS
Tower Works, Kestor Street, Bolton, BL2 2AL
T: 01204 521771
F: 01204 382115 W: www.leighspaints.co.uk

3. Availability
Supplied direct from the manufacturer

4. Nominal specific gravity
Firetex FX5000 : 1.32 kg/ltr

Practical volume solids : 70%

5. Wet coverage rate
Firetex FX5000 - maximum application rate by spray, 1400 microns wet giving 1000 microns dry

Firetex FX5000 - maximum application rate by brush, 429 microns wet giving 300 microns dry

6. Appearance
Smooth matt finish with a variety of topcoats available in a wide range of colours

7. On site use
Firetex FX5000 is for on site application for internal use only

8. Durability
Can be left without topcoat in dry internal locations

9. Performance in other tests
Ongoing test program, consult manufacturer for specific requirements

10. Other applications
Consult manufacturer

a) Protection technique
Profile

b) Application technique
Firetex FX5000 - Spray or brush

c) Specification of system
Consult manufacturer for specific details

FIRETEX FX5000

	I-Section beams 3-sided			I-Section columns and beams 4-sided	
Hp/A	Basecoat dft (mm) required for a fire resistance period of (mins)				
	Critical Temp 620°C			Critical Temp 550°C	
	30	**60**		**30**	**60**
30	0.21	0.21		0.22	0.24
40	0.21	0.21		0.22	0.24
50	0.21	0.21		0.22	0.24
60	0.21	0.21		0.22	0.30
70	0.21	0.21		0.22	0.36
80	0.21	0.21		0.22	0.42
90	0.21	0.25		0.22	0.47
100	0.21	0.3		0.22	0.53
110	0.21	0.35		0.22	0.59
120	0.21	0.41		0.22	0.65
130	0.21	0.46		0.22	0.71
140	0.21	0.51		0.22	0.77
150	0.21	0.55		0.22	0.84
160	0.21	0.57		0.22	0.90
170	0.21	0.595		0.22	0.96
180	0.21	0.61		0.22	1.02
190	0.21	0.63		0.22	1.09
200	0.21	0.65		0.24	1.15
210	0.21	0.67		0.26	1.18
220	0.21	0.72		0.27	1.21
230	0.21	0.76		0.29	1.24
240	0.21	0.85		0.30	1.27
250	0.21	0.93		0.32	1.30
260	0.22	1.01		0.33	1.34
270	0.25	1.09		0.35	1.37
280	0.27	1.18		0.36	1.40
290	0.29			0.38	1.43
300	0.31			0.39	1.46
310	0.33			0.41	1.49
320	0.36			0.42	1.52

Note : 4 sided beam loadings can only be used for 60 mins up to Hp/A 220

This product is certified by a 3rd Party Certification body accredited to ISO Guide 65
The data provided complies with the principles of the ASFP/BCF/ICF industry Guidance and Sections 3 and 5 or 6 of this Yellow Book

FIRETEX FX5000

	Hollow Section beams 3-sided			Hollow Section RHS/SHS columns and beams 4-sided			CHS columns	
	Basecoat dft (mm) required for a fire resistance period of (mins)							
	Critical Temp 620°C			Critical Temp 525°C			Critical Temp 525°C	
Hp/A	**30**	**60**		**30**	**60**		**30**	**60**
30	0.43	0.43		0.40	0.72		0.40	0.72
40	0.43	0.43		0.40	0.72		0.40	0.72
50	0.43	0.43		0.40	0.72		0.40	0.72
60	0.43	0.43		0.40	0.72		0.40	0.72
70	0.43	0.43		0.40	0.72		0.40	0.72
80	0.43	0.43		0.40	0.72		0.40	0.72
90	0.43	0.43		0.40	0.78		0.40	0.78
100	0.43	0.48		0.40	0.91		0.40	0.91
110	0.43	0.53		0.40	1.04		0.40	1.04
120	0.43	0.59		0.40	1.10		0.40	1.10
130	0.43	0.64		0.40	1.17		0.40	1.17
140	0.43	0.69		0.40	1.23		0.40	1.23
150	0.43	0.75		0.40	1.30		0.40	1.30
160	0.43	0.79		0.40	1.36		0.40	1.36
170	0.43	0.82		0.40	1.43		0.40	1.43
180	0.43	0.85		0.40	1.50		0.40	1.50
190	0.43			0.42	1.56		0.42	1.56
200	0.43			0.44	1.63		0.44	1.63
210	0.45			0.47			0.47	
220	0.47			0.49			0.49	
230	0.49			0.51			0.51	
240	0.52			0.53			0.53	
250	0.54			0.56			0.56	
260	0.56			0.58			0.58	
270	0.58			0.60			0.60	
280	0.61			0.63			0.63	
290	0.63			0.65			0.65	
300	0.65			0.67			0.67	
310	0.67			0.70			0.70	
320	0.70			0.72			0.72	

Note : 4 sided RHS/SHS beam loadings can only be used for 60 mins up to Hp/A 90

This product is certified by a 3rd Party Certification body accredited to ISO Guide 65
The data provided complies with the principles of the ASFP/BCF/ICF industry Guidance and Sections 3 and 5 or 6 of this Yellow Book

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FIRETEX FX5002

1. Product Description
Water based thin film intumescent coating for site application

2. Manufacturer
LEIGHS PAINTS
Tower Works, Kestor Street, Bolton, BL2 2AL
T: 01204 521771
F: 01204 382115 W: www.leighspaints.co.uk

3. Availability
Supplied direct from the manufacturer

4. Nominal specific gravity
Firetex FX5002 : 1.33 kg/ltr

Practical volume solids : 70%

5. Wet coverage rate
Firetex FX5002 - maximum application rate by spray, 1400 microns wet giving 1000 microns dry

Firetex FX5002 - maximum application rate by brush, 429 microns wet giving 300 microns dry

6. Appearance
Smooth matt finish with a variety of topcoats available in a wide range of colours

7. On site use
Firetex FX5002 is for on site application for internal use only

8. Durability
Can be left without topcoat in dry internal locations

9. Performance in other tests
Ongoing test program, consult manufacturer for specific requirements.
This product has also been tested in compliance with the ASFP/SCI test protocol for cellular beams (see Section 6.3 of this document).

10. Other applications
Consult manufacturer

a) Protection technique
Profile

b) Application technique
Firetex FX5002 - Spray or brush

c) Specification of system
Consult manufacturer for specific details

FIRETEX FX5002

	I-Section beams 3-sided			I-Section columns and beams 4-sided	
	Basecoat dft (mm) required for a fire resistance period of (mins)				
	Critical Temp 620°C			Critical Temp 550°C	
Hp/A	**30**	**60**		**30**	**60**
30	0.200	0.200		0.210	0.210
40	0.200	0.200		0.210	0.230
50	0.200	0.215		0.210	0.255
60	0.200	0.230		0.210	0.280
70	0.200	0.245		0.210	0.300
80	0.200	0.260		0.210	0.325
90	0.200	0.275		0.210	0.345
100	0.200	0.290		0.210	0.370
110	0.200	0.305		0.210	0.395
120	0.200	0.320		0.210	0.415
130	0.200	0.335		0.210	0.440
140	0.200	0.350		0.210	0.460
150	0.200	0.365		0.210	0.485
160	0.200	0.380		0.210	0.510
170	0.200	0.395		0.210	0.530
180	0.200	0.410		0.210	0.555
190	0.200	0.425		0.210	0.575
200	0.200	0.440		0.210	0.600
210	0.200	0.460		0.215	0.620
220	0.200	0.480		0.230	0.645
230	0.200	0.500		0.240	0.715
240	0.200	0.525		0.255	0.795
250	0.200	0.545		0.265	0.875
260	0.200	0.565		0.280	0.960
270	0.200	0.590		0.290	1.035
280	0.200	0.610		0.305	1.115
290	0.200	0.635		0.315	1.195
300	0.200	0.675		0.330	1.275
310	0.200	0.785		0.340	
320	0.200	0.900		0.355	

Note : 4 sided beam loadings can only be used for 60 mins up to Hp/A 260

This product is certified by a 3rd Party Certification body accredited to ISO Guide 65
The data provided complies with the principles of the ASFP/BCF/ICF industry Guidance and Sections 3 and 5 or 6 of this Yellow Book

FIRETEX FX7000 / FX8000

1. Product Description

Solvent based thin film intumescent coatings.

FX7000 for site application.

FX8000 for shop application

2. Manufacturer

LEIGHS PAINTS
Tower Works, Kestor Street, Bolton, BL2 2AL
T: 01204 521771
F: 01204 382115 W: www.leighspaints.co.uk

3. Availability

Supplied direct from the manufacturer

4. Nominal specific gravity

Firetex FX7000 : 1.32 kg/ltr

Practical volume solids : 72%

Firetex FX8000 : 1.33 kg/ltr

Practical volume solids : 75%

5. Wet coverage rate

Firetex FX7000 - maximum application rate by spray, 1944 microns wet giving 1400 microns dry

Firetex FX7000 - maximum application rate by brush, 486 microns wet giving 350 microns dry

Firetex FX8000 - maximum application rate by spray, 1867 microns wet giving 1400 microns dry

Firetex FX8000 is not suitable for brush application

6. Appearance

Smooth matt finish with a variety of topcoats available in a wide range of colours

7. On site use

Firetex FX7000 is for on site application for internal and limited external use

Firetex FX8000 is for off site application for internal and limited external use

8. Durability

Both can be left for up to 12 months without topcoat when subjected to normal weather conditions

9. Performance in other tests

Ongoing test program, consult manufacturer for specific requirements.
This product has also been tested in compliance with the ASFP/SCI test protocol for cellular beams (see Section 6.3 of this document).

10. Other applications

Consult manufacturer

a) Protection technique
Profile

b) Application technique
Firetex FX7000 - Spray or brush
Firetex FX8000 - Spray only

c) Specification of system

Consult manufacturer for specific details

FIRETEX FX7000 / FX8000

	I-Section beams 3-sided					I-Section columns and beams 4-sided			
	Basecoat dft (mm) required for a fire resistance period of (mins)								
	Critical Temp 620°C					Critical Temp 550°C			
Hp/A	**30**	**60**	**90**	**120**		**30**	**60**	**90**	**120**
30	0.310	0.310	0.310	0.580		0.290	0.295	0.370	0.945
40	0.310	0.310	0.310	0.770		0.290	0.295	0.585	1.140
50	0.310	0.310	0.385	0.960		0.290	0.295	0.740	1.335
60	0.310	0.310	0.490	1.110		0.290	0.345	0.895	1.525
70	0.310	0.310	0.585	1.235		0.290	0.410	1.055	1.720
80	0.310	0.310	0.665	1.365		0.290	0.475	1.155	1.915
90	0.310	0.310	0.745	1.495		0.290	0.525	1.230	2.110
100	0.310	0.315	0.820	1.625		0.290	0.565	1.305	2.305
110	0.310	0.435	0.900	1.750		0.290	0.605	1.380	2.495
120	0.310	0.560	0.980	1.880		0.290	0.645	1.450	2.690
130	0.310	0.605	1.080	2.010		0.290	0.685	1.525	2.885
140	0.310	0.645	1.205	2.135		0.290	0.725	1.600	3.080
150	0.310	0.690	1.325	2.265		0.290	0.765	1.675	3.270
160	0.310	0.730	1.450	2.415		0.290	0.810	1.750	3.465
170	0.310	0.775	1.565	2.575		0.290	0.850	1.825	3.660
180	0.310	0.820	1.685	2.740		0.290	0.890	1.900	3.855
190	0.310	0.860	1.805	2.905		0.290	0.930	1.975	4.050
200	0.310	0.905	1.925	3.075		0.290	0.970	2.150	4.240
210	0.310	0.945	2.045	3.245		0.290	1.010	2.470	
220	0.310	0.990	2.160	3.410		0.290	1.050	2.795	
230	0.310	1.050	2.280	3.580		0.290	1.095	3.115	
240	0.310	1.160	2.410	3.750		0.290	1.165	3.435	
250	0.310	1.275	2.550	3.915		0.290	1.250	3.760	
260	0.310	1.385	2.685			0.315	1.330	4.080	
270	0.310	1.480	2.820			0.340	1.410		
280	0.310	1.545	2.960			0.365	1.490		
290	0.310	1.610	3.095			0.390	1.610		
300	0.310	1.670	3.230			0.415	1.790		
310	0.365	1.735	3.370			0.440	1.970		
320	0.435	1.800				0.465	2.145		
330	0.510	1.865				0.495	2.325		

Note : 4 sided beam loadings can only be used up to Hp/A 250 for 90 mins and Hp/A 180 for 120 mins.

This product is certified by a 3rd Party Certification body accredited to ISO Guide 65
The data provided complies with the principles of the ASFP/BCF/ICF industry Guidance and Sections 3 and 5 or 6 of this Yellow Book

FIRETEX FX7000 / FX8000

	Hollow Section beams 3-sided				Hollow Section RHS/SHS columns and beams 4-sided				CHS columns			
	Basecoat dft (mm) required for a fire resistance period of (mins)											
	Critical Temp 620°C				Critical Temp 520°C				Critical Temp 520°C			
Hp/A	**30**	**60**	**90**	**120**	**30**	**60**	**90**	**120**	**30**	**60**	**90**	**120**
30	0.285	0.285	0.285	2.000	0.535	1.265	1.400	2.640	0.505	1.365	2.360	2.100
40	0.285	0.285	0.285	2.000	0.535	1.265	1.400	2.640	0.505	1.365	2.360	2.100
50	0.285	0.285	0.285	2.000	0.535	1.265	1.400	2.850	0.505	1.365	2.360	2.620
60	0.285	0.285	0.470	2.000	0.535	1.265	1.780	3.380	0.505	1.365	2.360	
70	0.285	0.285	0.735	2.000	0.535	1.265	2.535	3.910	0.505	1.365	2.360	
80	0.285	0.285	0.995	2.000	0.535	1.265	3.290		0.505	1.365	2.360	
90	0.285	0.360	1.260	2.000	0.535	1.290	4.045		0.505	1.415	2.675	
100	0.285	0.515	1.525		0.535	1.575			0.505	1.515	3.020	
110	0.285	0.670	1.785		0.535	1.860			0.505	1.615	3.365	
120	0.285	0.820	2.030		0.535	2.150			0.525	1.715	3.715	
130	0.285	0.975			0.550	2.435			0.610	1.815	4.060	
140	0.285	1.125			0.630	2.720			0.695	1.915		
150	0.285	1.280			0.710	3.005			0.785	2.010		
160	0.285	1.430			0.790	3.290			0.870	2.110		
170	0.285	1.585			0.865	3.580			0.955	2.210		
180	0.285	1.740			0.945	3.865			1.045	2.310		
190	0.285	1.890			1.025	4.150			1.130	2.445		
200	0.285	2.055			1.100	4.435			1.215	2.615		
210	0.285				1.180				1.305	2.785		
220	0.350				1.260				1.380	2.955		
230	0.415				1.340				1.425	3.125		
240	0.480				1.410				1.470	3.295		
250	0.545				1.440				1.515	3.465		
260	0.610				1.475				1.560	3.635		
270	0.670				1.510				1.605	3.805		
280	0.735				1.540				1.655	3.975		
290	0.800				1.575				1.700	4.140		
300	0.865				1.610				1.745	4.290		
310	0.930				1.640				1.790			
320	0.995				1.675				1.835			
330	1.060								1.880			

Note:

4 sided RHS/SHS beam loadings can only be used up to Hp/A 110 for 60 mins, Hp/A 60 for 90 mins and not at all for 120 mins.

This product is certified by a 3rd Party Certification body accredited to ISO Guide 65
The data provided complies with the principles of the ASFP/BCF/ICF industry Guidance and Sections 3 and 5 or 6 of this Yellow Book

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FIRETEX M95

1. Product Description

Solvent based thin film epoxy intumescent coating for site or shop application

2. Manufacturer

LEIGHS PAINTS
Tower Works, Kestor Street, Bolton, BL2 2AL
T: 01204 521771
F: 01204 382115 W: www.leighspaints.co.uk

3. Availability

Supplied direct from the manufacturer

4. Nominal specific gravity

Firetex M95 : 1.26 kg/ltr

Practical volume solids : 85%

5. Wet coverage rate

Firetex M95 - maximum application rate by spray, 2350 microns wet giving 2000 microns dry

Firetex M95 is not suitable for brush application

6. Appearance

Smooth matt finish with a variety of topcoats available in a wide range of colours

7. On site use

Firetex M95 is for on site or in shop application for internal or external use

8. Durability

Can be left without topcoat in most locations but being an epoxy material, will chalk when exposed to UV light

9. Performance in other tests

Ongoing test program, consult manufacturer for specific requirements

10. Other applications

Consult manufacturer

a) Protection technique
Profile

b) Application technique
Firetex M95 - Spray only

c) Specification of system
Consult manufacturer for specific details

FIRETEX M95

	I-Section beams 3-sided				I-Section columns and beams 4-sided			
	Basecoat dft (mm) required for a fire resistance period of (mins)							
	Critical Temp 620°C				Critical Temp 550°C			
Hp/A	**30**	**60**	**90**	**120**	**30**	**60**	**90**	**120**
30	2.000	2.000	3	3	2.000	2.000	3.0	3.5
40	2.000	2.000	3	4	2.000	2.000	3.0	4.5
50	2.000	2.000	3	5	2.000	2.000	4.0	5.5
60	2.000	2.000	4	6	2.000	2.000	5.0	6.5
70	2.000	2.000	5	6	2.000	2.000	6.0	6.5
80	2.000	2.000	6	7	2.000	2.020	6.5	7.5
90	2.000	2.035	6	7	2.000	2.215	7.0	8.0
100	2.000	2.200	6	7	2.000	2.405	7.0	8.0
110	2.000	2.370	7	7	2.000	2.600	8.0	8.0
120	2.000	2.535	7	8	2.000	2.790	8.5	9.0
130	2.000	2.710	8	8	2.000	2.985	9.0	9.0
140	2.000	2.880	9	9	2.000	3.175	10.0	10.0
150	2.000	3.050	9	9	2.000	3.370	10.0	10.5
160	2.000	3.220	10	10	2.000	3.560	10.5	11.0
170	2.000	3.385	10	10	2.000	3.750	11.0	11.5
180	2.000	3.550	10	10	2.000	3.945	11.0	11.5
190	2.000	3.720	11	12	2.010	4.135	12.0	13.0
200	2.000	3.885	11	12	2.085	4.330	12.0	13.0
210	2.000	4.055	11	13	2.160	4.520	12.0	14.0
220	2.000	4.225	11	13	2.235	4.705	12.0	14.0
230	2.000	4.400	12	14	2.310	4.890	13.0	15.5
240	2.010	4.570	12	14	2.385	7.000	13.0	15.5
250	2.100	4.735	12	15	2.460	8.000	13.5	16.5
260	2.185	4.900	12	15	2.535	8.000	13.5	16.5
270	2.275	7.000	13	16	2.610	8.000	14.0	17.5
280	2.360	7.000	13	16	2.690	8.500	14.5	17.5
290	2.450	8.000	13	17	2.770	8.500	14.5	18.5
300	2.585	8.000	13	18	2.845	9.000	14.5	19.0
310	2.795	8.000	13	18	2.925	9.000	15.0	19.5
320	3.000	8.000	13	18	3.000	9.000	15.0	19.5
330	3.000	8.000	14	19	3.000	9.000	15.5	20.0

	Hollow Section RHS/SHS columns				CHS columns			
	Basecoat dft (mm) required for a fire resistance period of (mins)							
	Critical Temp 550°C				Critical Temp 550°C			
Hp/A	**30**	**60**	**90**	**120**	**30**	**60**	**90**	**120**
30	3.0	3.0	3.0	4.0	3.0	3.0	3.0	4.0
40	3.0	3.0	4.0	5.5	3.0	3.0	4.0	5.5
50	3.0	3.0	5.0	7.5	3.0	3.0	5.0	7.5
60	3.0	3.0	6.0	9.5	3.0	3.0	6.0	9.5
70	3.0	3.0	7.5	11.0	3.0	3.0	7.5	11.0
80	3.0	3.0	8.5	13.0	3.0	3.0	8.5	13.0
90	3.0	3.5	9.0	14.0	3.0	3.5	9.0	14.0
100	3.0	3.5	9.0	14.0	3.0	3.5	9.0	14.0
110	3.0	3.5	9.5	15.0	3.0	3.5	9.5	15.0
120	3.0	4.5	10.5	17.0	3.0	4.5	10.5	17.0
130	3.0	4.5	11.0	18.0	3.0	4.5	11.0	18.0
140	3.0	5.5	12.0	19.0	3.0	5.5	12.0	19.0
150	3.0	5.5	12.0	20.0	3.0	5.5	12.0	20.0
160	3.0	6.5	13.0		3.0	6.5	13.0	
170	3.0	7.0	13.0		3.0	7.0	13.0	
180	3.0	7.5	14.0		3.0	7.5	14.0	
190	3.0	8.0	14.0		3.0	8.0	14.0	
200	3.0	8.0	14.5		3.0	8.0	14.5	
210	3.0	9.0	15.0		3.0	9.0	15.0	
220	3.0	9.0	15.5		3.0	9.0	15.5	
230	3.0	10.0	15.5		3.0	10.0	15.5	
240	3.5	10.0	16.0		3.5	10.0	16.0	
250	3.5	11.0	16.5		3.5	11.0	16.5	
260	3.5	11.0	16.5		3.5	11.0	16.5	
270	4.0	12.0	17.5		4.0	12.0	17.5	
280	4.0	12.0	17.5		4.0	12.0	17.5	
290	4.5	12.5	17.5		4.5	12.5	17.5	
300	5.0	13.0	17.5		5.0	13.0	17.5	
310	5.0	13.5	17.5		5.0	13.5	17.5	
320	5.0	14.0	18.5		5.0	14.0	18.5	
330	5.5	14.5	18.5		5.5	14.5	18.5	

This product is certified by a 3rd Party Certification body accredited to ISO Guide 65
The data provided complies with the principles of the ASFP/BCF/ICF industry Guidance and Sections 3 and 5 or 6 of this Yellow Book

INTERCHAR 212

1. Product Description
A two pack epoxy intumescent coating with decorative top seal range meeting the most stringent VOC regulations World-wide. Can be used without a top-seal in aggressive exterior environments. Optimised for 90 and 120 mins fire duration periods.

2. Manufacturer
INTERNATIONAL PAINT LTD
Protective Coatings, Felling, Gateshead, NE10 0JY
T: 0191 4012376
F: 0191 4950676 W: http://www.international-pc.com

3. Availability
Supplied direct from the manufacturer or regional office

4. Nominal specific gravity
1.0 kg/l (Applied product density)

5. Wet coverage rate
Theoretical coverage rate -
0.5 m^2/litre at 2mm dry film thickness at stated volume solids

6. Appearance
When applied by airless spray a textured, sheen appearance is attained.
With suitable application procedures a bespoke architectural finish can be achieved
Full range of BS4800 / RAL shades available using International's range of approved top-seals

7. On site use
Can be used for both internal and external applications including C5 environments (ISO 12944).

8. Durability
Superior resistance to exterior ageing, impact and abrasion, after with respect to single pack products.

9. Performance in other tests
Manufactured in accordance with the requirements of ISO 9001
Blast tested to 4 bar over-pressure with no degradation of the film

10. Other applications
Suitable for the fire protection over a range of other substrates*

11. Protection technique
Profile

12. Application technique
Hot twin feed airless spray or modified single leg airless spray. Can be applied by trowel to small areas

13. Specification of system
Blast clean using steel grit to Sa 2½ to give 50-75 microns profile*
Apply an approved primer from International Paint or other approved source
Apply fire protection to the required thickness
Apply the selected decorative approved top-seal where required
*see International's working procedures and data sheet for further information

'This product has been tested and assessed in accordance with the ASFP Fire Test Protocol for steel beams with circular openings in the web. The manufacturer will provide the appropriate fire protection thickness. The Steel Construction Institute has produced product specific limiting temperatures for beams with circular openings based on that test data.'

INTERCHAR 212

Section factor Hp/A	I Section beams - 3 sided				I Section beams - 4 sided				I-Section columns - 4 sided			
	Critical Temp 620°C				Critical Temp 620°C				Critical Temp 550°C			
	30	**60**	**90**	**120**	**30**	**60**	**90**	**120**	**30**	**60**	**90**	**120**
5	1.20	1.20	1.73	1.63	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
10	1.20	1.20	1.73	1.63	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
15	1.20	1.20	1.73	1.63	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
20	1.20	1.20	1.73	1.63	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
25	1.20	1.20	1.73	1.63	2.00	2.00	2.00	2.28	2.00	2.00	2.00	2.28
30	1.20	1.20	1.73	1.63	2.00	2.00	2.00	2.56	2.00	2.00	2.00	2.56
35	1.20	1.20	1.73	1.63	2.00	2.00	2.19	2.85	2.00	2.00	2.19	2.85
40	1.20	1.20	1.73	1.63	2.00	2.00	2.38	3.14	2.00	2.00	2.38	3.14
45	1.20	1.20	1.73	1.63	2.00	2.00	2.57	3.39	2.00	2.00	2.57	3.39
50	1.20	1.20	1.73	1.63	2.00	2.00	2.76	3.64	2.00	2.00	2.76	3.64
55	1.20	1.20	1.73	1.63	2.00	2.00	2.92	3.84	2.00	2.00	2.92	3.84
60	1.20	1.20	1.73	1.63	2.00	2.00	3.09	4.08	2.00	2.00	3.09	4.08
65	1.20	1.20	1.73	1.82	2.00	2.00	3.23	4.27	2.00	2.00	3.23	4.27
70	1.20	1.20	1.73	2.01	2.00	2.00	3.37	4.46	2.00	2.00	3.37	4.46
75	1.20	1.20	1.73	2.20	2.00	2.00	3.50	4.63	2.00	2.00	3.50	4.63
80	1.20	1.20	1.73	2.39	2.00	2.00	3.63	4.79	2.00	2.00	3.63	4.79
85	1.20	1.20	1.73	2.58	2.00	2.00	3.74	4.94	2.00	2.00	3.74	4.94
90	1.20	1.20	1.73	2.77	2.00	2.00	3.85	5.08	2.00	2.00	3.85	5.08
95	1.20	1.20	1.73	2.96	2.00	2.02	3.95	5.22	2.00	2.02	3.95	5.22
100	1.20	1.20	1.73	3.14	2.00	2.04	4.05	5.35	2.00	2.04	4.05	5.35
105	1.20	1.20	1.73	3.33	2.00	2.08	4.14	5.47	2.00	2.08	4.14	5.47
110	1.20	1.20	1.73	3.52	2.00	2.13	4.23	5.59	2.00	2.13	4.23	5.59
115	1.20	1.20	1.73	3.71	2.00	2.17	4.31	5.70	2.00	2.17	4.31	5.70
120	1.20	1.20	1.85	3.90	2.00	2.21	4.39	5.80	2.00	2.21	4.39	5.80
125	1.20	1.20	1.97	3.99	2.00	2.24	4.47	5.90	2.00	2.24	4.47	5.90
130	1.20	1.20	2.08	4.08	2.00	2.28	4.54	5.99	2.00	2.28	4.54	5.99
135	1.20	1.20	2.20	4.17	2.00	2.31	4.60	6.08	2.00	2.31	4.60	6.08
140	1.20	1.20	2.32	4.26	2.00	2.35	4.67	6.17	2.00	2.35	4.67	6.17
145	1.20	1.20	2.44	4.35	2.00	2.38	4.73	6.26	2.00	2.38	4.73	6.26
150	1.20	1.20	2.55	4.44	2.00	2.41	4.80	6.34	2.00	2.41	4.80	6.34
155	1.20	1.20	2.67	4.53	2.00	2.44	4.85	6.41	2.00	2.44	4.85	6.41
160	1.20	1.20	2.78	4.62	2.00	2.47	4.91	6.48	2.00	2.47	4.91	6.48
165	1.20	1.20	2.87	4.71	2.00	2.49	4.96	6.55	2.00	2.49	4.96	6.55
170	1.20	1.20	2.96	4.80	2.00	2.52	5.02	6.62	2.00	2.52	5.02	6.62
175	1.20	1.20	3.03	4.90	2.00	2.54	5.06	6.69	2.00	2.54	5.06	6.69
180	1.20	1.20	3.09	4.99	2.00	2.57	5.11	6.75	2.00	2.57	5.11	6.75
185	1.20	1.27	3.15	5.08	2.00	2.59	5.15	6.81	2.00	2.59	5.15	6.81
190	1.20	1.34	3.21	5.17	2.00	2.61	5.20	6.87	2.00	2.61	5.20	6.87
195	1.20	1.41	3.28	5.26	2.00	2.63	5.24	6.93	2.00	2.63	5.24	6.93
200	1.20	1.48	3.34	5.35	2.00	2.66	5.29	6.98	2.00	2.66	5.29	6.98
205	1.20	1.56	3.40	5.44	2.00	2.68	5.32	7.03	2.00	2.68	5.32	7.03
210	1.20	1.63	3.46	5.53	2.00	2.70	5.36	7.08	2.00	2.70	5.36	7.08
215	1.20	1.70	3.53	5.62	2.00	2.71	5.40	7.13	2.00	2.71	5.40	7.13
220	1.20	1.77	3.59	5.71	2.00	2.73	5.44	7.18	2.00	2.73	5.44	7.18
225	1.20	1.84	3.65	5.80	2.00	2.75	5.47	7.23	2.00	2.75	5.47	7.23
230	1.20	1.91	3.71	5.89	2.00	2.77	5.51	7.27	2.00	2.77	5.51	7.27
235	1.20	1.99	3.78	5.98	2.00	2.78	5.54	7.31	2.00	2.78	5.54	7.31
240	1.20	2.06	3.84	6.07	2.00	2.80	5.57	7.35	2.00	2.80	5.57	7.35

Section factor Hp/A	I Section beams - 3 sided				I Section beams - 4 sided				I-Section columns - 4 sided			
	Critical Temp 620°C				Critical Temp 620°C				Critical Temp 550°C			
	30	**60**	**90**	**120**	**30**	**60**	**90**	**120**	**30**	**60**	**90**	**120**
245	1.20	2.13	3.92	6.16	2.00	2.81	5.60	7.39	2.00	2.81	5.60	7.39
250	1.20	2.20	4.00	6.25	2.00	2.83	5.63	7.43	2.00	2.83	5.63	7.43
255	1.20	2.23	4.10	6.34	2.00	2.84	5.66	7.47	2.00	2.84	5.66	7.47
260	1.20	2.25	4.19	6.43	2.00	2.86	5.69	7.51	2.00	2.86	5.69	7.51
265	1.20	2.28	4.29	6.52	2.00	2.87	5.71	7.55	2.00	2.87	5.71	7.55
270	1.20	2.30	4.38	6.61	2.00	2.89	5.74	7.58	2.00	2.89	5.74	7.58
275	1.20	2.33	4.48	6.71	2.00	2.90	5.76	7.62	2.00	2.90	5.76	7.62
280	1.20	2.36	4.57	6.80	2.00	2.91	5.79	7.65	2.00	2.91	5.79	7.65
285	1.20	2.39	4.67	6.89	2.00	2.92	5.81	7.68	2.00	2.92	5.81	7.68
290	1.20	2.41	4.76	6.98	2.00	2.93	5.84	-	2.00	2.93	5.84	7.71
295	1.20	2.43	4.86	7.07	2.00	2.94	5.86	-	2.00	2.94	5.86	7.74
300	1.20	2.45	4.95	7.16	2.00	2.96	5.88	-	2.00	2.96	5.88	7.77
305	1.20	2.48	5.05	7.25	2.00	-	-	-	-	-	-	-
310	1.20	2.51	5.14	7.34	2.00	-	-	-	-	-	-	-
315	1.20	2.54	5.24	7.43	2.00	-	-	-	-	-	-	-
320	1.20	2.56	5.33	7.52	2.00	-	-	-	-	-	-	-
325	1.20	2.59	5.43	7.61	2.00	-	-	-	-	-	-	-
330	1.20	2.61	5.52	7.70	2.00	-	-	-	-	-	-	-

This product is certified by a 3rd Party Certification body accredited to ISO Guide 65
The data provided complies with the principles of the ASFP/BCF/ICF industry Guidance and Sections 3 and 5 or 6 of this Yellow Book

Section factor Hp/A	CHS Columns				RHS/SHS Columns - 4 sided			
	Critical Temp 520ºC				Critical Temp 520ºC			
	30	**60**	**90**	**120**	**30**	**60**	**90**	**120**
10	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
15	2.00	2.00	2.00	2.25	2.00	2.00	2.00	2.25
20	2.00	2.00	2.00	2.49	2.00	2.00	2.00	2.49
25	2.00	2.00	2.20	2.95	2.00	2.00	2.20	2.95
30	2.00	2.00	2.40	3.41	2.00	2.00	2.40	3.41
35	2.00	2.00	2.67	3.80	2.00	2.00	2.67	3.80
40	2.00	2.00	2.94	4.18	2.00	2.00	2.94	4.18
45	2.00	2.00	3.18	4.51	2.00	2.00	3.18	4.51
50	2.00	2.00	3.41	4.84	2.00	2.00	3.41	4.84
55	2.00	2.00	3.61	5.12	2.00	2.00	3.61	5.12
60	2.00	2.00	3.81	5.40	2.00	2.00	3.81	5.40
65	2.00	2.00	3.98	5.64	2.00	2.00	3.98	5.64
70	2.00	2.01	4.15	5.88	2.00	2.01	4.15	5.88
75	2.00	2.08	4.30	6.10	2.00	2.08	4.30	6.10
80	2.00	2.15	4.45	6.32	2.00	2.15	4.45	6.32
85	2.00	2.22	4.59	6.51	2.00	2.22	4.59	6.51
90	2.00	2.28	4.72	6.69	2.00	2.28	4.72	6.69
95	2.00	2.34	4.84	6.86	2.00	2.34	4.84	6.86
100	2.00	2.40	4.96	7.03	2.00	2.40	4.96	7.03
105	2.00	2.45	5.07	7.19	2.00	2.45	5.07	7.19
110	2.00	2.50	5.17	7.34	2.00	2.50	5.17	7.34
115	2.00	2.55	5.27	7.48	2.00	2.55	5.27	7.48
120	2.00	2.59	5.37	7.61	2.00	2.59	5.37	7.61
125	2.00	2.64	5.46	7.74	2.00	2.64	5.46	7.74
130	2.00	2.68	5.54	7.86	2.00	2.68	5.54	7.86
135	2.00	2.72	5.62	7.98	2.00	2.72	5.62	7.98

Section factor Hp/A	**CHS Columns** Critical Temp 520ºC				**RHS/SHS Columns - 4 sided** Critical Temp 520ºC			
	30	**60**	**90**	**120**	**30**	**60**	**90**	**120**
140	2.00	2.76	5.70	8.09	2.00	2.76	5.70	8.09
145	2.00	2.80	5.78	8.20	2.00	2.80	5.78	8.20
150	2.00	2.83	5.85	8.30	2.00	2.83	5.85	8.30
155	2.00	2.86	5.92	8.39	2.00	2.86	5.92	8.39
160	2.00	2.89	5.98	8.48	2.00	2.89	5.98	8.48
165	2.00	2.93	6.05	8.57	2.00	2.93	6.05	8.57
170	2.00	2.96	6.11	8.66	2.00	2.96	6.11	8.66
175	2.00	2.99	6.17	8.74	2.00	2.99	6.17	8.74
180	2.00	3.01	6.22	8.82	2.00	3.01	6.22	8.82
185	2.00	3.04	6.28	8.90	2.00	3.04	6.28	8.90
190	2.00	3.06	6.33	8.97	2.00	3.06	6.33	8.97
195	2.00	3.09	6.38	9.04	2.00	3.09	6.38	9.04
200	2.00	3.11	6.42	9.11	2.00	3.11	6.42	9.11
205	2.00	3.13	6.47	9.18	2.00	3.13	6.47	9.18
210	2.00	3.15	6.51	9.24	2.00	3.15	6.51	9.24
215	2.00	3.17	6.56	9.30	2.00	3.17	6.56	9.30
220	2.00	3.19	6.60	9.36	2.00	3.19	6.60	9.36
225	2.00	3.21	6.64	9.42	2.00	3.21	6.64	9.42
230	2.00	3.23	6.68	9.48	2.00	3.23	6.68	9.48
235	2.00	3.25	6.72	9.53	2.00	3.25	6.72	9.53
240	2.00	3.27	6.76	9.58	2.00	3.27	6.76	9.58
245	2.00	3.29	6.80	9.63	2.00	3.29	6.80	9.63
250	2.00	3.30	6.83	9.68	2.00	3.30	6.83	9.68
255	2.00	3.32	6.86	9.73	2.00	3.32	6.86	9.73
260	2.00	3.33	6.89	9.78	2.00	3.33	6.89	9.78
265	2.00	3.35	6.92	9.82	2.00	3.35	6.92	9.82
270	2.00	3.36	6.95	9.86	2.00	3.36	6.95	9.86
275	2.00	3.38	6.99	9.91	2.00	3.38	6.99	9.91
280	2.00	3.39	7.02	9.95	2.00	3.39	7.02	9.95
285	2.00	3.41	7.05	9.99	2.00	3.41	7.05	9.99
290	2.00	3.42	7.07	10.03	2.00	3.42	7.07	10.03
295	2.00	3.44	7.10	10.07	2.00	3.44	7.10	10.07
300	2.00	3.45	7.12	10.10	2.00	3.45	7.12	10.10

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INTERCHAR 963

1. Product Description
Solvent borne thin film intumescent coating with decorative top seal range optimised for 60 minute fire duration

2. Manufacturer
INTERNATIONAL PAINT LTD
Protective Coatings, Felling, Gateshead, NE10 0JY
T: 0191 4012376
F: 0191 4950676 W: http://www.international-pc.com

3. Availability
Supplied direct from the manufacturer or regional office

4. Nominal specific gravity
1.37 kg/l (Practical Volume Solids 75% - measured in accordance with ISO 3233)

5. Wet coverage rate
Theoretical coverage rate -
1.0 m^2/litre at 750 microns dry film thickness at stated volume solids

6. Appearance
When applied by airless spray produces a flat architectural finish
Full range of BS4800 / RAL shades available using International's range of approved top-seals

7. On site use
Can be used for both internal and external applications*

8. Durability
Good resistance to impact and abrasion after suitable drying periods. Successfully fire tested utilising structural sections after accelerated and natural ageing.

9. Performance in other BS tests
Tested according BS476 part 7 – Class 1
Tested in accordance with NES711 and NES713
Manufactured in accordance with the requirements of ISO 9001

10. Other applications
Contact International for further information

11. Protection technique
Profile

12. Application technique
Airless spray, roller or brush

13. Specification of system
Blast clean using steel grit to Sa 2½ to give 50-75 microns profile*
Apply an approved primer from International Paint or other approved source
Apply fire protection to the required thickness
Apply approved top-seal where required
*see International's working procedures and data sheet for further information

'This product has been tested and assessed in accordance with the ASFP Fire Test Protocol for steel beams with circular openings in the web. The manufacturer will provide the appropriate fire protection thickness. The Steel Construction Institute has produced product specific limiting temperatures for beams with circular openings based on that test data.'

INTERCHAR 963

Section factor Hp/A	I-Section beams - 3 sided			I-Section beams - 4 sided			I-Section columns - 4 sided		
	Critical Temp 620ºC			Critical Temp 550ºC			Critical Temp 550ºC		
	30	**60**	**90**	**30**	**60**	**90**	**30**	**60**	**90**
25	0.28	0.28	0.58	0.30	0.30	0.56	0.30	0.30	0.56
30	0.28	0.28	0.58	0.30	0.30	0.56	0.30	0.30	0.56
35	0.28	0.28	0.58	0.30	0.30	0.59	0.30	0.30	0.59
40	0.28	0.28	0.58	0.30	0.30	0.62	0.30	0.30	0.62
45	0.28	0.29	0.58	0.30	0.30	0.65	0.30	0.30	0.65
50	0.28	0.29	0.58	0.30	0.30	0.67	0.30	0.30	0.67
55	0.28	0.29	0.58	0.30	0.30	0.70	0.30	0.30	0.70
60	0.28	0.29	0.58	0.30	0.30	0.74	0.30	0.30	0.74
65	0.28	0.29	0.63	0.30	0.30	0.78	0.30	0.30	0.78
70	0.28	0.29	0.67	0.30	0.33	0.82	0.30	0.33	0.82
75	0.28	0.30	0.72	0.30	0.35	0.86	0.30	0.35	0.86
80	0.28	0.30	0.76	0.30	0.38	0.90	0.30	0.38	0.90
85	0.28	0.30	0.81	0.30	0.40	0.94	0.30	0.40	0.94
90	0.28	0.31	0.85	0.30	0.42	0.98	0.30	0.42	0.98
95	0.28	0.32	0.89	0.30	0.44	1.01	0.30	0.44	1.01
100	0.28	0.33	0.94	0.30	0.46	1.05	0.30	0.46	1.05
105	0.28	0.35	0.98	0.30	0.48	1.09	0.30	0.48	1.09
110	0.28	0.36	1.03	0.30	0.50	1.13	0.30	0.50	1.13
115	0.28	0.38	1.07	0.30	0.52	1.17	0.30	0.52	1.17
120	0.28	0.39	1.12	0.30	0.53	1.21	0.30	0.53	1.21
125	0.28	0.41	1.16	0.30	0.54	1.25	0.30	0.54	1.25
130	0.28	0.42	1.21	0.30	0.55	1.29	0.30	0.55	1.29
135	0.28	0.43	1.25	0.30	0.56	1.33	0.30	0.56	1.33
140	0.28	0.45	1.30	0.30	0.57	1.37	0.30	0.57	1.37
145	0.28	0.46	1.34	0.30	0.58	-	0.30	0.58	1.41
150	0.28	0.48	1.38	0.30	0.59	-	0.30	0.59	1.45
155	0.28	0.49	-	0.30	0.60	-	0.30	0.60	1.49
160	0.28	0.50	-	0.30	0.61	-	0.30	0.61	1.53
165	0.28	0.52	-	0.30	0.62	-	0.30	0.62	-
170	0.28	0.53	-	0.30	0.63	-	0.30	0.63	-
175	0.28	0.55	-	0.30	0.64	-	0.30	0.64	-
180	0.28	0.56	-	0.30	0.65	-	0.30	0.65	-
185	0.28	0.58	-	0.30	0.66	-	0.30	0.66	-
190	0.28	0.59	-	0.30	0.67	-	0.30	0.67	-
195	0.28	0.60	-	0.30	0.68	-	0.30	0.68	-
200	0.28	0.62	-	0.30	0.69	-	0.30	0.69	-
205	0.28	0.63	-	0.30	0.73	-	0.30	0.73	-
210	0.28	0.65	-	0.30	0.88	-	0.30	0.88	-
215	0.28	0.66	-	0.30	1.04	-	0.30	1.04	-
220	0.28	0.67	-	0.30	1.19	-	0.30	1.19	-
225	0.28	0.71	-	0.30	1.26	-	0.30	1.26	-
230	0.28	0.75	-	0.30	1.29	-	0.30	1.29	-
235	0.28	0.80	-	0.30	1.31	-	0.30	1.31	-
240	0.28	0.84	-	0.30	1.33	-	0.30	1.33	-
245	0.28	0.89	-	0.30	1.35	-	0.30	1.35	-
250	0.28	0.93	-	0.30	1.37	-	0.30	1.37	-
255	0.28	0.97	-	0.30	-	-	0.30	1.40	-
260	0.28	1.02	-	0.30	-	-	0.30	1.42	-
265	0.28	1.06	-	0.30	-	-	0.30	1.44	-

Section factor Hp/A	I-Section beams - 3 sided			I-Section beams - 4 sided			I-Section columns - 4 sided		
	Critical Temp 620ºC			Critical Temp 550ºC			Critical Temp 550ºC		
	30	**60**	**90**	**30**	**60**	**90**	**30**	**60**	**90**
270	0.28	1.11	-	0.31	-	-	0.31	1.46	-
275	0.28	1.15	-	0.32	-	-	0.32	1.48	-
280	0.28	1.20	-	0.32	-	-	0.32	1.51	-
285	0.28	1.24	-	0.33	-	-	0.33	1.53	-
290	0.28	1.29	-	0.33	-	-	0.33	1.55	-
295	0.28	1.33	-	0.34	-	-	0.34	-	-
300	0.29	1.38	-	0.35	-	-	0.35	-	-
305	0.29	-	-	0.35	-	-	0.35	-	-
310	0.30	-	-	0.36	-	-	0.36	-	-
315	0.30	-	-	0.36	-	-	0.36	-	-
320	0.31	-	-	0.37	-	-	0.37	-	-

This product is certified by a 3rd Party Certification body accredited to ISO Guide 65
The data provided complies with the principles of the ASFP/BCF/ICF industry Guidance and Sections 3 and 5 or 6 of this Yellow Book

Section factor Hp/A	CHS Columns				RHS/SHS Columns - 4 sided				RHS/SHS Beams - 3 sided		
	Critical Temp 490ºC				Critical Temp 490ºC				Critical Temp 620ºC		
	30	**60**	**90**	**120**	**30**	**60**	**90**	**120**	**30**	**60**	**90**
25	0.51	0.51	1.28	3.15	0.52	0.50	1.30	3.15	0.32	0.36	-
30	0.51	0.51	1.28	3.15	0.52	0.50	1.30	3.15	0.32	0.36	-
35	0.51	0.51	1.28	3.15	0.52	0.50	1.30	3.15	0.32	0.36	-
40	0.51	0.51	1.28	3.15	0.52	0.50	1.30	3.15	0.32	0.36	-
45	0.51	0.51	1.28	3.15	0.52	0.50	1.30	3.15	0.32	0.36	-
50	0.51	0.51	1.28	3.15	0.52	0.50	1.30	3.15	0.32	0.36	-
55	0.51	0.51	1.48	3.15	0.52	0.50	1.47	3.15	0.32	0.36	-
60	0.51	0.59	1.68	3.15	0.52	0.50	1.63	3.15	0.32	0.36	-
65	0.51	0.66	1.91	3.15	0.52	0.50	1.80	3.15	0.32	0.36	-
70	0.51	0.74	2.19	3.15	0.52	0.57	2.07	3.15	0.32	0.36	-
75	0.51	0.82	2.36	3.15	0.52	0.65	2.16	3.15	0.32	0.36	-
80	0.51	0.90	2.49	3.15	0.52	0.73	2.30	3.15	0.32	0.36	-
85	0.51	0.98	2.62	3.15	0.52	0.81	2.45	3.15	0.32	0.36	-
90	0.51	1.05	2.76	3.15	0.52	0.89	2.61	3.15	0.32	0.36	-
95	0.51	1.08	2.89	3.33	0.52	0.96	2.77	3.33	0.32	0.36	-
100	0.51	1.12	3.02	3.50	0.52	1.04	2.93	3.50	0.32	0.36	-
105	0.51	1.15	3.15	3.68	0.52	1.10	3.09	3.68	0.32	0.36	-
110	0.51	1.19	3.29	-	0.52	1.15	3.25	-	0.32	0.37	-
115	0.51	1.22	3.42	-	0.52	1.21	3.41	-	0.32	0.40	-
120	0.52	1.26	3.53	-	0.52	1.26	3.66	-	0.32	0.44	-
125	0.53	1.30	3.62	-	0.52	1.32	4.04	-	0.32	0.47	-
130	0.54	1.33	3.70	-	0.52	1.37	4.43	-	0.32	0.50	-
135	0.54	1.37	3.79	-	0.52	1.43	4.70	-	0.32	0.53	-
140	0.55	1.42	3.87	-	0.52	1.48	4.81	-	0.32	0.57	-
145	0.56	1.46	3.96	-	0.52	1.54	4.91	-	0.32	0.60	-
150	0.57	1.50	4.04	-	0.52	1.60	5.02	-	0.32	0.63	-
155	0.58	1.54	4.13	-	0.52	1.66	5.12	-	0.32	0.66	-
160	0.59	1.59	4.21	-	0.54	1.72	5.23	-	0.32	0.70	-
165	0.60	1.63	4.29	-	0.55	2.00	5.33	-	0.32	0.76	-
170	0.61	1.67	4.38	-	0.57	2.28	5.44	-	0.32	0.83	-
175	0.62	1.71	4.46	-	0.58	2.55	5.54	-	0.32	0.90	-
180	0.63	2.24	4.55	-	0.59	2.83	-	-	0.32	0.97	-
185	0.64	2.76	4.63	-	0.61	3.11	-	-	0.32	1.00	-

Section factor Hp/A	CHS Columns				RHS/SHS Columns - 4 sided				RHS/SHS Beams - 3 sided		
	Critical Temp 490ºC				Critical Temp 490ºC				Critical Temp 620ºC		
	30	**60**	**90**	**120**	**30**	**60**	**90**	**120**	**30**	**60**	**90**
190	0.65	3.29	4.72	-	0.62	3.39	-	-	0.32	1.02	-
195	0.66	3.56	-	-	0.63	3.66	-	-	0.32	1.03	-
200	0.67	3.62	-	-	0.65	3.94	-	-	0.32	1.04	-
205	0.67	3.67	-	-	0.66	4.22	-	-	0.32	1.05	-
210	0.68	3.72	-	-	0.68	4.49	-	-	0.32	1.05	-
215	0.69	3.77	-	-	0.69	4.68	-	-	0.32	1.06	-
220	0.70	3.83	-	-	0.70	4.73	-	-	0.32	1.07	-
225	0.71	3.88	-	-	0.72	4.78	-	-	0.32	1.08	-
230	0.72	3.93	-	-	0.73	4.83	-	-	0.32	1.09	-
235	0.73	3.98	-	-	0.74	4.89	-	-	0.32	1.10	-
240	0.74	4.04	-	-	0.76	4.94	-	-	0.32	1.11	-
245	0.75	4.09	-	-	0.77	4.99	-	-	0.32	1.12	-
250	0.76	4.14	-	-	0.79	5.04	-	-	0.32	1.13	-
255	0.77	4.20	-	-	0.80	5.09	-	-	0.32	-	-
260	0.78	4.25	-	-	0.81	5.14	-	-	0.32	-	-
265	0.79	4.30	-	-	0.83	5.19	-	-	0.32	-	-
270	0.80	4.35	-	-	0.84	5.24	-	-	0.32	-	-
275	0.81	4.41	-	-	0.85	5.29	-	-	0.34	-	-
280	0.81	4.46	-	-	0.87	5.35	-	-	-	-	-
285	0.82	4.51	-	-	0.88	5.40	-	-	-	-	-
290	0.83	4.56	-	-	0.90	5.45	-	-	-	-	-
295	0.84	4.62	-	-	0.91	5.50	-	-	-	-	-
300	0.85	4.67	-	-	0.92	5.55	-	-	-	-	-

This product is certified by a 3rd Party Certification body accredited to ISO Guide 65
The data provided complies with the principles of the ASFP/BCF/ICF industry Guidance and Sections 3 and 5 or 6 of this Yellow Book

INTERCHAR 973

1. Product Description
Solvent borne thin film intumescent coating with decorative top seal range optimised for 90 minute fire duration

2. Manufacturer
INTERNATIONAL PAINT LTD
Protective Coatings, Felling, Gateshead, NE10 0JY
T: 0191 4696111
F: 0191 4383711 W: http://www.international-pc.com

3. Availability
Supplied direct from the manufacturer or regional office

4. Nominal specific gravity
1.34 kg/l (Practical Volume Solids 70% - measured in accordance with ISO 3233)

5. Wet coverage rate
Theoretical coverage rate -
0.93 m^2/litre at 750 microns dry film thickness at stated volume solids

6. Appearance
When applied by airless spray produces a flat architectural finish
Full range of BS4800 / RAL shades available using International's range of approved top-seals

7. On site use
Can be used for both internal and external applications*

8. Durability
Good resistance to impact and abrasion after suitable drying periods. Successfully fire tested utilising structural sections after accelerated and natural ageing.

9. Performance in other BS tests
Tested according BS476 part 7 – Class 1
Tested in accordance with NES711 and NES713
Manufactured in accordance with the requirements of ISO 9001

10. Other applications
Suitable for the fire protection over a range of other substrates*

11. Protection technique
Profile

12. Application technique
Airless spray, roller or brush

13. Specification of system
Blast clean using steel grit to Sa 2½ to give 50-75 microns profile*
Apply an approved primer from International Paint or other approved source
Apply fire protection to the required thickness
Apply the approved top-seal where required
*see International's working procedures and data sheet for further information

'This product has been tested and assessed in accordance with the ASFP Fire Test Protocol for steel beams with circular openings in the web. The manufacturer will provide the appropriate fire protection thickness. The Steel Construction Institute has produced product specific limiting temperatures for beams with circular openings based on that test data.'

INTERCHAR 973

Section factor Hp/A	I-Section beams - 3 sided				I-Section beams - 4 sided				I-Section columns - 4 sided			
	Critical Temp 620ºC				Critical Temp 550ºC				Critical Temp 550ºC			
	30	**60**	**90**	**120**	**30**	**60**	**90**	**120**	**30**	**60**	**90**	**120**
25	0.51	0.52	0.52	0.92	0.52	0.51	0.51	1.46	0.52	0.51	0.51	1.46
30	0.51	0.52	0.54	0.99	0.52	0.51	0.54	1.52	0.52	0.51	0.54	1.52
35	0.51	0.52	0.57	1.05	0.52	0.53	0.60	1.59	0.52	0.53	0.60	1.59
40	0.51	0.53	0.59	1.12	0.52	0.55	0.67	1.66	0.52	0.55	0.67	1.66
45	0.51	0.54	0.62	1.18	0.52	0.56	0.74	1.73	0.52	0.56	0.74	1.73
50	0.51	0.56	0.64	1.24	0.52	0.58	0.80	1.79	0.52	0.58	0.80	1.79
55	0.51	0.57	0.67	1.31	0.52	0.59	0.86	1.86	0.52	0.59	0.86	1.86
60	0.51	0.58	0.69	1.37	0.52	0.61	0.90	1.93	0.52	0.61	0.90	1.93
65	0.51	0.60	0.72	1.44	0.52	0.62	0.94	2.00	0.52	0.62	0.94	2.00
70	0.51	0.61	0.75	1.50	0.52	0.64	0.99	2.06	0.52	0.64	0.99	2.06
75	0.51	0.62	0.77	1.57	0.52	0.65	1.03	2.13	0.52	0.65	1.03	2.13
80	0.51	0.64	0.80	1.63	0.52	0.67	1.07	2.20	0.52	0.67	1.07	2.20
85	0.51	0.65	0.82	1.70	0.52	0.69	1.11	2.27	0.52	0.69	1.11	2.27
90	0.51	0.66	0.85	1.76	0.53	0.70	1.16	2.33	0.53	0.70	1.16	2.33
95	0.52	0.68	0.87	1.83	0.54	0.72	1.20	2.40	0.54	0.72	1.20	2.40
100	0.52	0.69	0.90	1.89	0.54	0.73	1.24	2.47	0.54	0.73	1.24	2.47
105	0.53	0.70	0.92	1.96	0.55	0.75	1.28	2.54	0.55	0.75	1.28	2.54
110	0.53	0.72	0.97	2.02	0.56	0.76	1.33	2.61	0.56	0.76	1.33	2.61
115	0.54	0.73	1.03	2.09	0.56	0.78	1.37	2.67	0.56	0.78	1.37	2.67
120	0.54	0.74	1.08	2.15	0.57	0.79	1.41	2.74	0.57	0.79	1.41	2.74
125	0.55	0.76	1.13	2.22	0.57	0.81	1.45	2.81	0.57	0.81	1.45	2.81
130	0.55	0.77	1.19	2.28	0.58	0.82	1.50	2.88	0.58	0.82	1.50	2.88
135	0.56	0.78	1.24	2.35	0.59	0.84	1.54	2.94	0.59	0.84	1.54	2.94
140	0.57	0.79	1.29	2.41	0.59	0.87	1.58	3.01	0.59	0.87	1.58	3.01
145	0.57	0.81	1.35	2.48	0.60	0.91	1.62	3.08	0.60	0.91	1.62	3.08
150	0.58	0.82	1.40	2.54	0.61	0.94	1.67	3.15	0.61	0.94	1.67	3.15
155	0.58	0.83	1.45	2.61	0.61	0.97	1.71	3.22	0.61	0.97	1.71	3.22
160	0.59	0.85	1.51	2.71	0.62	1.00	1.75	3.33	0.62	1.00	1.75	3.33
165	0.59	0.86	1.56	2.82	0.63	1.03	1.79	3.44	0.63	1.03	1.79	3.44
170	0.60	0.88	1.61	2.94	0.63	1.07	1.84	3.55	0.63	1.07	1.84	3.55
175	0.60	0.91	1.67	3.05	0.64	1.10	1.88	3.66	0.64	1.10	1.88	3.66
180	0.61	0.93	1.72	3.16	0.64	1.13	1.92	3.77	0.64	1.13	1.92	3.77
185	0.61	0.96	1.76	3.28	0.65	1.16	1.96	3.87	0.65	1.16	1.96	3.87
190	0.62	0.98	1.79	3.39	0.66	1.20	2.01	3.98	0.66	1.20	2.01	3.98
195	0.62	1.01	1.82	3.50	0.66	1.23	2.05	4.09	0.66	1.23	2.05	4.09
200	0.63	1.03	1.85	3.62	0.67	1.26	2.09	-	0.67	1.26	2.09	4.20
205	0.63	1.06	1.89	3.73	0.68	1.29	2.30	-	0.68	1.29	2.30	4.36
210	0.64	1.08	1.92	3.84	0.68	1.33	2.51	-	0.68	1.33	2.51	4.52
215	0.65	1.10	1.95	3.96	0.69	1.36	2.71	-	0.69	1.36	2.71	4.68
220	0.65	1.13	2.00	4.07	0.70	1.39	2.92	-	0.70	1.39	2.92	4.84
225	0.66	1.15	2.07	4.18	0.70	1.42	3.13	-	0.70	1.42	3.13	5.00
230	0.66	1.18	2.13	-	0.71	1.45	3.26	-	0.71	1.45	3.26	5.16
235	0.67	1.20	2.20	-	0.72	1.49	3.34	-	0.72	1.49	3.34	5.32
240	0.67	1.23	2.26	-	0.72	1.52	3.43	-	0.72	1.52	3.43	5.48
245	0.68	1.25	2.33	-	0.73	1.55	3.51	-	0.73	1.55	3.51	5.64
250	0.68	1.28	2.40	-	0.73	1.58	3.60	-	0.73	1.58	3.60	5.80
255	0.69	1.30	2.46	-	0.74	1.62	3.68	-	0.74	1.62	3.68	5.96
260	0.69	1.32	2.53	-	0.75	1.65	3.76	-	0.75	1.65	3.76	6.12
265	0.70	1.35	2.59	-	0.75	1.68	3.85	-	0.75	1.68	3.85	6.28

Section factor Hp/A	I-Section beams - 3 sided				I-Section beams - 4 sided				I-Section columns - 4 sided			
	Critical Temp 620ºC				Critical Temp 550ºC				Critical Temp 550ºC			
	30	**60**	**90**	**120**	**30**	**60**	**90**	**120**	**30**	**60**	**90**	**120**
270	0.70	1.37	2.68	-	0.76	1.71	3.93	-	0.76	1.71	3.93	6.44
275	0.71	1.40	2.79	-	0.77	1.75	4.02	-	0.77	1.75	4.02	-
280	0.71	1.42	2.89	-	0.77	1.78	4.10	-	0.77	1.78	4.10	-
285	0.72	1.45	3.00	-	0.78	1.81	4.18	-	0.78	1.81	4.18	-
290	0.73	1.47	3.10	-	0.79	1.84	-	-	0.79	1.84	4.31	-
295	0.73	1.50	3.21	-	0.79	1.87	-	-	0.79	1.87	4.44	-
300	0.74	1.52	3.31	-	0.80	1.91	-	-	0.80	1.91	4.58	-
305	0.74	1.54	3.42	-	0.80	1.94	-	-	0.80	1.94	4.72	-
310	0.75	1.57	3.52	-	0.81	1.97	-	-	0.81	1.97	4.85	-
315	0.75	1.59	3.62	-	0.82	2.00	-	-	0.82	2.00	4.99	-
320	0.76	1.62	3.73	-	0.82	2.04	-	-	0.82	2.04	5.12	-
325	-	-	3.83	-	-	-	-	-	-	-	5.26	-
330	-	-	3.94	-	-	-	-	-	-	-	5.39	-

This product is certified by a 3rd Party Certification body accredited to ISO Guide 65
The data provided complies with the principles of the ASFP/BCF/ICF industry Guidance and Sections 3 and 5 or 6 of this Yellow Book

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NULLIFIRE SYSTEM S605

1. Product description
Solvent based thin film intumescent coating with decorative topseal range

2. Manufacturer
NULLIFIRE LIMITED
Torrington Avenue Coventry CV4 9TJ
T: 02476 855000
F: 02476 469547 W: www.nullifire.com

3. Availability
UK Mainland: immediate supply direct from Nullifire Ltd
Overseas: Contact Nullifire UK for local supplier information

4. Nominal density (g/ml)
Basecoat: 1.33 to 1.36 (Practical Volume Solids 68%)

5. Wet Coverage rates
Coverage = 0.73 l/m² at 0.5 mm d.f.t.
Maximum basecoat wet application rates/coat:

Airless spray	1500 g/m²	1.1 mm w.f.t.	0.74 mm d.f.t.
Brush	750 g/m²	0.55 mm w.f.t.	0.37 mm d.f.t.

Relationship between wet application rate and dry film thickness (d.f.t.):
g/m² = d.f.t. x 2015
w.f.t. = d.f.t. x 1.47

6. Appearance
Smooth fibre free basecoat
Full range of BS4800 / RAL colour decorative topseals available

7. Scope of use
Suitable for external use with an approved topseal.
May be used in internal locations without a topseal.
For semi-external locations a topseal is required but it can be left up to 12 months without top sealing.
Can be used on steelwork immediately after erection and left up to 12 months without top sealing.
A quick drying off-site grade is also available on request.

8. Durability
Good resistance to impact and abrasion. Successfully fire tested on structural sections after extensive accelerated and natural ageing.

9. Performance in other tests
Manufactured in accordance with the requirements of ISO 9001:2000 (certificate no. FM01764)

10. Other applications
Suitable for the fire protection of a range of other materials including galvanised steel and cast iron.

a) Protection technique
Profile

b) Application technique
Airless spray, roller or brush

c) Specification of system
Blast clean to SA 2½ (preferred) or wire brush and degrease mill scaled steel
Apply Nullifire or other compatible primer – refer to Nullifire Technical Department
Apply basecoat to required thickness (see table)
Apply selected decorative topseal

NULLIFIRE SYSTEM S605

Universal Beams 3 sided exposure (supporting slab)				
Critical Temperatures: 620° C for 30 to 90 mins / 592° C for 120 mins				
Hp/A	D.f.t. for basecoat thickness only (mm)			
m^{-1}	**30 min**	**60 min**	**90 min**	**120**
20	0.153	0.153	0.797	1.904
30	0.153	0.153	0.797	1.904
40	0.153	0.153	0.838	1.904
50	0.153	0.153	0.918	1.904
60	0.153	0.153	0.998	1.904
70	0.153	0.153	1.079	1.904
80	0.153	0.153	1.159	1.904
90	0.153	0.153	1.239	1.904
100	0.153	0.153	1.320	1.904
110	0.153	0.153	1.400	1.904
120	0.153	0.153	1.480	2.216
130	0.153	0.153	1.561	2.838
140	0.153	0.153	1.641	3.460
150	0.153	0.214	1.721	3.943
160	0.172	0.295	1.802	4.427
170	0.193	0.377	1.882	4.910
180	0.213	0.459	1.962	5.393
190	0.234	0.541	2.043	-
200	0.255	0.623	2.123	-
210	0.275	0.705	2.203	-
220	0.296	0.786	2.284	-
230	0.317	0.868	2.439	-
240	0.337	0.950	2.768	-
250	0.358	1.046	3.098	-
260	0.379	1.142	3.427	-
270	0.399	1.238	3.756	-
280	0.420	1.333	-	-
290	0.440	1.429	-	-
300	0.461	1.525	-	-
310	0.482	1.621	-	-
320	0.502	1.717	-	-

Universal Columns - 4 sided exposure Universal Beams - 4 sided exposure (without slab)				
Critical Temperature of 544° C				
Hp/A	D.f.t. for basecoat thickness only (mm)			
m^{-1}	**30 min**	**60 min**	**90 min**	**120**
20	0.173	0.187	1.180	1.371
30	0.173	0.187	1.239	1.552
40	0.173	0.187	1.298	1.733
50	0.173	0.187	1.357	1.915
60	0.173	0.297	1.415	2.096
70	0.173	0.407	1.474	2.277
80	0.173	0.517	1.533	2.528
90	0.173	0.627	1.592	2.826
100	0.173	0.679	1.651	3.123
110	0.173	0.705	1.710	3.420
120	0.225	0.723	1.852	3.650
130	0.278	0.759	1.994	3.873
140	0.330	0.786	2.137	4.096
150	0.382	0.812	2.279	4.319
160	0.435	0.839	2.442	4.633
170	0.487	0.866	2.625	5.039
180	0.540	0.901	2.808	5.445
190	0.592	1.006	2.992	5.851
200	0.644	1.111	3.175	6.256
210	0.666	1.216	3.358	6.662
220	0.674	1.321	3.692	7.068
230	0.683	1.426	4.176	-
240	0.691	1.531	4.660	-
250	0.699	1.636	5.144	-
260	0.708	1.741	5.629	-
270	0.716	1.846	6.113	-
280	0.725	1.951	6.597	-
290	0.733	2.056	7.081	-
300	0.741	2.161	-	-
310	0.750	2.266	-	-
320	0.758	2.374	-	-

Critical Temperatures: Loadings for alternative critical temperatures from 350 to 750°C are available on request

The data provided complies with the principles of the ASFP/BCF/ICF industry Guidance and Sections 3 and 5 or 6 of this Yellow Book

NULLIFIRE SYSTEM S605

Rectangular Hollow Section Columns 4 sided exposure Critical Temperature of 530° C				
Hp/A m^{-1}	D.f.t. for basecoat thickness only (mm)			
	30 min	**60 min**	**90 min**	**120**
33	0.95	0.95	1.35	2.60
40	0.95	0.95	1.35	-
60	0.95	1.00	2.00	-
70	0.95	1.10	2.65	-
80	0.95	1.20	-	-
100	0.95	1.45	-	-
120	0.95	1.65	-	-
140	1.00	1.90	-	-
160	1.10	2.10	-	-
180	1.20	2.75	-	-
200	1.30	2.95	-	-
220	1.40	3.15	-	-
240	1.55	-	-	-
260	1.65	-	-	-
280	1.75	-	-	-
300	1.85	-	-	-
320	1.95	-	-	-

Circular Hollow Section Columns Full exposure Critical Temperature of 500° C				
Hp/A m^{-1}	D.f.t. for basecoat thickness only (mm)			
	30 min	**60 min**	**90 min**	**120**
29	0.95	0.95	1.65	2.60
40	0.95	0.95	1.65	-
60	0.95	1.10	2.25	-
70	0.95	1.25	2.50	-
80	0.95	1.40	-	-
100	0.95	1.70	-	-
120	1.00	2.00	-	-
140	1.10	2.30	-	-
160	1.20	2.60	-	-
180	1.35	3.10	-	-
200	1.45	-	-	-
220	1.55	-	-	-
240	1.65	-	-	-
260	1.80	-	-	-
280	1.90	-	-	-
300	2.00	-	-	-
320	2.10	-	-	-

Critical Temperatures: Loadings for alternative critical temperatures from 350 to 750°C are available on request

The data provided complies with the principles of the ASFP/BCF/ICF industry Guidance and Sections 3 and 5 or 6 of this Yellow Book

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NULLIFIRE SYSTEM S606

1. Product description
Solvent based thin film intumescent coating with decorative topseal range

2. Manufacturer
NULLIFIRE LIMITED
Torrington Avenue Coventry CV4 9TJ
T: 02476 855000
F: 02476 469547 W: www.nullifire.com

3. Availability
UK Mainland: immediate supply direct from Nullifire Ltd
Overseas: Contact Nullifire UK for local supplier information

4. Nominal density (g/ml)
Basecoat: 1.34 to 1.37 (Practical Volume Solids 68%)

5. Wet Coverage rates
Coverage = 0.73 l/m² at 0.5 mm d.f.t.

Maximum basecoat wet application rates/coat:

Airless spray	1500 g/m²	1.1 mm w.f.t.	0.74 mm d.f.t.
Brush	750 g/m²	0.55 mm w.f.t.	0.37 mm d.f.t.

Relationship between wet application rate and dry film thickness (d.f.t.):
g/m² = d.f.t. x 2015
w.f.t. = d.f.t. x 1.47

6. Appearance
Smooth fibre free basecoat
Full range of BS4800 / RAL colour decorative topseals available

7. Scope of use
May be used in internal locations without a topseal.

For semi-external locations a topseal is required but it can be left up to 3 months without top sealing.

Can be used on steelwork immediately after erection and left up to 3 months without top sealing.

A quick drying off-site grade is also available on request.

8. Durability
Good resistance to impact and abrasion. Successfully fire tested on structural sections after extensive accelerated and natural ageing.

9. Performance in other tests
Manufactured in accordance with the requirements of ISO 9001:2000 (certificate no. FM01764)

10. Other applications
Suitable for the fire protection of a range of other materials including galvanised steel and cast iron.

a) Protection technique
Profile

b) Application technique
Airless spray, roller or brush

c) Specification of system
Blast clean to SA 2½ (preferred) or wire brush and degrease mill scaled steel
Apply Nullifire or other compatible primer – refer to Nullifire Technical Department
Apply basecoat to required thickness (see table)
Apply selected decorative topseal
Full range of BS4800 / RAL colour decorative topseals available

NULLIFIRE SYSTEM S606

Universal Beams 3 sided exposure (supporting slab) Critical Temperature of 620° C				
Hp/A	D.f.t. for basecoat thickness only (mm)			
m^{-1}	**30 min**	**60 min**	**90 min**	**120 min**
40	0.30	0.30	0.58	1.03
50	0.30	0.34	0.68	1.13
60	0.30	0.38	0.78	1.23
70	0.30	0.43	0.88	1.33
80	0.30	0.48	0.98	1.43
90	0.30	0.53	1.08	1.58
100	0.30	0.58	1.18	1.73
110	0.30	0.63	1.28	2.01
120	0.30	0.68	1.38	2.28
130	0.30	0.73	1.48	2.48
140	0.30	0.78	1.58	2.68
150	0.30	0.83	1.68	2.88
160	0.30	0.88	1.78	3.08
170	0.30	0.93	1.88	3.23
180	0.30	0.98	1.98	3.38
190	0.30	1.03	2.06	3.56
200	0.30	1.08	2.13	3.73
210	0.30	1.13	2.23	3.88
220	0.30	1.18	2.33	4.03
230	0.30	1.23	2.46	4.16
240	0.30	1.28	2.58	4.28
250	0.30	1.31	2.68	-
260	0.30	1.33	2.78	-
270	0.30	1.38	2.88	-
280	0.30	1.43	2.98	-
290	0.30	1.48	3.11	-
300	0.30	1.53	3.23	-
310	0.30	1.56	3.33	-
320	0.30	1.58	3.43	-

Universal Columns - 4 sided exposure Universal Beams - 4 sided exposure (without slab) Critical Temperature of 550° C				
Hp/A	D.f.t. for basecoat thickness only (mm)			
m^{-1}	**30 min**	**60 min**	**90 min**	**120 min**
40	0.30	0.33	0.88	1.43
50	0.30	0.41	0.96	1.53
60	0.30	0.48	1.03	1.63
70	0.30	0.58	1.13	1.81
80	0.30	0.68	1.23	1.98
90	0.30	0.73	1.33	2.18
100	0.30	0.78	1.43	2.38
110	0.30	0.86	1.56	2.66
120	0.30	0.93	1.68	2.93
130	0.30	1.01	1.86	3.23
140	0.30	1.08	2.03	3.53
150	0.30	1.13	2.16	3.68
160	0.30	1.18	2.28	3.83
170	0.30	1.26	2.41	3.96
180	0.30	1.33	2.53	4.08
190	0.30	1.38	2.63	4.31
200	0.30	1.43	2.73	4.53
210	0.30	1.48	2.86	4.94
220	0.30	1.53	2.98	5.35
230	0.30	1.58	3.11	5.74
240	0.30	1.63	3.23	6.13
250	0.30	1.71	3.33	-
260	0.30	1.78	3.43	-
270	0.30	1.83	3.56	-
280	0.30	1.88	3.68	-
290	0.30	1.93	3.81	-
300	0.30	1.98	3.93	-
310	0.30	2.03	4.03	-
320	0.30	2.08	4.13	-

Rectangular Hollow Section Columns 4 sided exposure Critical Temperature of 550° C				
Hp/A	D.f.t. for basecoat thickness only (mm)			
m^{-1}	**30 min**	**60 min**	**90 min**	**120 min**
70	0.53	0.53	1.58	4.08
80	0.53	0.53	1.73	4.08
90	0.53	0.63	1.86	4.08
100	0.53	0.73	1.98	4.08
110	0.53	0.88	2.31	-
120	0.53	1.03	2.63	-
130	0.53	1.19	3.01	-
140	0.53	1.34	3.38	-
150	0.53	1.51	-	-
160	0.53	1.68	-	-
170	0.53	1.91	-	-
180	0.53	2.13	-	-
190	0.53	2.38	-	-
200	0.53	2.63	-	-
210	0.53	2.76	-	-
220	0.53	2.89	-	-
230	0.53	3.04	-	-
240	0.53	3.18	-	-
250	0.53	3.33	-	-
260	0.53	3.48	-	-

Circular Hollow Section Columns Full exposure Critical Temperature of 550° C				
Hp/A	D.f.t. for basecoat thickness only (mm)			
m^{-1}	**30 min**	**60 min**	**90 min**	**120 min**
70	0.53	0.58	2.03	-
80	0.53	0.73	2.18	-
90	0.53	0.86	2.36	-
100	0.53	0.98	2.53	-
110	0.53	1.18	2.93	-
120	0.53	1.38	3.33	-
130	0.53	1.61	3.88	-
140	0.53	1.83	-	-
150	0.53	2.03	-	-
160	0.53	2.23	-	-
170	0.53	2.43	-	-
180	0.53	2.63	-	-
190	0.53	2.81	-	-
200	0.53	2.98	-	-
210	0.53	3.13	-	-
220	0.53	3.28	-	-
230	0.53	3.46	-	-
240	0.53	3.63	-	-
250	0.56	3.78	-	-
260	0.58	3.93	-	-

Critical Temperatures: Loadings for alternative critical temperatures from 350 to 750°C are available on request

This product is certified by a 3rd Party Certification body accredited to ISO Guide 65
The data provided complies with the principles of the ASFP/BCF/ICF industry Guidance and Sections 3 and 5 or 6 of this Yellow Book

NULLIFIRE SYSTEM S706

1. Product description
Solvent based thin film intumescent coating with decorative topseal range

2. Manufacturer
NULLIFIRE LIMITED
Torrington Avenue Coventry CV4 9TJ
T: 02476 855000
F: 02476 469547 W: www.nullifire.com

3. Availability
UK Mainland: immediate supply direct from Nullifire Ltd

Overseas: Contact Nullifire UK for local supplier information

4. Nominal density (g/ml)
Basecoat: 1.39 (Practical Volume Solids 70%)

5. Wet Coverage rates
Coverage = 0.72 l/m² at 0.5 mm d.f.t.
Maximum basecoat wet application rates/coat:

Airless spray	1500 g/m²	1.1 mm w.f.t.	0.77 mm d.f.t.
Brush	750 g/m²	0.56 mm w.f.t.	0.39 mm d.f.t.

Relationship between wet application rate and dry film thickness (d.f.t.):
g/m² = d.f.t. x 2000
w.f.t. = d.f.t. x 1.43

6. Appearance
Smooth fibre free basecoat
Full range of BS4800 / RAL colour decorative topseals available

7. Scope of use
May be used in internal locations without a topseal.

For semi-exposed locations an approved topseal is required.

For temporary exposure of up to 3 months during the construction phase a topseal may not be required depending on site conditions. Contact Nullifire Technical Department.

A quick drying off-site grade is also available on request.

8. Durability
Good resistance to impact and abrasion. Successfully fire tested on structural sections after accelerated and natural ageing appropriate to intended end use conditions.

9. Performance in other tests
Manufactured in accordance with the requirements of ISO 9001:2000 (certificate no. FM01764)

10. Other applications
Suitable for the fire protection of a range of other materials including galvanised steel and cast iron.

11. Protection technique
Profile

12. Application technique
Airless spray, roller or brush

13. Specification of system
a) Blast clean to SA 2½ (preferred) or wire brush and degrease mill scaled steel
b) Apply Nullifire or other compatible primer – refer to Nullifire Technical Department
c) Apply basecoat to required thickness (see table)
d) Apply selected decorative topseal

NULLIFIRE SYSTEM S706

Universal Beams 3 sided exposure (supporting slab)						Universal Columns - 4 sided exposure Universal Beams - 4 sided exposure (without slab)				
Critical Temperature of 620° C						Critical Temperature of 550° C				
Hp/A	D.f.t. for basecoat thickness only (mm)					Hp/A	D.f.t. for basecoat thickness only (mm)			
m^{-1}	**30 min**	**60 min**	**90 min**	**120 min**		**m^{-1}**	**30 min**	**60 min**	**90 min**	**120 min**
40	0.24	0.24	0.34	0.51		40	0.25	0.25	0.38	0.60
45	0.24	0.24	0.36	0.56		45	0.25	0.25	0.41	0.68
50	0.24	0.24	0.38	0.61		50	0.25	0.25	0.45	0.82
55	0.24	0.24	0.41	S606		55	0.25	0.25	0.48	0.95
60	0.24	0.24	0.43	S606		60	0.25	0.25	0.52	1.09
65	0.24	0.24	0.45	S606		65	0.25	0.25	0.56	1.22
70	0.24	0.24	0.47	S606		70	0.25	0.25	0.59	1.36
75	0.24	0.24	0.50	S606		75	0.25	0.25	0.67	1.49
80	0.24	0.24	0.52	S606		80	0.25	0.25	0.76	1.63
85	0.24	0.24	0.54	S606		85	0.25	0.25	0.84	1.76
90	0.24	0.24	0.57	S606		90	0.25	0.25	0.93	1.90
95	0.24	0.24	0.59	S606		95	0.25	0.25	1.02	2.03
100	0.24	0.24	0.60	S606		100	0.25	0.25	1.11	2.17
105	0.24	0.25	0.66	S606		105	0.25	0.25	1.19	2.30
110	0.24	0.26	0.70	S606		110	0.25	0.28	1.28	2.44
115	0.24	0.28	0.75	S606		115	0.25	0.30	1.37	2.60
120	0.24	0.30	0.79	S606		120	0.25	0.32	1.45	2.71
125	0.24	0.31	0.83	S606		125	0.25	0.35	1.54	S606
130	0.24	0.33	0.87	S606		130	0.25	0.37	1.63	S606
135	0.24	0.35	0.91	S606		135	0.25	0.39	1.72	S606
140	0.24	0.37	0.95	S606		140	0.25	0.42	1.78	S606
145	0.24	0.39	0.99	S606		145	0.25	0.44	1.83	S606
150	0.24	0.40	1.02	S606		150	0.25	0.46	1.89	S606
155	0.24	0.42	1.06	S606		155	0.25	0.49	1.94	S606
160	0.24	0.44	1.09	S606		160	0.25	0.51	1.99	S606
165	0.24	0.46	1.11	S606		165	0.25	0.53	2.04	S606
170	0.24	0.48	1.14	S606		170	0.25	0.56	2.10	S606
175	0.24	0.50	1.17	S606		175	0.25	0.58	2.15	S606
180	0.24	0.51	1.20	S606		180	0.25	0.62	2.31	S606
185	0.24	0.53	1.23	S606		185	0.25	0.69	2.47	S606
190	0.24	0.55	1.26	S606		190	0.25	0.77	2.63	S606
195	0.24	0.57	1.29	S606		195	0.25	0.84	S606	S606
200	0.24	0.59	1.32	S606		200	0.25	0.92	S606	S606
205	0.24	0.60	1.35	S606		205	0.25	0.99	S606	S606
210	0.24	0.65	1.38	S606		210	0.25	1.06	S606	S606
215	0.24	0.70	1.41	S606		215	0.25	1.12	S606	S606
220	0.24	0.75	1.44	S606		220	0.25	1.18	S606	S606
225	0.24	0.79	1.47	S606		225	0.25	1.24	S606	S606
230	0.24	0.84	S606	S606		230	0.25	1.30	S606	S606
235	0.24	0.88	S606	S606		235	0.25	1.36	S606	S606
240	0.24	0.93	S606	S606		240	0.25	1.41	S606	S606
245	0.24	0.97	S606	S707-120		245	0.25	1.45	S606	-
250	0.24	1.02	S606	S707-120		250	0.25	1.49	S606	-
255	0.24	1.04	S606	S707-120		255	0.25	1.52	S606	-
260	0.24	1.06	S606	S707-120		260	0.25	1.56	S606	-
265	0.24	1.08	S606	S707-120		265	0.25	1.60	S606	-
270	0.25	1.09	S606	S707-120		270	0.25	1.63	S606	-
275	0.25	1.11	S606	S707-120		275	0.25	1.67	S606	-
280	0.26	1.13	S606	S707-120		280	0.25	1.71	S606	-
285	0.26	1.15	S606	S707-120		285	0.25	1.74	S606	-
290	0.27	1.17	S606	S707-120		290	0.25	1.78	S606	-
295	0.28	1.19	S606	S707-120		295	0.25	1.81	S606	-
300	0.29	1.20	S606	S707-120		300	0.25	1.84	S606	-
305	0.30	1.22	S606	S707-120		305	0.25	1.88	S606	-
310	0.30	1.24	S606	S707-120		310	0.25	1.91	S606	-
315	0.31	1.26	S606	S707-120		315	0.25	1.95	S606	-
320	0.32	1.28	S606	-		320	0.25	1.98	S606	-

Critical Temperatures: Loadings for alternative critical temperatures from 350 to 750°C are available on request

This product is certified by a 3rd Party Certification body accredited to ISO Guide 65
The data provided complies with the principles of the ASFP/BCF/ICF industry Guidance and Sections 3 and 5 or 6 of this Yellow Book

NULLIFIRE SYSTEM S707-60

1. Product description
Water based thin film intumescent coating with decorative topseal range

2. Manufacturer
NULLIFIRE LIMITED
Torrington Avenue Coventry CV4 9TJ
T: 02476 855000
F: 02476 469547 W: www.nullifire.com

3. Availability
UK Mainland: immediate supply direct from Nullifire Ltd
Overseas: Contact Nullifire UK for local supplier information

4. Nominal density (g/ml)
Basecoat: 1.35 (Practical Volume Solids 72%)

5. Wet Coverage rates
Coverage = 0.7 l/m² at 0.5 mm d.f.t.

Maximum basecoat wet application rates/coat:

Airless spray	1613 g/m²	1.2 mm w.f.t.	0.86 mm d.f.t.
Brush	806 g/m²	0.60 mm w.f.t.	0.43 mm d.f.t.

Relationship between wet application rate and dry film thickness (d.f.t.):
g/m² = d.f.t. x 1875
w.f.t. = d.f.t. x 1.38

6. Appearance
Smooth white basecoat
Full range of BS4800 / RAL colour decorative topseals available

7. Scope of use
May be used in internal locations without a topseal

For semi-exposed locations an approved topseal is required

For temporary exposure of up to 6 months during the construction phase with an appropriate topseal

Suitable for off-site use with an approved topseal

8. Durability
Good resistance to impact and abrasion. Successfully fire tested on structural sections after accelerated and natural ageing appropriate to intended end use conditions.

9. Performance in other tests
Manufactured in accordance with the requirements of ISO 9001:2000 (certificate no. FM01764)

Achieves “Class 0” to BS476 part 6 & 7, EN13823 (SBI) and IMO smoke/toxicity data also available

Has been tested on cellular beams in accordance with the ASFP test method

10. Other applications
Suitable for the fire protection of a range of other materials including galvanised steel and cast iron

11. Protection technique
Profile

12. Application technique
Airless spray, roller or brush

13. Specification of system

a) Blast clean to SA 2½ (preferred) or wire brush and degrease mill scaled steel

b) Apply Nullifire or other compatible primer – refer to Nullifire Technical Department

c) Apply basecoat to required thickness (see table)

d) Apply selected decorative topseal

NULLIFIRE SYSTEM S707-60

Universal Beams **3 sided exposure (supporting slab)** Critical Temperature of 620° C				
Hp/A	D.f.t. for basecoat thickness only (mm)			
m^{-1}	**30 min**	**60 min**	**90 min**	**120 min**
40	0.200	0.200	0.208	S707-120
50	0.200	0.200	0.250	S707-120
60	0.200	0.200	0.319	S707-120
70	0.200	0.207	0.388	S707-120
80	0.200	0.221	0.441	S707-120
90	0.200	0.235	0.455	S707-120
100	0.200	0.249	0.469	S707-120
110	0.200	0.263	0.483	S707-120
120	0.200	0.277	0.497	S707-120
130	0.200	0.291	0.511	S707-120
140	0.200	0.306	0.525	S707-120
150	0.200	0.320	0.539	S707-120
160	0.200	0.334	0.553	S707-120
170	0.200	0.348	0.567	S707-120
180	0.200	0.362	0.581	S707-120
190	0.200	0.376	S707-120	S707-120
200	0.200	0.390	S707-120	S707-120
210	0.200	0.404	S707-120	S707-120
220	0.200	0.419	S707-120	S707-120
230	0.200	0.433	S707-120	S707-120
240	0.200	0.450	S707-120	S707-120
250	0.200	0.469	S707-120	S707-120
260	0.201	0.488	S707-120	S707-120
270	0.208	0.507	S707-120	S707-120
280	0.215	0.526	S707-120	S707-120
290	0.222	0.544	S707-120	S707-120
300	0.230	0.563	S707-120	S707-120
310	0.237	0.582	S707-120	S707-120
320	0.244	0.601	S707-120	-

Universal Columns - 4 sided exposure **Universal Beams - 4 sided exposure (without slab)** Critical Temperature of 550° C				
Hp/A	D.f.t. for basecoat thickness only (mm)			
m^{-1}	**30 min**	**60 min**	**90 min**	**120 min**
40	0.200	0.200	0.230	S707-120
50	0.200	0.200	0.295	S707-120
60	0.200	0.212	0.360	S707-120
70	0.200	0.238	0.424	S707-120
80	0.200	0.264	0.489	S707-120
90	0.200	0.290	0.554	S707-120
100	0.200	0.316	0.652	S707-120
110	0.200	0.341	0.773	S707-120
120	0.200	0.367	0.893	S707-120
130	0.200	0.393	1.014	S707-120
140	0.200	0.419	1.134	S707-120
150	0.200	0.445	1.255	S707-120
160	0.200	0.471	1.375	S707-120
170	0.200	0.497	S707-120	S707-120
180	0.200	0.523	S707-120	S707-120
190	0.200	0.549	S707-120	S707-120
200	0.200	0.575	S707-120	S707-120
210	0.200	0.614	S707-120	S707-120
220	0.200	0.656	S707-120	S707-120
230	0.212	0.699	S707-120	S707-120
240	0.225	0.779	S707-120	-
250	0.238	0.897	S707-120	-
260	0.251	1.015	S707-120	-
270	0.264	1.094	S707-120	-
280	0.277	1.156	S707-120	-
290	0.290	1.219	S707-120	-
300	0.303	1.281	S707-120	-
310	0.316	1.344	S707-120	-
320	0.329	1.406	S707-120	-

Critical Temperatures: Loadings for alternative critical temperatures from 350 to 750°C are available on request

This product is certified by a 3rd Party Certification body accredited to ISO Guide 65
The data provided complies with the principles of the ASFP/BCF/ICF industry Guidance and Sections 3 and 5 or 6 of this Yellow Book

NULLIFIRE SYSTEM S707-60

Rectangular Hollow Section Columns 4 sided exposure Critical Temperature of 520° C				
Hp/A	D.f.t. for basecoat thickness only (mm)			
m^{-1}	30 min	60 min	90 min	120 min
40	0.370	0.370	0.690	S707-120
50	0.370	0.370	0.860	S707-120
60	0.370	0.370	1.030	S707-120
70	0.370	0.370	1.162	S707-120
80	0.370	0.370	1.293	S707-120
90	0.370	0.370	1.425	S707-120
100	0.370	0.450	1.556	S707-120
110	0.370	0.610	S707-120	S707-120
120	0.370	0.780	S707-120	S707-120
130	0.370	0.940	S707-120	-
140	0.370	1.070	S707-120	-
150	0.370	1.160	-	-
160	0.370	1.260	-	-
170	0.370	1.350	-	-
180	0.370	1.450	-	-
190	0.370	1.540	-	-
200	0.370	1.630	-	-
210	0.370	S707-120	-	-
220	0.370	S707-120	-	-
230	0.370	S707-120	-	-
240	0.370	-	-	-
250	0.370	-	-	-
260	0.410	-	-	-
270	0.450	-	-	-
280	0.500	-	-	-
290	0.550	-	-	-
300	0.600	-	-	-
310	0.650	-	-	-
320	0.700	-	-	-

Circular Hollow Section Columns Full exposure Critical Temperature of 520° C				
Hp/A	D.f.t. for basecoat thickness only (mm)			
m^{-1}	30 min	60 min	90 min	120 min
40	0.370	0.550	S707-120	S707-120
50	0.370	0.610	S707-120	S707-120
60	0.370	0.670	S707-120	S707-120
70	0.370	0.740	S707-120	S707-120
80	0.370	0.800	S707-120	S707-120
90	0.370	0.860	S707-120	S707-120
100	0.370	0.930	S707-120	S707-120
110	0.370	0.990	S707-120	S707-120
120	0.370	1.150	S707-120	S707-120
130	0.370	1.400	S707-120	-
140	0.370	1.660	S707-120	-
150	0.370	S707-120	-	-
160	0.370	S707-120	-	-
170	0.370	S707-120	-	-
180	0.370	S707-120	-	-
190	0.370	S707-120	-	-
200	0.370	S707-120	-	-
210	0.440	S707-120	-	-
220	0.520	S707-120	-	-
230	0.610	S707-120	-	-
240	0.690	-	-	-
250	0.780	-	-	-
260	0.870	-	-	-
270	0.950	-	-	-
280	1.080	-	-	-
290	1.400	-	-	-
300	1.660	-	-	-
310	S707-120	-	-	-
320	S707-120	-	-	-

Critical Temperatures: Loadings for alternative critical temperatures from 350 to 750°C are available on request

This product is certified by a 3rd Party Certification body accredited to ISO Guide 65
The data provided complies with the principles of the ASFP/BCF/ICF industry Guidance and Sections 3 and 5 or 6 of this Yellow Book

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NULLIFIRE SYSTEM S707-120

1. Product description
Water based intumescent coating with decorative topseal range

2. Manufacturer
NULLIFIRE LIMITED

Torrington Avenue Coventry CV4 9TJ

T: 02476 855000 F: 02476 469547 W: www.nullifire.com

3. Availability
UK Mainland: immediate supply direct from Nullifire Ltd

Overseas: Contact Nullifire UK for local supplier information

4. Nominal density (g/ml)
Basecoat: 1.37 (Practical Volume Solids 68%)

5. Wet Coverage rates
Coverage = 1.47 l/m² at 1.0 mm d.f.t.

Maximum basecoat wet application rates/coat:

Airless spray	1915 g/m²	1.4 mm w.f.t.	0.95 mm d.f.t.
Brush	967 g/m²	0.70 mm w.f.t.	0.48 mm d.f.t.

Relationship between wet application rate and dry film thickness (d.f.t.):
g/m² = d.f.t. x 2015
w.f.t. = d.f.t. x 1.47

6. Appearance
Smooth grey basecoat

Full range of BS4800 / RAL colour decorative topseals available

7. Scope of use
May be used in internal locations without a topseal

For semi-exposed locations an approved topseal is required

For temporary exposure of up to 6 months during the construction phase with an appropriate topseal

Suitable for off-site use with an approved topseal

8. Durability
Good resistance to impact and abrasion. Successfully fire tested on structural sections after accelerated and natural ageing appropriate to intended end use conditions.

9. Performance in other tests
Manufactured in accordance with the requirements of ISO 9001:2000 (certificate no. FM01764)

Achieves “Class 0” to BS476 part 6 and 7, IMO smoke and toxicity data also available

Has been tested on cellular beams in accordance with the ASFP test method

10. Other applications
Suitable for the fire protection of a range of other materials including galvanised steel and cast iron.

11. Protection technique
Profile

12. Application technique
Airless spray, roller or brush

13. Specification of system

a) Blast clean to SA 2½ (preferred) or wire brush and degrease mill scaled steel

b) Apply Nullifire or other compatible primer – refer to Nullifire Technical Department

c) Apply basecoat to required thickness (see table)

d) Apply selected decorative topseal.

NULLIFIRE SYSTEM S707-120

Universal Beams				
3 sided exposure (supporting slab)				
Critical Temperature of 620° C				
Hp/A	D.f.t. for basecoat thickness only (mm)			
m^{-1}	**30 min**	**60 min**	**90 min**	**120 min**
40	0.929	0.929	0.929	0.929
50	0.929	0.929	0.929	0.966
60	0.929	0.929	0.929	1.145
70	0.929	0.929	0.929	1.324
80	0.929	0.929	0.929	1.503
90	0.929	0.929	0.929	1.682
100	0.929	0.929	0.981	1.861
110	0.929	0.929	1.046	2.040
120	0.929	0.929	1.111	2.156
130	0.929	0.929	1.176	2.273
140	0.929	0.929	1.241	2.389
150	0.929	0.929	1.306	2.505
160	0.929	0.929	1.371	2.621
170	0.929	0.929	1.436	2.738
180	0.929	0.929	1.501	2.854
190	0.929	0.929	1.566	2.970
200	0.929	0.929	1.631	3.087
210	0.929	0.929	1.696	3.204
220	0.929	0.932	1.761	3.321
230	0.929	0.991	1.826	3.438
240	0.929	1.049	1.891	3.555
250	0.929	1.108	1.956	3.672
260	0.929	1.167	2.021	3.789
270	0.929	1.226	2.180	3.906
280	0.929	1.285	2.380	4.023
290	0.929	1.344	2.580	4.140
300	0.929	1.403	2.780	4.258
310	0.929	1.462	2.980	4.375
320	0.929	1.521	3.145	-

Universal Columns - 4 sided exposure				
Universal Beams - 4 sided exposure (without slab)				
Critical Temperature of 550° C				
Hp/A	D.f.t. for basecoat thickness only (mm)			
m^{-1}	**30 min**	**60 min**	**90 min**	**120 min**
40	0.917	0.917	0.917	0.917
50	0.917	0.917	0.933	1.131
60	0.917	0.917	1.050	1.378
70	0.917	0.917	1.166	1.624
80	0.917	0.917	1.282	1.870
90	0.917	0.917	1.399	2.117
100	0.917	0.917	1.515	2.363
110	0.917	0.917	1.631	2.609
120	0.917	0.917	1.748	2.856
130	0.917	0.917	1.864	3.102
140	0.917	0.917	1.981	3.348
150	0.917	0.939	2.097	3.587
160	0.917	1.036	2.213	3.756
170	0.917	1.133	2.330	3.925
180	0.917	1.230	2.446	4.094
190	0.917	1.327	2.562	4.263
200	0.917	1.424	2.679	4.432
210	0.917	1.521	2.795	4.615
220	0.917	1.618	2.910	4.808
230	0.917	1.715	3.024	5.000
240	0.917	1.812	3.137	-
250	0.917	1.909	3.251	-
260	0.917	2.006	3.365	-
270	0.917	2.103	3.479	-
280	0.917	2.200	3.632	-
290	0.917	2.297	3.942	-
300	0.917	2.394	4.252	-
310	0.917	2.491	4.547	-
320	0.917	2.588	4.779	-

Critical Temperatures: Loadings for alternative critical temperatures from 350 to 750°C are available on request

This product is certified by a 3rd Party Certification body accredited to ISO Guide 65
The data provided complies with the principles of the ASFP/BCF/ICF industry Guidance and Sections 3 and 5 or 6 of this Yellow Book

NULLIFIRE SYSTEM S707-120

Rectangular & Circular Hollow Section Columns				
Full exposure				
Critical Temperature of 520° C				
Hp/A	D.f.t. for basecoat thickness only (mm)			
m^{-1}	**30 min**	**60 min**	**90 min**	**120 min**
40	0.484	0.683	0.688	1.379
50	0.484	0.828	1.060	2.444
60	0.484	0.972	1.433	3.508
70	0.484	1.117	1.805	4.177
80	0.484	1.261	2.178	4.451
90	0.484	1.406	2.550	4.726
100	0.484	1.550	2.923	5.000
110	0.484	1.694	3.295	5.274
120	0.484	1.833	3.668	5.549
130	0.538	1.949	4.040	-
140	0.623	2.064	5.107	-
150	0.707	2.180	-	-
160	0.791	2.296	-	-
170	0.876	2.411	-	-
180	0.960	2.527	-	-
190	1.044	3.212	-	-
200	1.129	4.040	-	-
210	1.213	4.476	-	-
220	1.297	4.913	-	-
230	1.381	5.349	-	-
240	1.466	-	-	-
250	1.550	-	-	-
260	1.603	-	-	-
270	1.656	-	-	-
280	1.709	-	-	-
290	1.762	-	-	-
300	1.815	-	-	-
310	1.866	-	-	-
320	1.917	-	-	-

Solid Steel Rods				
Full exposure				
Critical Temperature of 500° C				
Hp/A	D.f.t. for basecoat thickness only (mm)			
m^{-1}	**30 min**	**60 min**	**90 min**	**120 min**
40	1.403	1.532	1.457	-
50	1.403	1.532	1.804	-
60	1.403	1.532	2.165	-
70	1.403	1.532	2.526	-
80	1.403	1.966	-	-
90	1.403	2.399	-	-
100	1.403	2.848	-	-
110	1.403	3.304	-	-
120	1.403	3.760	-	-
130	1.403	4.216	-	-
140	1.403	-	-	-
150	1.403	-	-	-
160	1.403	-	-	-
170	1.403	-	-	-
180	1.643	-	-	-
190	1.882	-	-	-
200	2.122	-	-	-
210	-	-	-	-
220	-	-	-	-
230	-	-	-	-
240	-	-	-	-
250	-	-	-	-
260	-	-	-	-
270	-	-	-	-
280	-	-	-	-
290	-	-	-	-
300	-	-	-	-
310	-	-	-	-
320	-	-	-	-

Critical Temperatures: Loadings for alternative critical temperatures from 350 to 750°C are available on request

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PROTEGAFIRE S168

1. Product description
Water borne intumescent coating

2. Manufacturer
PROTEGA COATINGS LTD
Kelvin Way, West Bromwich, West Midlands B70 7JZ
T: 0121 525 5665
F: 0121 553 2787 W: www.protegacoatings.com

3. Availability
Supplied direct from Protega Coatings

4. Nominal specific gravity
Nominal Density: 1.35 kg/l

Nominal Volume Solids: 70%

5. Wet coverage rate
Airless spray: Maximum wet film thickness per coat – 2285 microns, giving 1600 microns dry.

Brush/roller: maximum wet film thickness per coat - 714 microns, giving 500 microns dry, for higher cosmetic finish. Where cosmetic finish is not important, product may be applied up to 1428 microns wet, giving 1000 microns dry.

6. Appearance
Smooth matt off-white finish. Gloss or semi-gloss finish in a wide range of colours available when topcoated.

7. On site use
Internal use only. Recommended for ISO 12944 C1 or C2 conditions.

8. Durability
The coating has been tested to BS3900-E3 (impact resistance) and BS3900-E2 (scratch resistance) with good results and is therefore shown to be able to resist reasonable levels of 'wear and tear' for good long term performance.

9. Performance in other BS and EN tests
Consult manufacturer for details.

10. Other applications
Consult manufacturer for details.

a) Protection technique
Profile

b) Application technique
Airless Spray, brush & roller

c) Specification of system
Blast clean to Sa2½ and apply approved primer – consult manufacturer's technical information for details of range of approved primers.

Apply ProtegaFire S168 to appropriate thickness – consult loading table.

Apply Protega topseal as required (not required for C1 environments).

Consult manufacturers technical literature for full details.

PROTEGAFIRE S168

I-Section Beams Supporting a Concrete Slab (3-sided)	
Critical Temperature 620°C	
30mins	
Range of Section Factors (m^{-1})	Intumescent Thickness (mm)
up to 195	0.20
196 - 210	0.21
211 - 230	0.22
231 - 250	0.23
251 - 265	0.24
266 - 285	0.25
286 – 305	0.26
306 – 320	0.27
321 – 340	0.28

I-Section Beams Supporting a Concrete Slab (3-sided)	
Critical Temperature 620°C	
90 mins	
Range of Section Factors (m^{-1})	Intumescent Thickness (mm)
up to 95	0.67
96 - 100	0.72
101 - 105	0.77
106 - 110	0.82
111 - 115	0.89
116 – 120	0.93
121 - 125	0.98
126 - 130	1.03
131 - 135	1.09
136 - 140	1.14
141 - 145	1.19
146 - 150	1.24
151 - 155	1.30
156 - 160	1.35
161 - 165	1.40

I-Section Beams Supporting a Concrete Slab (3-sided)	
Critical Temperature 620°C	
60 mins	
Range of Section Factors (m^{-1})	Intumescent Thickness (mm)
Up to 135	0.20
136 - 140	0.21
141 - 145	0.22
146 - 150	0.23
151 - 155	0.25
156 – 160	0.26
161 - 165	0.27
166 - 170	0.29
171 - 175	0.30
176 - 180	0.32
181 - 185	0.33
186 - 190	0.34
191 - 195	0.36
196 - 200	0.37
201 - 205	0.38
206- 210	0.40
211 - 215	0.41
216 - 220	0.43
221 - 225	0.44
226 - 230	0.45
231 - 235	0.47
236 - 240	0.48
241 - 245	0.49
246 - 250	0.51
251 - 255	0.52
256 - 260	0.54
260 - 265	0.55
266 - 270	0.57
271 - 275	0.59
276 - 280	0.62
281 - 285	0.64
286 - 290	0.66
291 - 295	0.69
296 - 300	0.71
301 - 305	0.77
306 - 310	0.82
311 - 315	0.88
316 - 320	0.93
321 - 325	0.98
326 - 330	1.03
331 - 335	1.09
336 - 340	1.14

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PROTEGAFIRE S168

I-Section Beams (4-sided)	
Critical Temperature 550°C	
30 mins	
Range of Section Factors (m^{-1})	Intumescent Thickness (mm)
up to 165	0.20
166 - 180	0.21
181 - 195	0.22
196 - 210	0.23
211 - 230	0.24
231 - 245	0.25
246 - 260	0.26
261 - 280	0.27
281 - 295	0.28
296 - 310	0.29
311 - 330	0.30

I-Section Beams (4-sided)	
Critical Temperature 550°C	
60 mins	
Range of Section Factors (m^{-1})	Intumescent Thickness (mm)
up to 130	0.20
131 - 135	0.25
136 - 140	0.28
141 - 145	0.31
146 - 150	0.35
151 - 155	0.38
156 - 160	0.41
161 - 165	0.45
166 - 170	0.48
171 - 175	0.51
176 - 180	0.55
181 - 185	0.56
186 - 190	0.58
191 - 195	0.59
196 - 200	0.60
201 - 205	0.62
206 - 210	0.63
211 - 215	0.65
216 - 220	0.66
221 - 225	0.68
226 - 230	0.69
231 - 235	0.70
236 - 240	0.72
241 - 245	0.76
246 - 250	0.80
251 - 255	0.84
256 - 260	0.88
261 - 265	0.92
266 - 270	0.96
271 - 275	1.00
276 - 280	1.04
281 - 285	1.08
286 - 290	1.12
291 - 295	1.16
296 - 300	1.20
301 - 305	1.24
306 - 310	1.28
311 - 315	1.32
316 - 320	1.36
321 - 325	1.40

I-Section Beams (4-sided)	
Critical Temperature 550°C	
90 mins	
Range of Section Factors (m^{-1})	Intumescent Thickness (mm)
up to 45	0.72
46 - 50	0.75
51 - 55	0.78
56 -60	0.81
61 - 65	0.84
66 - 70	0.90
71 - 75	0.93
76 - 80	0.96
81 - 85	0.99
86 - 90	1.02
91 - 95	1.05
96 - 100	1.08
101 - 105	1.14
106 - 110	1.17
111 - 115	1.20
116 - 120	1.23
121 - 125	1.26
126 - 130	1.29
131 - 135	1.32
136 - 140	1.35
141 - 145	1.40

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PROTEGAFIRE S168

I-Section Columns (4-sided)	
Critical Temperature 462°C	
30 mins	
Range of Section Factors (m^{-1})	Intumescent Thickness (mm)
Up to 115	0.20
116 - 125	0.21
126 - 135	0.22
136 - 145	0.23
146 - 150	0.24
151 – 160	0.25
161 - 170	0.26
171 - 180	0.27
181 - 190	0.28
191 - 200	0.29
201 - 210	0.30
211 - 220	0.31
221 - 225	0.32
226 - 235	0.33
236 - 245	0.34
246- 255	0.35
256 - 265	0.36
266 - 275	0.37
276 - 285	0.38
286 - 295	0.39
296 - 300	0.40
301 - 310	0.41
311 - 320	0.42
321 - 330	0. 43
331 - 340	0.44

I-Section Columns (4-sided)	
Critical Temperature 462°C	
60 mins	
Range of Section Factors (m^{-1})	Intumescent Thickness (mm)
up to 80	0.52
81 - 85	0.54
86 - 90	0.56
91 - 95	0.58
96 - 100	0.60
101 - 110	0.62
111 - 115	0.64
116 - 120	0.66
121 - 125	0.68
126 - 130	0.70
131 - 135	0.72
136 - 140	0.74
141 - 145	0.76
146 - 150	0.78
151 - 160	0.80
161 - 165	0.82
166 - 170	0.85
171 - 175	0.88
176 - 180	0.91
181 - 185	0.94
186 - 190	1.00
191 - 195	1.03
196 - 200	1.06
201 - 205	1.09
206 - 210	1.12
211 - 215	1.15
216 - 220	1.18
221 - 225	1.24
226 - 230	1.27
231 - 235	1.30
236 - 240	1.33
241 - 245	1.36
246 - 250	1.40
251 - 255	1.43
256 - 260	1.46
261 - 265	1.49
266 - 270	1.52
271 - 275	1.58
276 - 280	1.60

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SIKA UNITHERM SAFIR

1. Product description
Water based intumescent coating for interior use

2. Manufacturer
SIKA KORROSIONSSCHUTZ GMBH
Rieter Tal D-71665, Vaihingen Enz, Germany
T: +49 7042 1090
F: +49 7042 109289 W: www.unitherm–online.com

3. Nominal specific gravity
Basecoat: approx. 1.4 g/cm^3
Topcoat Sika® Unitherm® Dispersion: approx.1.2 g/cm^3
Topcoat Sika® Unitherm® 7854: approx. 1.3 g/cm^3

4. Wet coverage rates
Brush 800 g/m^2
Airless spray 1400 g/m^2

5. Appearance
White smooth basecoat. Coloured top coat only required for decorative finish

6. On site use
Internal structures, VOC approx. 44 g/litre

7. Durability
Long term durability tested by public Institute, MPA Braunschweig (Germany)

8. Performance in other BS and EN Tests
Quality Assurance to ISO 9001, Verified Environmental Management to EN ISO 14001,
BAM (Germany), Certifire (UK)

9. Other applications
Suitable for fire protection of galvanised steel and cast iron

a) Protection technique
Profile

b) Application technique
Airless spray, roller or brush

c) Specification of system

(a) Blast clean to SA 2½
(b) Apply suitable primer, see technical data sheet on primers
(c) Apply Sika® Unitherm® safir to required thickness (see table)
(d) Apply 1 coat decorative top coat if required for appearance
(e) Refer to Sika® Unitherm® safir product data sheet before using

SIKA UNITHERM SAFIR

Fire resistance period 30 mins			
	620°C	540°C	520 °C
Hp/A [m-1]	**I-Section Beams [3- sided]**	**I-Section Columns and Beams [4- sided]**	**RHS & CHS Columns [4- sided]**
up to 245	0.404	0.366	0.299
247	0.410		0.299
250	0.410		0.330
255	0.416		0.381
260	0.423		0.433
265	0.429		0.484
270	0.435		0.535
275	0.442		0.587
280	0.448		0.638
285	0.455		0.689
290	0.461		0.741
295	0.467		0.792
300	0.474		0.843
305	0.480		0.895
310	0.486		0.946
315	0.493		0.997
320	0.499		1.049
325			1.100
330			1.151

Fire resistance period 60 mins			
	620°C	540°C	520 °C
Hp/A [m-1]	**I-Section Beams [3- sided]**	**I-Section Columns and Beams [4- sided]**	**RHS & CHS Columns [4- sided]**
up to 49	0.401	0.392	0.304
50			0.330
55			0.460
60			0.590
65			0.718
70			0.845
75			0.973
80			1.100
82			1.161
85		0.424	1.161
90		0.500	1.223
95		0.532	1.284
100		0.587	1.364
105		0.641	1.407
110		0.695	1.469

Fire resistance period 60 mins			
	620°C	540°C	520 °C
Hp/A [m-1]	**I-Section Beams [3- sided]**	**I-Section Columns and Beams [4- sided]**	**RHS & CHS Columns [4- sided]**
115		0.749	1.530
120		0.803	1.664
125		0.857	1.664
130		0.912	1.731
135	0.431	0.966	1.798
140	0.46	1.020	1.865
145	0.49	1.074	1.932
150	0.52	1.128	1.999
155	0.549	1.182	2.066
160	0.579	1.237	2.133
165	0.62	1.291	2.200
170	0.636	1.345	2.288
175	0.661	1.399	2.376
180	0.687	1.453	2.464
185	0.713	1.507	2.552
190	0.738	1.540	2.64
195	0.765	1.557	2.728
200	0.791	1.569	2.816
205	0.817	1.582	2.904
210	0.843	1.594	
215	0.869	1.606	
220	0.895	1.619	
225	0.92	1.631	
230	0.946	1.643	
235	0.972	1.655	
240	0.998	1.668	
245	1.024	1.680	
250	1.050	1.692	
255	1.081	1.704	
260	1.113		
265	1.144		
270	1.176		
275	1.207		
280	1.239		
285	1.270		
290	1.301		
295	1.333		
300	1.364		
305	1.396		

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SIKA UNITHERM 38091

1. Product description

Solvent based intumescent coating

Variations available Sika® Unitherm® 38091 interior, Sika® Unitherm® 38091exterior, Sika® Unitherm® 38091 fast dry, Sika® Unitherm® shop and Sika® Unitherm® 38091 RS

2. Manufacturer

SIKA KORROSIONSSCHUTZ GMBH
Rieter Tal D-71665, Vaihingen Enz, Germany
T: +49 70421090
F: +49 7042109289 W: www.unitherm–online.com

3. Nominal specific gravity

Basecoat: approx. 1.29 g/cm^3

Topcoat Sika® Unitherm® 7854: approx. 1.3 g/cm^3

4. Wet coverage rates

Brush 800 g/m^2

Airless spray 1400 g/m^2

5. Appearance

White smooth basecoat. Coloured top coat only required for decorative finish and exterior performance

6. On site use

Internal or external structures, VOC approx. 390 g/litre

7. Durability

Long term durability tested by public Institute, MPA Braunschweig (Germany)

8. Performance in other BS and EN Tests

Quality Assurance to ISO 9001, Verified Environmental Management to EN ISO 14001,

BAM (Germany), Certifire (UK)

9. Other applications

Suitable for fire protection of galvanised steel and cast iron

a) Protection technique
Profile

b) Application technique
Airless spray, roller or brush

c) Specification of system
(a) Blast clean to SA 2½
(b) Apply suitable primer, see technical data sheet on primers
(c) Apply Sika® Unitherm® 38091 to required thickness (see table)
(d) Apply 1 coat decorative top coat if required for appearance or 2 coats for exterior resistance
(e) Refer to Sika® Unitherm® 38091 product data sheet before using

SIKA UNITHERM 38091

Fire resistance period 30 mins				
Hp/A [m^{-1}]	**I-Section Columns & Beams**	**I-Section Beams**	**RHS & CHS Columns**	**RHS Beams**
	4- sided	**3- sided**	**4- sided**	**3- sided**
	550°C	620°C*	520 °C	590°C*
<90	0.250	0.250	0.600	0.600
95	0.258	0.250	0.600	0.600
100	0.267	0.250	0.600	0.600
105	0.275	0.250	0.600	0.600
110	0.283	0.250	0.600	0.600
115	0.292	0.250	0.600	0.600
120	0.300	0.252	0.600	0.600
125	0.308	0.256	0.600	0.600
130	0.317	0.260	0.600	0.600
135	0.325	0.264	0.600	0.600
140	0.333	0.268	0.600	0.600
145	0.342	0.272	0.600	0.600
150	0.350	0.276	0.600	0.600
155	0.358	0.280	0.600	0.600
160	0.367	0.284	0.600	0.600
165	0.375	0.288	0.600	0.600
170	0.383	0.292	0.629	0.600
175	0.392	0.296	0.664	0.600
180	0.400	0.300	0.700	0.600
185	0.407	0.306	0.736	0.600
190	0.414	0.311	0.771	0.600
195	0.421	0.317	0.806	0.620
200	0.429	0.323	0.837	0.653
205	0.436	0.329	0.871	0.687

Fire resistance period 30 mins				
Hp/A [m^{-1}]	**I-Section Columns & Beams**	**I-Section Beams**	**RHS & CHS Columns**	**RHS Beams**
	4- sided	**3- sided**	**4- sided**	**3- sided**
	550°C	620°C*	520 °C	590°C*
210	0.443	0.334	0.907	0.721
215	0.450	0.340	0.943	0.757
220	0.457	0.346	0.979	0.793
225	0.464	0.351	1.014	0.829
230	0.471	0.357	1.050	0.862
235	0.479	0.363	1.060	0.894
240	0.486	0.369	1.070	0.929
245	0.493	0.374	1.080	0.964
250	0.500	0.380	1.090	1.000
255	0.507	0.386	1.100	1.007
260	0.514	0.391	1.115	1.014
265	0.521	0.397	1.130	1.021
270	0.529	0.403	1.145	1.029
275	0.536	0.409	1.161	1.036
280	0.543	0.414	1.176	1.043
285	0.550	0.420	1.191	1.050
290	0.557	0.426	1.206	1.057
295	0.564	0.431	1.222	1.064
300	0.571	0.437	1.238	1.071
305	0.579	0.443	1.253	1.079
310	0.586	0.449	1.269	1.086
315	0.593	0.454	1.284	1.093
320	0.600	0.460	1.300	1.100

* Table applies to beams with concrete slab

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SIKA UNITHERM 38091

Fire resistance period 60 mins				
Hp/A [m^{-1}]	**I-Section Columns & Beams**	**I-Section Beams**	**RHS & CHS Columns**	**RHS Beams**
	4- sided	**3- sided**	**4- sided**	**3- sided**
	550°C	620°C*	520 °C	590°C*
< 37	0.250	0.250	0.600	0.600
40	0.259	0.250	0.600	0.600
45	0.275	0.252	0.600	0.600
50	0.291	0.261	0.600	0.600
55	0.306	0.270	0.600	0.600
60	0.319	0.279	0.600	0.600
65	0.333	0.288	0.600	0.600
70	0.347	0.296	0.638	0.600
75	0.367	0.306	0.700	0.600
80	0.388	0.315	0.760	0.750
85	0.407	0.324	0.813	0.950
90	0.425	0.333	0.875	1.069
95	0.443	0.343	0.937	1.085
100	0.460	0.352	1.000	1.100
105	0.477	0.361	1.060	1.115
110	0.493	0.370	1.100	1.130
115	0.510	0.379	1.150	1.145
120	0.527	0.388	1.200	1.161
125	0.543	0.396	1.250	1.176
130	0.561	0.406	1.300	1.191
135	0.579	0.415	1.325	1.206
140	0.596	0.424	1.350	1.222
145	0.613	0.433	1.375	1.238
150	0.630	0.443	1.400	1.253
155	0.647	0.455	1.425	1.269
160	0.664	0.480	1.450	1.284
165	0.682	0.506	1.475	1.300
170	0.700	0.533	1.500	1.371
175	0.717	0.560	1.525	1.438
180	0.733	0.585	1.550	1.500

Fire resistance period 60 mins				
Hp/A [m^{-1}]	**I-Section Columns & Beams**	**I-Section Beams**	**RHS & CHS Columns**	**RHS Beams**
	4- sided	**3- sided**	**4- sided**	**3- sided**
	550°C	620°C*	520 °C	590°C*
185	0.750	0.610	1.575	1.550
190	0.778	0.635	1.600	1.600
195	0.805	0.661	1.700	1.650
200	0.830	0.689	1.800	1.700
205	0.853	0.715	1.925	1.750
210	0.867	0.740	2.050	1.800
215	0.881	0.765	2.146	1.850
220	0.894	0.790	2.242	1.900
225	0.917	0.817	2.333	1.950
230	0.944	0.844	2.417	2.000
235	0.970	0.870	2.500	2.050
240	0.995	0.895	2.550	2.100
245	1.044	0.922	2.600	2.150
250	1.100	0.950	2.650	2.200
255	1.200	0.975	2.700	2.250
260	1.320	1.000	2.750	2.300
265	1.420	1.020		2.350
270	1.525	1.040		2.400
275	1.640	1.060		2.467
280	1.743	1.080		2.533
285	1.850	1.100		2.600
290	1.864	1.183		2.650
295	1.878	1.257		2.700
300	1.892	1.333		
305	1.906	1.417		
310	1.921	1.500		
315	1.935	1.571		
320	1.950	1.650		

* Table applies to beams with concrete slab

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SIKA UNITHERM 38091

Fire resistance period 90 mins				
Hp/A [m-1]	**I-Section Columns & Beams 4- sided**	**I-Section Beams 3- sided**	**RHS & CHS Columns 4- sided**	**RHS Beams 3- sided**
	550°C	620°C*	520 °C	590°C*
< 25	0.550	0.550	1.300	1.300
30	0.550	0.550	1.400	1.350
35	0.550	0.550	1.500	1.390
40	0.590	0.550	1.600	1.440
45	0.700	0.550	1.700	1.480
50	0.810	0.600	1.800	1.530
55	0.910	0.700	1.900	1.570
60	1.010	0.750	2.000	1.620
65	1.125	0.800	2.100	1.660
70	1.230	0.900	2.200	1.710
75	1.330	1.000	2.300	1.750
80	1.450	1.200	2.400	1.800
85	1.550	1.300	2.500	1.840
90	1.650	1.346	2.600	1.890
95	1.686	1.391		1.930
100	1.723	1.441		1.980
105	1.762	1.493		2.020
110	1.800	1.545		2.070
115	1.838	1.597		2.110
120	1.877	1.648		2.160
125	1.914	1.700		2.200
130	1.950	1.717		2.250
135	1.986	1.733		2.290
140	2.023	1.750		2.340
145	2.062	1.767		2.380
150	2.100	1.783		2.430
155	2.128	1.800		2.470
160	2.156	1.833		2.520
165	2.183	1.867		2.560
170	2.212	1.900		2.610
175	2.241	1.933		2.650
180	2.271	1.967		2.700
185	2.300	2.000		2.740
190	2.422	2.029		2.780
195	2.533	2.057		2.820
200	2.650	2.086		2.860
205	2.775	2.114		2.900
210	2.889	2.143		2.940
215	3.000	2.171		2.980
220	3.077	2.200		3.020
225	3.154	2.267		3.060
230	3.233	2.333		3.100
235	3.317	2.400		3.140
240	3.400	2.467		3.180
245		2.533		3.220
250		2.600		3.260
255		2.656		3.300
260		2.711		
265		2.767		
270		2.824		
275		2.882		
280		2.941		
285		3.000		

* Table applies to beams with concrete slab

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Fire resistance period 120 mins				
Hp/A [m-1]	I-Section Columns & Beams	I-Section Beams	RHS & CHS Columns	RHS Beams
	[4- sided]	[3- sided]	[4- sided]	[3- sided]
	550°C	620°C *	520 °C	590 °C *
up to 25	1.000	1.000	1.300	2.570
30	1.083	1.063	1.400	2.570
35	1.180	1.129	2.700	2.570
40	1.267	1.200	2.720	2.570
45	1.350	1.263	2.760	2.570
50	1.433	1.329	2.790	2.570
55	1.520	1.400	2.830	2.570
60	1.617	1.463	2.860	2.570
65	1.700	1.529	2.900	2.570
70	1.783	1.600	2.930	2.570
75	1.880	1.663	2.970	2.570
80	1.967	1.729	3.000	2.570
85	2.050	1.800		2.570
90	2.133	1.863		2.570
95	2.220	1.929		2.570
100	2.317	2.000		2.570
105	2.400	2.063		2.570
110	2.525	2.129		2.570
115	2.644	2.200		2.570
120	2.756	2.263		2.630
125	2.875	2.329		2.700
130	3.000	2.400		2.770
135	3.050	2.483		2.830
140	3.100	2.567		2.900
145	3.150	2.650		2.970
150	3.200	2.733		3.030
155	3.250	2.818		3.100
160	3.300	2.909		3.170
165	3.350	3.000		3.230
170	3.400	3.083		3.300
175		3.167		
180		3.246		
185		3.323		
190		3.400		

* Table applies to beams with concrete slab

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SPRAYFILM WB3

1. Product description
Water based intumescent coating

2. Manufacturer
CAFCO INTERNATIONAL
Bluebell Close, Clover Nook Industrial Park, Alfreton, Derbyshire DE55 4RA
T: 01773 837900
F: 01773 836710 W: www.cafcointl.com

3. Availability
Supply and fix service by recognised applicators. Details from the manufacturer

4. Nominal specific gravity (g/ml)
Basecoat: 1.35 g/ml

5. Wet coverage rate
Basecoat:

25m2 per 25kg pail at 0.5mm dft

6. Appearance
White with a slight sheen. Decorative topseals may be applied as required. Contact manufacturer for details of topseal

7. On site use
Internal applications

8. Durability
Good resistance to impact and abrasion

Durometer hardness: 80 shoreD (tested to ASTM D2240)

Impact resistance: 0.18kg/m (tested to ASTM D2794)

Abrasion resistance: 0.6505g/1000 cycles (tested to ASTM D4060)

9. Performance in other BS and EN tests
Manufactured in accordance with ISO 9000 requirements

10. Other applications
Fully tested to UL standards

Tested to various European standards

a) Protection technique
Profile

b) Application technique
Airless spray, roller or brush

c) Specification of system
Blast clean to SA 2½ (preferred) or remove millscale with wire brush and degrease
Apply compatible primer
Apply SprayFilm WB3 to the required thickness (see tables)
Apply a decorative topseal if required.

SPRAYFILM WB3

Universal beams (3 sided exposure)				
Critical temperature 620°C				
	dft	dft	dft	dft
Section factor	30 mins	60 mins	90 mins	120 min
40	0.23	0.25	1.20	1.20
45	0.23	0.25	1.20	1.20
50	0.23	0.25	1.20	1.20
55	0.23	0.25	1.20	1.20
60	0.23	0.25	1.20	1.20
65	0.23	0.25	1.20	1.20
70	0.23	0.25	1.20	1.20
75	0.23	0.25	1.20	1.20
80	0.23	0.27	1.20	1.23
85	0.23	0.28	1.20	1.32
90	0.23	0.30	1.20	1.40
95	0.23	0.32	1.20	1.48
100	0.23	0.34	1.20	1.70
105	0.23	0.36	1.20	1.95
110	0.23	0.38	1.20	2.05
115	0.23	0.40	1.20	2.11
120	0.23	0.42	1.20	2.17
125	0.23	0.44	1.20	2.23
130	0.23	0.46	1.20	2.29
135	0.23	0.48	1.20	2.35
140	0.23	0.50	1.20	2.41
145	0.23	0.52	1.20	2.47
150	0.23	0.54	1.26	2.53
155	0.23	0.56	1.31	2.59
160	0.23	0.57	1.37	2.65
165	0.23	0.57	1.42	2.71
170	0.23	0.57	1.48	2.77
175	0.23	0.61	1.58	2.83
180	0.23	0.64	1.70	2.89
185	0.23	0.67	1.83	2.95
190	0.23	0.70	1.95	3.01
195	0.23	0.73	2.02	3.40
200	0.23	0.76	2.07	3.73
205	0.23	0.80	2.11	4.07
210	0.23	0.83	2.15	4.26
215	0.24	0.86	2.19	4.48
220	0.24	0.88	2.23	4.70
225	0.24	0.89	2.27	4.91
230	0.24	0.91	2.31	5.13
235	0.24	0.93	2.36	5.35
240	0.25	0.94	2.40	5.57
245	0.25	0.96	2.44	5.78
250	0.25	0.97	2.48	6.00
255	0.25	0.99	2.52	6.22
260	0.25	1.00	2.56	6.43
265	0.26	1.02	2.60	

Universal beams (3 sided exposure)				
Critical temperature 620°C				
	dft	**dft**	**dft**	**dft**
Section factor	**30 mins**	**60 mins**	**90 mins**	**120 min**
270	0.26	1.04	2.64	
275	0.27	1.05	2.69	
280	0.28	1.07	2.73	
285	0.28	1.08	2.77	
290	0.29	1.10	2.81	
295	0.29	1.11	2.85	
300	0.30	1.13	2.89	
305	0.30	1.14	2.93	
310	0.31	1.16	2.98	
315	0.31	1.18	3.02	
320	0.32	1.19	3.22	

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Universal beams (4sided exposure)				
Critical temperature 550°C				
	dft	dft	dft	dft
Section factor	**30 mins**	**60 mins**	**90 mins**	**120 min**
40	0.23	0.57	1.20	1.20
45	0.23	0.57	1.20	1.20
50	0.23	0.57	1.20	1.20
55	0.23	0.57	1.20	1.22
60	0.23	0.57	1.20	1.33
65	0.23	0.57	1.20	1.44
70	0.23	0.57	1.20	1.53
75	0.23	0.57	1.20	1.82
80	0.23	0.57	1.20	2.05
85	0.23	0.57	1.20	2.09
90	0.23	0.57	1.20	2.17
95	0.23	0.57	1.20	2.25
100	0.23	0.57	1.20	2.33
105	0.23	0.57	1.21	2.41
110	0.23	0.57	1.27	2.48
115	0.23	0.57	1.33	2.56
120	0.23	0.57	1.38	2.64
125	0.23	0.57	1.44	2.72
130	0.23	0.63	1.50	2.80
135	0.23	0.68	1.63	2.88
140	0.23	0.74	1.76	2.95
145	0.23	0.79	1.89	3.03
150	0.23	0.85	2.03	3.24
155	0.23	0.88	2.06	3.41
160	0.23	0.90	2.12	3.59
165	0.23	0.91	2.17	3.76
170	0.23	0.93	2.22	3.93
175	0.24	0.95	2.27	4.13
180	0.24	0.96	2.33	4.36
185	0.24	0.98	2.38	4.58

Universal beams (4sided exposure)				
Critical temperature 550°C				
	dft	dft	dft	dft
Section factor	**30 mins**	**60 mins**	**90 mins**	**120 min**
190	0.24	1.00	2.43	4.80
195	0.24	1.01	2.48	5.02
200	0.25	1.03	2.54	5.24
205	0.25	1.05	2.59	5.47
210	0.25	1.07	2.64	5.69
215	0.25	1.08	2.69	5.91
220	0.26	1.10	2.75	6.13
225	0.27	1.12	2.80	6.36
230	0.27	1.13	2.85	6.58
235	0.28	1.15	2.91	
240	0.29	1.17	2.96	
245	0.30	1.18	3.01	
250	0.30	1.20	3.18	
255	0.31	1.22	3.32	
260	0.32	1.25	3.47	
265	0.32	1.27	3.62	
270	0.33	1.30	3.76	
275	0.34	1.32	3.91	
280	0.35	1.34	4.06	
285	0.35	1.37	4.18	
290	0.36	1.39	4.30	
295	0.37	1.41	4.43	
300	0.38	1.44	4.56	
305	0.38	1.46	4.68	
310	0.39	1.49	4.81	
315	0.40	1.51	4.94	
320	0.40	1.54	5.06	

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Universal columns (4 sided exposure)				
Critical temperature 550°C				
	dft	dft	dft	dft
Section factor	**30 mins**	**60 mins**	**90 mins**	**120 min**
40	0.23	0.60	1.00	1.50
45	0.23	0.60	1.00	1.50
50	0.23	0.60	1.00	1.50
55	0.23	0.60	1.00	1.50
60	0.23	0.60	1.00	1.50
65	0.23	0.60	1.00	1.50
70	0.23	0.60	1.00	1.75
75	0.23	0.60	1.00	2.00
80	0.23	0.60	1.00	2.07
85	0.23	0.60	1.00	2.14
90	0.23	0.60	1.01	2.21
95	0.23	0.60	1.10	2.29
100	0.23	0.60	1.19	2.36
105	0.23	0.60	1.28	2.43

Universal columns (4 sided exposure)				
Critical temperature 550°C				
	dft	dft	dft	dft
Section factor	**30 mins**	**60 mins**	**90 mins**	**120 min**
110	0.23	0.60	1.36	2.50
115	0.23	0.60	1.45	2.57
120	0.23	0.60	1.53	2.64
125	0.23	0.66	1.61	2.71
130	0.23	0.71	1.69	2.79
135	0.23	0.75	1.77	2.86
140	0.23	0.80	1.85	2.93
145	0.23	0.85	1.94	3.00
150	0.23	0.87	2.02	3.19
155	0.23	0.88	2.05	3.37
160	0.24	0.89	2.10	3.56
165	0.24	0.90	2.14	3.74
170	0.24	0.90	2.18	3.93
175	0.24	0.91	2.23	4.13
180	0.24	0.92	2.27	4.36
185	0.25	0.92	2.32	4.58
190	0.25	0.93	2.36	4.80
195	0.25	0.94	2.40	5.02
200	0.25	0.95	2.45	5.24
205	0.25	0.95	2.49	5.47
210	0.26	0.96	2.54	5.69
215	0.26	0.97	2.58	5.91
220	0.27	0.97	2.62	6.13
225	0.27	0.98	2.67	6.36
230	0.28	0.99	2.71	6.58
235	0.28	1.00	2.75	
240	0.29	1.00	2.80	
245	0.29	1.04	2.84	
250	0.30	1.06	2.89	
255	0.30	1.09	2.93	
260	0.31	1.12	2.97	
265	0.31	1.14	3.02	
270	0.32	1.17	3.14	
275	0.32	1.19	3.24	
280	0.33	1.22	3.34	
285	0.33	1.25	3.44	
290	0.34	1.27	3.54	
295	0.34	1.30	3.64	
300	0.35	1.33	3.74	
305	0.35	1.35	3.84	
310	0.36	1.38	3.94	
315	0.36	1.41	4.04	
320	0.37	1.43	4.32	

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SPRAYFILM WB3

Hollow section columns (4sided exposure)				
Critical temperature 532°C				
Section factor – m^{-1}	Coating thickness - mm			
	30 mins	**60 mins**	**90 mins**	**120 min**
40	0.23	0.4	1.8	3.5
45	0.23	0.4	1.8	3.5
50	0.23	0.41	1.8	3.5
55	0.23	0.44	1.8	3.5
60	0.23	0.46	1.8	3.5
65	0.23	0.48	1.9	3.5
70	0.23	0.5	2	3.5
75	0.24	0.52	2.1	3.5
80	0.24	0.55	2.2	3.5
85	0.25	0.57	2.3	3.5
90	0.25	0.59	2.4	3.5
95	0.26	0.64	2.5	3.5
100	0.27	0.71	2.56	3.64
105	0.28	0.79	2.61	3.97
110	0.3	0.86	2.67	4.31
115	0.31	0.93	2.72	4.65
120	0.32	1	2.78	4.99
125	0.33	1.03	2.83	5.32
130	0.35	1.06	2.89	5.66
135	0.36	1.1	2.94	6
140	0.37	1.13	3	6.34
145	0.38	1.16	3.06	-
150	0.4	1.19	3.11	-
155	0.4	1.23	3.17	-
160	0.41	1.26	3.22	-
165	0.41	1.29	3.28	-
170	0.42	1.32	3.33	-
175	0.42	1.35	3.39	-
180	0.43	1.39	3.44	-
185	0.43	1.42	3.5	-
190	0.44	1.45	3.65	-
195	0.44	1.48	3.79	-
200	0.45	1.52	3.94	-
205	0.45	1.55	4.09	-
210	0.46	1.58	4.24	-
215	0.47	1.61	4.38	-
220	0.47	1.65	4.53	-
225	0.48	1.68	4.68	-
230	0.48	1.71	4.82	-
235	0.49	1.74	4.97	-
240	0.49	1.77	5.12	-
245	0.5	1.81	5.26	-
250	0.5	1.9	5.41	-

Hollow section columns (4sided exposure)				
Critical temperature 532°C				
Section factor – m^{-1}	Coating thickness - mm			
	30 mins	**60 mins**	**90 mins**	**120 min**
255	0.51	1.98	5.56	-
260	0.51	2.07	5.71	-
265	0.52	2.15	5.85	-
270	0.52	2.23	6	-
275	0.53	2.32	6.15	-
280	0.53	2.4	6.29	-
285	0.54	2.48	6.44	-
290	0.54	2.56	6.59	-
295	0.55	2.63	-	-
300	0.55	2.7	-	-
305	0.56	2.77	-	-
310	0.56	2.84	-	-
315	0.57	2.91	-	-
320	0.57	2.98	-	-

This product is certified by a 3rd Party Certification body accredited to ISO Guide 65
The data provided complies with the principles of the ASFP/BCF/ICF industry Guidance and Sections 3 and 5 or 6 of this Yellow Book

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STEELGUARD FM549

1. Product description
Thin film intumescent coating for internal and semi-exposed structural steelwork with decorative topseal range.

2. Manufacturer
PPG INDUSTRIES (UK) LIMITED
Micro House, Station Approach, Wood Street North, Alfreton, DE55 7JR
T: 01773 837300
F: 01773 837302 W: www.ppgpmc.com

3. Availability
Supplied direct from the manufacturer or distributor network

4. Nominal specific gravity
Nominal Density 1.3 kg/l

Nominal Volume Solids 68% +/- 3%

5. Wet coverage rate
Theoretical coverage 0.97 square metres/litres at 700 microns (typical dft)

6. Appearance
White, matt when dry

Decorative topseals available in full Ral & BS4800 colour range including metallic & MIO shades

7. On site use
Normally used for on site application by airless spray. VOC compliant as an intumescent coating in accordance with PG6/23. Can be left up to 4 weeks externally plus up to 8 weeks in sheltered areas without a topseal.

8. Durability
The Steelguard FM549 system has been successfully fire tested after extensive accelerated testing and natural ageing. Good impact and abrasion resistance.

9. Performance in other BS tests
Manufactured in accordance with BS EN ISO 9001

10. Other applications
Alternative critical temperature data available on request, also tested and approved in various European Countries

a) Protection technique
Profile

b) Application technique
Airless spray or brush

c) Specification of system
Application - Surface temperature min 5°C max 50°C and max. humidity of 85%

- Abrasive blast clean to ISO 8501-1 Sa 2½. The blast profile achieved should be approximately 75 microns and should not exceed 100 microns.
- Apply PPG approved primer - please consult manufacturer for individual project recommendations
- Apply Steelguard FM549 - see thickness table.
- Apply topseal if necessary - no topseal required for dry internal C1 conditions (ISO 12944) - please consult manufacturer for individual project recommendations
- Steelguard FM549 can be left externally without a topseal for up to 1 month. During this period, however, Steelguard FM549 must be protected from pooling water, hot humid environments or immersed conditions.
- Refer to Steelguard FM549 product data sheet before using.

STEELGUARD FM549

30 minute loading Requirements (mm)						
Section Factor A/V m^{-1}	3 sided I beam	4 sided I beam	4 sided I column	CHS Column	RHS 4 sided column	RHS 3 sided Beam
40	0.25	0.25	0.25	0.25	0.25	0.25
45	0.25	0.25	0.25	0.25	0.25	0.25
50	0.25	0.25	0.25	0.25	0.25	0.25
55	0.25	0.25	0.25	0.25	0.25	0.25
60	0.25	0.25	0.25	0.25	0.25	0.25
65	0.25	0.25	0.25	0.28	0.28	0.25
70	0.25	0.25	0.25	0.30	0.30	0.25
75	0.25	0.25	0.25	0.30	0.33	0.25
80	0.25	0.25	0.25	0.30	0.35	0.25
85	0.25	0.25	0.25	0.33	0.38	0.25
90	0.25	0.25	0.25	0.35	0.40	0.25
95	0.25	0.25	0.25	0.38	0.43	0.25
100	0.25	0.25	0.25	0.40	0.45	0.25
105	0.25	0.25	0.25	0.43	0.48	0.25
110	0.25	0.25	0.25	0.45	0.50	0.25
115	0.25	0.25	0.25	0.48	0.53	0.25
120	0.25	0.25	0.25	0.50	0.55	0.25
125	0.25	0.25	0.25	0.53	0.58	0.28
130	0.25	0.25	0.25	0.55	0.60	0.30
135	0.25	0.25	0.25	0.58	0.63	0.30
140	0.25	0.25	0.25	0.60	0.65	0.30
145	0.25	0.25	0.25	0.60	0.68	0.33
150	0.25	0.25	0.25	0.60	0.70	0.35
155	0.25	0.25	0.25	0.63	0.73	0.35
160	0.25	0.25	0.25	0.65	0.75	0.35
165	0.25	0.25	0.25	0.68	0.78	0.38
170	0.25	0.25	0.25	0.70	0.80	0.40
175	0.28	0.25	0.25	0.73	0.83	0.40
180	0.30	0.25	0.25	0.75	0.85	0.40
185	0.30	0.25	0.25	0.78	0.88	0.43
190	0.30	0.25	0.25	0.80	0.90	0.45
195	0.30	0.25	0.25	0.83	0.93	0.45
200	0.30	0.25	0.25	0.85	0.95	0.45
205	0.30	0.25	0.25	0.88	0.98	0.48
210	0.30	0.25	0.25	0.90	1.00	0.50
215	0.30	0.28	0.28	0.90	1.05	0.50
220	0.30	0.30	0.30	0.90	1.10	0.50
225	0.33	0.30	0.30	0.93	1.15	0.53
230	0.35	0.30	0.30	0.95	1.20	0.55
235	0.35	0.30	0.30	0.98	1.25	0.58
240	0.35	0.30	0.30	1.00	1.30	0.60
245	0.35	0.33	0.33	1.03	1.35	0.63
250	0.35	0.35	0.35	1.05	1.40	0.65
255	0.35	0.35	0.35	1.10	1.45	0.68
260	0.35	0.35	0.35	1.15	1.50	0.70
265	0.35	0.35	0.35	1.20	1.55	0.73
270	0.35	0.35	0.35	1.25	1.60	0.75
275	0.35	0.35	0.35	1.30	1.65	0.78
280	0.35	0.35	0.35	1.35	1.70	0.80
285	0.35	0.38	0.38	1.40	1.78	0.83
290	0.35	0.40	0.40	1.45	1.85	0.85
295	0.35	0.40	0.40	1.50	1.90	0.88

30 minute loading Requirements (mm)						
Section Factor A/V m^{-1}	3 sided I beam	4 sided I beam	4 sided I column	CHS Column	RHS 4 sided column	RHS 3 sided Beam
300	0.35	0.40	0.40	1.55	1.95	0.90
305	0.38	0.40	0.40	1.60	2.00	0.93
310	0.40	0.40	0.40	1.65	2.05	0.95
315	0.40	0.40	0.40	1.70	2.10	0.98
320	0.40	0.40	0.40	1.75	2.15	1.00

Note

1. Interpolation of loading requirements for A/V values between those stated above is acceptable. For A/V values outside this range consult PPG.
2. Figures above are dry film thickness in mm and do not include primer.
3. Consult PPG for advice on A/V for both standard & non-standard steel section sizes.

Calculation of A/V Values

The section factor A/V (Hp/A) of a steel member is calculated by dividing the perimeter of steel section exposed to fire (in metres) by its cross sectional area at that point (in square metres).

Notes

3 sided beam loadings assume the section to be supporting a dense aggregate concrete slab. For composite beams supporting steel deck floors thickness should be modified in line with ASFP "Yellow book" recommendations as referred in Building Regulations Approved Doc. B

Quoted loadings assume critical temperatures of 550°C for 4 sided I beams and columns, 500°C for 4 sided SHS/RHS columns, 550°C for CHS columns, 620°C for 3 sided I beams and 575°C for 3 sided SHS/RHS beams. Loadings for calculated critical temperatures outside this range are available from PPG.

Primer shall be supplied by PPG. Consult your PPG representative for compatibility advice on other manufacturers primers.

The data provided complies with the principles of the ASFP/BCF/ICF industry Guidance and Sections 3 and 5 or 6 of this Yellow Book

STEELGUARD FM549

60 minute loading Requirements (mm)						
Section Factor A/V m^{-1}	3 sided I beam	4 sided I beam	4 sided I column	CHS Column	RHS 4 sided column	RHS 3 sided Beam
40	0.25	0.40	0.40	0.45	0.60	0.25
45	0.25	0.43	0.43	0.50	0.68	0.28
50	0.25	0.45	0.45	0.55	0.75	0.30
55	0.25	0.45	0.45	0.60	0.83	0.35
60	0.25	0.45	0.45	0.65	0.90	0.40
65	0.28	0.48	0.48	0.73	0.98	0.43
70	0.30	0.50	0.50	0.80	1.05	0.45
75	0.30	0.53	0.53	0.85	1.13	0.48
80	0.30	0.55	0.55	0.90	1.20	0.50
85	0.33	0.55	0.55	0.95	1.28	0.55
90	0.35	0.55	0.55	1.00	1.35	0.60
95	0.35	0.58	0.58	1.08	1.43	0.63
100	0.35	0.60	0.60	1.15	1.50	0.65
105	0.38	0.63	0.63	1.20	1.58	0.68
110	0.40	0.65	0.65	1.25	1.65	0.70
115	0.43	0.65	0.65	1.30	1.73	0.75
120	0.45	0.65	0.65	1.35	1.80	0.80
125	0.45	0.68	0.68	1.43	1.88	0.83
130	0.45	0.70	0.70	1.50	1.95	0.85
135	0.48	0.73	0.73	1.58	2.03	0.90
140	0.50	0.75	0.75	1.65	2.10	0.95
145	0.50	0.78	0.78	1.75	2.20	1.00
150	0.50	0.80	0.80	1.85	2.30	1.05
155	0.53	0.85	0.85	1.95	2.38	1.23
160	0.55	0.90	0.90	2.05	2.45	1.40
165	0.55	0.93	0.93	2.15	2.53	1.50
170	0.55	0.95	0.95	2.25	2.60	1.60
175	0.58	1.00	1.00	2.35	2.68	1.63
180	0.60	1.05	1.05	2.45	2.75	1.65
185	0.60	1.10	1.10	2.53	2.85	1.68
190	0.60	1.15	1.15	2.60	2.95	1.70
195	0.63	1.18	1.18	2.83	3.23	1.73
200	0.65	1.20	1.20	3.05	3.50	1.75
205	0.68	1.25	1.25	3.28	3.85	1.78
210	0.70	1.30	1.30	3.50	4.20	1.80
215	0.73	1.35	1.35	3.70	-	1.83
220	0.75	1.40	1.40	3.90	-	1.85
225	0.80	1.43	1.43	4.10	-	1.88
230	0.85	1.45	1.45	4.30	-	1.90
235	0.88	1.53	1.53	4.48	-	1.93
240	0.90	1.60	1.60	4.65	-	1.95
245	0.95	1.65	1.65	-	-	1.98
250	1.00	1.70	1.70	-	-	2.00
255	1.05	1.73	1.73	-	-	2.03
260	1.10	1.75	1.75	-	-	2.05
265	1.13	1.78	1.78	-	-	2.08
270	1.15	1.80	1.80	-	-	2.10
275	1.20	1.80	1.80	-	-	2.13
280	1.25	1.80	1.80	-	-	2.15
285	1.28	1.83	1.83	-	-	-
290	1.30	1.85	1.85	-	-	-

60 minute loading Requirements (mm)						
Section Factor A/V m^{-1}	3 sided I beam	4 sided I beam	4 sided I column	CHS Column	RHS 4 sided column	RHS 3 sided Beam
295	1.35	1.88	1.88	-	-	-
300	1.40	1.90	1.90	-	-	-
305	1.45	1.93	1.93	-	-	-
310	1.50	1.95	1.95	-	-	-
315	1.55	1.98	1.98	-	-	-
320	1.60	2.00	2.00	-	-	-

Note

1. Interpolation of loading requirements for A/V values between those stated above is acceptable. For A/V values outside this range consult PPG.
2. Figures above are dry film thickness in mm and do not include primer.
3. Consult PPG for advice on A/V for both standard & non-standard steel section sizes.

Calculation of A/V Values

The section factor A/V (Hp/A) of a steel member is calculated by dividing the perimeter of steel section exposed to fire (in metres) by its cross sectional area at that point (in square metres).

Notes

3 sided beam loadings assume the section to be supporting a dense aggregate concrete slab. For composite beams supporting steel deck floors thickness should be modified in line with ASFP "Yellow book" recommendations as referred in Building Regulations Approved Doc. B

Quoted loadings assume critical temperatures of 550°C for 4 sided I beams and columns, 500°C for 4 sided SHS/RHS columns, 550°C for CHS columns, 620°C for 3 sided I beams and 575°C for 3 sided SHS/RHS beams. Loadings for calculated critical temperatures outside this range are available from PPG.

Primer shall be supplied by PPG. Consult your PPG representative for compatibility advice on other manufacturers primers.

The data provided complies with the principles of the ASFP/BCF/ICF industry Guidance and Sections 3 and 5 or 6 of this Yellow Book

STEELGUARD FM549

90 minute loading Requirements (mm)						
Section Factor A/V m^{-1}	3 sided I beam	4 sided I beam	4 sided I column	CHS Column	RHS 4 sided column	RHS 3 sided Beam
40	0.40	0.50	0.50	1.60	2.00	0.55
45	0.44	0.58	0.58	1.83	2.05	0.60
50	0.48	0.65	0.65	2.05	2.17	0.65
55	0.52	0.73	0.73	2.25	2.26	0.73
60	0.56	0.80	0.80	2.45	2.34	0.80
65	0.60	0.85	0.85	2.60	2.45	0.88
70	0.65	0.90	0.90	2.75	2.51	0.95
75	0.69	0.98	0.98	2.93	2.60	1.03
80	0.73	1.05	1.05	3.10	3.00	1.10
85	0.77	1.13	1.13	3.25	3.40	1.15
90	0.81	1.20	1.20	3.40	3.80	1.20
95	0.85	1.28	1.28	3.58	4.20	1.28
100	0.89	1.35	1.35	3.75	4.60	1.35
105	0.93	1.40	1.40	3.90	-	1.43
110	0.97	1.45	1.45	4.05	-	1.50
115	1.01	1.53	1.53	4.23	-	1.58
120	1.06	1.60	1.60	4.40	-	1.65
125	1.10	1.68	1.68	-	-	1.70
130	1.14	1.75	1.75	-	-	1.75
135	1.18	1.90	1.90	-	-	1.80
140	1.22	2.05	2.05	-	-	1.85
145	1.26	2.18	2.18	-	-	1.90
150	1.30	2.30	2.30	-	-	1.95
155	1.35	2.43	2.43	-	-	1.98
160	1.39	2.55	2.55	-	-	2.00
165	1.44	2.63	2.63	-	-	2.05
170	1.49	2.70	2.70	-	-	2.10
175	1.54	2.78	2.78	-	-	2.13
180	1.59	2.85	2.85	-	-	2.15
185	1.64	2.90	2.90	-	-	-
190	1.69	2.95	2.95	-	-	-
195	1.74	2.98	2.98	-	-	-
200	1.79	3.00	3.00	-	-	-
205	1.85	3.05	3.05	-	-	-
210	1.90	3.10	3.10	-	-	-
215	1.95	3.13	3.13	-	-	-
220	2.00	3.15	3.15	-	-	-
225	2.05	3.18	3.18	-	-	-
230	2.10	3.20	3.20	-	-	-
235	2.15	3.23	3.23	-	-	-
240	2.20	3.25	3.25	-	-	-
245	2.25	3.30	3.30	-	-	-
250	2.30	3.35	3.35	-	-	-
255	2.33	3.38	3.38	-	-	-
260	2.35	3.40	3.40	-	-	-
265	2.40	3.43	3.43	-	-	-
270	2.45	3.45	3.45	-	-	-
275	2.48	3.50	3.50	-	-	-
280	2.50	3.55	3.55	-	-	-

Note

1. Interpolation of loading requirements for A/V values between those stated above is acceptable. For A/V values outside this range consult PPG.

2. Figures above are dry film thickness in mm and do not include primer.

3. Consult PPG for advice on A/V for both standard & non-standard steel section sizes.

Calculation of A/V Values

The section factor A/V (Hp/A) of a steel member is calculated by dividing the perimeter of steel section exposed to fire (in metres) by its cross sectional area at that point (in square metres).

Notes

3 sided beam loadings assume the section to be supporting a dense aggregate concrete slab. For composite beams supporting steel deck floors thickness should be modified in line with ASFP "Yellow book" recommendations as referred in Building Regulations Approved Doc. B

Quoted loadings assume critical temperatures of 550°C for 4 sided I beams and columns, 500°C for 4 sided SHS/RHS columns, 550°C for CHS columns, 620°C for 3 sided I beams and 575°C for 3 sided SHS/RHS beams. Loadings for calculated critical temperatures outside this range are available from PPG.

Primer shall be supplied by PPG. Consult your PPG representative for compatibility advice on other manufacturers primers.

The data provided complies with the principles of the ASFP/BCF/ICF industry Guidance and Sections 3 and 5 or 6 of this Yellow Book

STEELGUARD FM549

120 minute loading Requirements (mm)						
Section Factor A/V m^{-1}	3 sided I beam	4 sided I beam	4 sided I column	CHS Column	RHS 4 sided column	RHS 3 sided Beam
15	0.90	1.71	1.71	1.20	1.02	
20	0.90	1.71	1.71	1.60	1.36	
25	0.90	1.71	1.71	1.99	1.70	
30	0.90	1.71	1.71	2.18	1.86	-
35	0.90	1.71	1.71	2.54	2.17	-
40	0.90	1.71	1.71	2.90	2.60	-
45	0.95	1.71	1.71	3.25	2.90	-
50	1.00	1.71	1.71	3.60	-	-
55	1.06	1.71	1.71	3.98	-	-
60	1.11	1.71	1.71	4.35	-	-
65	1.16	1.71	1.71	-	-	-
70	1.21	1.71	1.71	-	-	-
75	1.27	1.77	1.77	-	-	-
80	1.32	1.85	1.85	-	-	-
85	1.45	1.92	1.92	-	-	-
90	1.72	2.00	2.00	-	-	-
95	1.98	2.07	2.07	-	-	-
100	2.25	2.15	2.15	-	-	-
105	2.38	2.22	2.22	-	-	-
110	2.50	2.30	2.30	-	-	-
115	-	2.38	2.38	-	-	-
120	-	2.45	2.45	-	-	-
125	-	2.53	2.53	-	-	-
130	-	2.60	2.60	-	-	-
135	-	2.68	2.68	-	-	-
140	-	2.75	2.75	-	-	-
145	-	2.80	2.80	-	-	-
150	-	2.91	2.91	-	-	-

Note

1. Interpolation of loading requirements for A/V values between those stated above is acceptable. For A/V values outside this range consult PPG.
2. Figures above are dry film thickness in mm and do not include primer.
3. Consult PPG for advice on A/V for both standard & non-standard steel section sizes.

Calculation of A/V Values

The section factor A/V (Hp/A) of a steel member is calculated by dividing the perimeter of steel section exposed to fire (in metres) by its cross sectional area at that point (in square metres).

Notes

3 sided beam loadings assume the section to be supporting a dense aggregate concrete slab. For composite beams supporting steel deck floors thickness should be modified in line with ASFP "Yellow book" recommendations as referred in Building Regulations Approved Doc. B

Quoted loadings assume critical temperatures of 550°C for 4 sided I beams and columns, 500°C for 4 sided SHS/RHS columns, 550°C for CHS columns, 620°C for 3 sided I beams and 575°C for 3 sided SHS/RHS beams. Loadings for calculated critical temperatures outside this range are available from PPG.

Primer shall be supplied by PPG. Consult your PPG representative for compatibility advice on other manufacturers primers.

The data provided complies with the principles of the ASFP/BCF/ICF industry Guidance and Sections 3 and 5 or 6 of this Yellow Book

STEELGUARD FM550

1. Product description

Thin film intumescent coating for internal and external structural steelwork with decorative topseal range. Steelguard FM560 faster drying off site grade is also available.

2. Manufacturer

PPG INDUSTRIES (UK) LIMITED
Micro House, Station Approach, Wood Street North, Alfreton, DE55 7JR
T: 01773 837300
F: 01773 837302 W: www.ppgpmc.com

3. Availability

Supplied direct from the manufacturer or distributor network

4. Nominal specific gravity

Nominal Density 1.3 kg/l

Nominal Volume Solids 68 +/- 3%

5. Wet coverage rate

Theoretical coverage 0.97 square metres/litres at 700 microns (typical dft)

6. Appearance

White or grey, matt when dry

Decorative topseals available in full Ral & BS4800 colour range including metallic & MIO shades

7. On site use

Normally used for on site application by airless spray. VOC compliant as an intumescent coating in accordance with PG6/23. Can be left up to 52 weeks externally without a topseal.

8. Durability

The Steelguard FM550 system has been successfully fire tested after extensive accelerated testing and natural ageing. Good impact and abrasion resistance.

9. Performance in other BS tests

Manufactured in accordance with BS EN ISO 9001

10. Other applications

Alternative critical temperature data available on request, also tested and approved in various European Countries

a) Protection technique
Profile

b) Application technique
Airless spray or brush

c) Specification of system
Application - Surface temperature min 5°C max 50°C and max. humidity of 85%

Abrasive blast clean to ISO 8501-1 Sa 2½. The blast profile achieved should be approximately 75 microns and should not exceed 100 microns.

Apply PPG approved primer - please consult manufacturer for individual project recommendations

Apply Steelguard FM550 - see thickness table.

Apply topseal if necessary - no topseal required for dry internal C1 conditions (ISO 12944) - please consult manufacturer for individual project recommendations

Steelguard FM550 can be left externally without a topseal for up to 52 weeks. During this period, however, Steelguard FM550 must be protected from pooling water, hot humid environments or immersed conditions.

Refer to Steelguard FM550 product data sheet before using.

STEELGUARD FM550

30 minute loading Requirements (mm)						
Section Factor A/V m^{-1}	3 sided I beam	4 sided I beam	4 sided I column	CHS Column	RHS 4 sided column	RHS 3 sided Beam
40	0.25	0.25	0.25	0.25	0.25	0.25
45	0.25	0.25	0.25	0.25	0.25	0.25
50	0.25	0.25	0.25	0.25	0.25	0.25
55	0.25	0.25	0.25	0.25	0.25	0.25
60	0.25	0.25	0.25	0.25	0.25	0.25
65	0.25	0.25	0.25	0.28	0.28	0.25
70	0.25	0.25	0.25	0.30	0.30	0.25
75	0.25	0.25	0.25	0.30	0.33	0.25
80	0.25	0.25	0.25	0.30	0.35	0.25
85	0.25	0.25	0.25	0.33	0.38	0.25
90	0.25	0.25	0.25	0.35	0.40	0.25
95	0.25	0.25	0.25	0.38	0.43	0.25
100	0.25	0.25	0.25	0.40	0.45	0.25
105	0.25	0.25	0.25	0.43	0.48	0.25
110	0.25	0.25	0.25	0.45	0.50	0.25
115	0.25	0.25	0.25	0.48	0.53	0.25
120	0.25	0.25	0.25	0.50	0.55	0.25
125	0.25	0.25	0.25	0.53	0.58	0.28
130	0.25	0.25	0.25	0.55	0.60	0.30
135	0.25	0.25	0.25	0.58	0.63	0.30
140	0.25	0.25	0.25	0.60	0.65	0.30
145	0.25	0.25	0.25	0.60	0.68	0.33
150	0.25	0.25	0.25	0.60	0.70	0.35
155	0.25	0.25	0.25	0.63	0.73	0.35
160	0.25	0.25	0.25	0.65	0.75	0.35
165	0.25	0.25	0.25	0.68	0.78	0.38
170	0.25	0.25	0.25	0.70	0.80	0.40
175	0.28	0.25	0.25	0.73	0.83	0.40
180	0.30	0.25	0.25	0.75	0.85	0.40
185	0.30	0.25	0.25	0.78	0.88	0.43
190	0.30	0.25	0.25	0.80	0.90	0.45
195	0.30	0.25	0.25	0.83	0.93	0.45
200	0.30	0.25	0.25	0.85	0.95	0.45
205	0.30	0.25	0.25	0.88	0.98	0.48
210	0.30	0.25	0.25	0.90	1.00	0.50
215	0.30	0.28	0.28	0.90	1.05	0.50
220	0.30	0.30	0.30	0.90	1.10	0.50
225	0.33	0.30	0.30	0.93	1.15	0.53
230	0.35	0.30	0.30	0.95	1.20	0.55
235	0.35	0.30	0.30	0.98	1.25	0.58
240	0.35	0.30	0.30	1.00	1.30	0.60
245	0.35	0.33	0.33	1.03	1.35	0.63
250	0.35	0.35	0.35	1.05	1.40	0.65
255	0.35	0.35	0.35	1.10	1.45	0.68
260	0.35	0.35	0.35	1.15	1.50	0.70
265	0.35	0.35	0.35	1.20	1.55	0.73
270	0.35	0.35	0.35	1.25	1.60	0.75
275	0.35	0.35	0.35	1.30	1.65	0.78
280	0.35	0.35	0.35	1.35	1.70	0.80
285	0.35	0.38	0.38	1.40	1.78	0.83
290	0.35	0.40	0.40	1.45	1.85	0.85
295	0.35	0.40	0.40	1.50	1.90	0.88

30 minute loading Requirements (mm)						
Section Factor A/V m^{-1}	3 sided I beam	4 sided I beam	4 sided I column	CHS Column	RHS 4 sided column	RHS 3 sided Beam
300	0.35	0.40	0.40	1.55	1.95	0.90
305	0.38	0.40	0.40	1.60	2.00	0.93
310	0.40	0.40	0.40	1.65	2.05	0.95
315	0.40	0.40	0.40	1.70	2.10	0.98
320	0.40	0.40	0.40	1.75	2.15	1.00

Note

1. Interpolation of loading requirements for A/V values between those stated above is acceptable. For A/V values outside this range consult PPG.
2. Figures above are dry film thickness in mm and do not include primer.
3. Consult PPG for advice on A/V for both standard & non-standard steel section sizes.

Calculation of A/V Values

The section factor A/V (Hp/A) of a steel member is calculated by dividing the perimeter of steel section exposed to fire (in metres) by its cross sectional area at that point (in square metres).

Notes

3 sided beam loadings assume the section to be supporting a dense aggregate concrete slab. For composite beams supporting steel deck floors thickness should be modified in line with ASFP "Yellow book" recommendations as referred in Building Regulations Approved Doc. B

Quoted loadings assume critical temperatures of 550°C for 4 sided I beams and columns, 500°C for 4 sided SHS/RHS columns, 550°C for CHS columns, 620°C for 3 sided I beams and 575°C for 3 sided SHS/RHS beams. Loadings for calculated critical temperatures outside this range are available from PPG.

Primer shall be supplied by PPG. Consult your PPG representative for compatibility advice on other manufacturers primers.

The data provided complies with the principles of the ASFP/BCF/ICF industry Guidance and Sections 3 and 5 or 6 of this Yellow Book

STEELGUARD FM550

60 minute loading Requirements (mm)						
Section Factor A/V m^{-1}	3 sided I beam	4 sided I beam	4 sided I column	CHS Column	RHS 4 sided column	RHS 3 sided Beam
40	0.25	0.40	0.40	0.45	0.60	0.25
45	0.25	0.43	0.43	0.50	0.68	0.28
50	0.25	0.45	0.45	0.55	0.75	0.30
55	0.25	0.45	0.45	0.60	0.83	0.35
60	0.25	0.45	0.45	0.65	0.90	0.40
65	0.28	0.48	0.48	0.73	0.98	0.43
70	0.30	0.50	0.50	0.80	1.05	0.45
75	0.30	0.53	0.53	0.85	1.13	0.48
80	0.30	0.55	0.55	0.90	1.20	0.50
85	0.33	0.55	0.55	0.95	1.28	0.55
90	0.35	0.55	0.55	1.00	1.35	0.60
95	0.35	0.58	0.58	1.08	1.43	0.63
100	0.35	0.60	0.60	1.15	1.50	0.65
105	0.38	0.63	0.63	1.20	1.58	0.68
110	0.40	0.65	0.65	1.25	1.65	0.70
115	0.43	0.65	0.65	1.30	1.73	0.75
120	0.45	0.65	0.65	1.35	1.80	0.80
125	0.45	0.68	0.68	1.43	1.88	0.83
130	0.45	0.70	0.70	1.50	1.95	0.85
135	0.48	0.73	0.73	1.58	2.03	0.90
140	0.50	0.75	0.75	1.65	2.10	0.95
145	0.50	0.78	0.78	1.75	2.20	1.00
150	0.50	0.80	0.80	1.85	2.30	1.05
155	0.53	0.85	0.85	1.95	2.38	1.23
160	0.55	0.90	0.90	2.05	2.45	1.40
165	0.55	0.93	0.93	2.15	2.53	1.50
170	0.55	0.95	0.95	2.25	2.60	1.60
175	0.58	1.00	1.00	2.35	2.68	1.63
180	0.60	1.05	1.05	2.45	2.75	1.65
185	0.60	1.10	1.10	2.53	2.85	1.68
190	0.60	1.15	1.15	2.60	2.95	1.70
195	0.63	1.18	1.18	2.83	3.23	1.73
200	0.65	1.20	1.20	3.05	3.50	1.75
205	0.68	1.25	1.25	3.28	3.85	1.78
210	0.70	1.30	1.30	3.50	4.20	1.80
215	0.73	1.35	1.35	3.70	-	1.83
220	0.75	1.40	1.40	3.90	-	1.85
225	0.80	1.43	1.43	4.10	-	1.88
230	0.85	1.45	1.45	4.30	-	1.90
235	0.88	1.53	1.53	4.48	-	1.93
240	0.90	1.60	1.60	4.65	-	1.95
245	0.95	1.65	1.65	-	-	1.98
250	1.00	1.70	1.70	-	-	2.00
255	1.05	1.73	1.73	-	-	2.03
260	1.10	1.75	1.75	-	-	2.05
265	1.13	1.78	1.78	-	-	2.08
270	1.15	1.80	1.80	-	-	2.10
275	1.20	1.80	1.80	-	-	2.13
280	1.25	1.80	1.80	-	-	2.15
285	1.28	1.83	1.83	-	-	-
290	1.30	1.85	1.85	-	-	-

60 minute loading Requirements (mm)						
Section Factor A/V m^{-1}	3 sided I beam	4 sided I beam	4 sided I column	CHS Column	RHS 4 sided column	RHS 3 sided Beam
295	1.35	1.88	1.88	-	-	-
300	1.40	1.90	1.90	-	-	-
305	1.45	1.93	1.93	-	-	-
310	1.50	1.95	1.95	-	-	-
315	1.55	1.98	1.98	-	-	-
320	1.60	2.00	2.00	-	-	-

Note

1. Interpolation of loading requirements for A/V values between those stated above is acceptable. For A/V values outside this range consult PPG.
2. Figures above are dry film thickness in mm and do not include primer.
3. Consult PPG for advice on A/V for both standard & non-standard steel section sizes.

Calculation of A/V Values

The section factor A/V (Hp/A) of a steel member is calculated by dividing the perimeter of steel section exposed to fire (in metres) by its cross sectional area at that point (in square metres).

Notes

3 sided beam loadings assume the section to be supporting a dense aggregate concrete slab. For composite beams supporting steel deck floors thickness should be modified in line with ASFP "Yellow book" recommendations as referred in Building Regulations Approved Doc. B

Quoted loadings assume critical temperatures of 550°C for 4 sided I beams and columns, 500°C for 4 sided SHS/RHS columns, 550°C for CHS columns, 620°C for 3 sided I beams and 575°C for 3 sided SHS/RHS beams. Loadings for calculated critical temperatures outside this range are available from PPG.

Primer shall be supplied by PPG. Consult your PPG representative for compatibility advice on other manufacturers primers.

The data provided complies with the principles of the ASFP/BCF/ICF industry Guidance and Sections 3 and 5 or 6 of this Yellow Book

STEELGUARD FM550

90 minute loading Requirements (mm)						
Section Factor A/V m^{-1}	3 sided I beam	4 sided I beam	4 sided I column	CHS Column	RHS 4 sided column	RHS 3 sided Beam
40	0.40	0.50	0.50	1.60	2.00	0.55
45	0.44	0.58	0.58	1.83	2.05	0.60
50	0.48	0.65	0.65	2.05	2.17	0.65
55	0.52	0.73	0.73	2.25	2.26	0.73
60	0.56	0.80	0.80	2.45	2.34	0.80
65	0.60	0.85	0.85	2.60	2.45	0.88
70	0.65	0.90	0.90	2.75	2.51	0.95
75	0.69	0.98	0.98	2.93	2.60	1.03
80	0.73	1.05	1.05	3.10	3.00	1.10
85	0.77	1.13	1.13	3.25	3.40	1.15
90	0.81	1.20	1.20	3.40	3.80	1.20
95	0.85	1.28	1.28	3.58	4.20	1.28
100	0.89	1.35	1.35	3.75	4.60	1.35
105	0.93	1.40	1.40	3.90	-	1.43
110	0.97	1.45	1.45	4.05	-	1.50
115	1.01	1.53	1.53	4.23	-	1.58
120	1.06	1.60	1.60	4.40	-	1.65
125	1.10	1.68	1.68	-	-	1.70
130	1.14	1.75	1.75	-	-	1.75
135	1.18	1.90	1.90	-	-	1.80
140	1.22	2.05	2.05	-	-	1.85
145	1.26	2.18	2.18	-	-	1.90
150	1.30	2.30	2.30	-	-	1.95
155	1.35	2.43	2.43	-	-	1.98
160	1.39	2.55	2.55	-	-	2.00
165	1.44	2.63	2.63	-	-	2.05
170	1.49	2.70	2.70	-	-	2.10
175	1.54	2.78	2.78	-	-	2.13
180	1.59	2.85	2.85	-	-	2.15
185	1.64	2.90	2.90	-	-	-
190	1.69	2.95	2.95	-	-	-
195	1.74	2.98	2.98	-	-	-
200	1.79	3.00	3.00	-	-	-
205	1.85	3.05	3.05	-	-	-
210	1.90	3.10	3.10	-	-	-
215	1.95	3.13	3.13	-	-	-
220	2.00	3.15	3.15	-	-	-
225	2.05	3.18	3.18	-	-	-
230	2.10	3.20	3.20	-	-	-
235	2.15	3.23	3.23	-	-	-
240	2.20	3.25	3.25	-	-	-
245	2.25	3.30	3.30	-	-	-
250	2.30	3.35	3.35	-	-	-
255	2.33	3.38	3.38	-	-	-
260	2.35	3.40	3.40	-	-	-
265	2.40	3.43	3.43	-	-	-
270	2.45	3.45	3.45	-	-	-
275	2.48	3.50	3.50	-	-	-
280	2.50	3.55	3.55	-	-	-

Note

1. Interpolation of loading requirements for A/V values between those stated above is acceptable. For A/V values outside this range consult PPG.
2. Figures above are dry film thickness in mm and do not include primer.
3. Consult PPG for advice on A/V for both standard & non-standard steel section sizes.

Calculation of A/V Values

The section factor A/V (Hp/A) of a steel member is calculated by dividing the perimeter of steel section exposed to fire (in metres) by its cross sectional area at that point (in square metres).

Notes

3 sided beam loadings assume the section to be supporting a dense aggregate concrete slab. For composite beams supporting steel deck floors thickness should be modified in line with ASFP "Yellow book" recommendations as referred in Building Regulations Approved Doc. B

Quoted loadings assume critical temperatures of 550°C for 4 sided I beams and columns, 500°C for 4 sided SHS/RHS columns, 550°C for CHS columns, 620°C for 3 sided I beams and 575°C for 3 sided SHS/RHS beams. Loadings for calculated critical temperatures outside this range are available from PPG.

Primer shall be supplied by PPG. Consult your PPG representative for compatibility advice on other manufacturers primers.

The data provided complies with the principles of the ASFP/BCF/ICF industry Guidance and Sections 3 and 5 or 6 of this Yellow Book

STEELGUARD FM550

120 minute loading Requirements (mm)						
Section Factor A/V m^{-1}	3 sided I beam	4 sided I beam	4 sided I column	CHS Column	RHS 4 sided column	RHS 3 sided Beam
15	0.90	1.71	1.71	1.20	1.02	
20	0.90	1.71	1.71	1.60	1.36	
25	0.90	1.71	1.71	1.99	1.70	
30	0.90	1.71	1.71	2.18	1.86	-
35	0.90	1.71	1.71	2.54	2.17	-
40	0.90	1.71	1.71	2.90	2.60	-
45	0.95	1.71	1.71	3.25	2.90	-
50	1.00	1.71	1.71	3.60	-	-
55	1.06	1.71	1.71	3.98	-	-
60	1.11	1.71	1.71	4.35	-	-
65	1.16	1.71	1.71	-	-	-
70	1.21	1.71	1.71	-	-	-
75	1.27	1.77	1.77	-	-	-
80	1.32	1.85	1.85	-	-	-
85	1.45	1.92	1.92	-	-	-
90	1.72	2.00	2.00	-	-	-
95	1.98	2.07	2.07	-	-	-
100	2.25	2.15	2.15	-	-	-
105	2.38	2.22	2.22	-	-	-
110	2.50	2.30	2.30	-	-	-
115	-	2.38	2.38	-	-	-
120	-	2.45	2.45	-	-	-
125	-	2.53	2.53	-	-	-
130	-	2.60	2.60	-	-	-
135	-	2.68	2.68	-	-	-
140	-	2.75	2.75	-	-	-
145	-	2.80	2.80	-	-	-
150	-	2.91	2.91	-	-	-

Note

1. Interpolation of loading requirements for A/V values between those stated above is acceptable. For A/V values outside this range consult PPG.
2. Figures above are dry film thickness in mm and do not include primer.
3. Consult PPG for advice on A/V for both standard & non-standard steel section sizes.

Calculation of A/V Values

The section factor A/V (Hp/A) of a steel member is calculated by dividing the perimeter of steel section exposed to fire (in metres) by its cross sectional area at that point (in square metres).

Notes

3 sided beam loadings assume the section to be supporting a dense aggregate concrete slab. For composite beams supporting steel deck floors thickness should be modified in line with ASFP "Yellow book" recommendations as referred in Building Regulations Approved Doc. B

Quoted loadings assume critical temperatures of 550°C for 4 sided I beams and columns, 500°C for 4 sided SHS/RHS columns, 550°C for CHS columns, 620°C for 3 sided I beams and 575°C for 3 sided SHS/RHS beams. Loadings for calculated critical temperatures outside this range are available from PPG.

Primer shall be supplied by PPG. Consult your PPG representative for compatibility advice on other manufacturers primers.

The data provided complies with the principles of the ASFP/BCF/ICF industry Guidance and Sections 3 and 5 or 6 of this Yellow Book

STEELGUARD FM560

1. Product description
Thin film fast drying off site intumescent coating for internal and external structural steelwork with decorative topseal range.

2. Manufacturer
PPG Industries (UK) Limited

Micro House, Station Approach, Wood Street North, Alfreton, DE55 7JR

T: 01773 837300 F: 01773 837302 W: www.ppgpmc.com

3. Availability
Supplied direct from the manufacturer or distributor network

4. Nominal specific gravity
Nominal Density 1.3 kg/l

Nominal Volume Solids 68 +/- 3%

5. Wet coverage rate
Theoretical coverage 0.97 square metres/litres at 700 microns (typical dft)

6. Appearance
White or grey, matt when dry

Decorative topseals available in full Ral & BS4800 colour range including metallic & MIO shades

7. On site use
On or off site application by airless spray. VOC compliant as an intumescent coating in accordance with PG6/23. Can be left up to 52 weeks externally without a topseal.

8. Durability
The Steelguard FM560 system has been successfully fire tested after extensive accelerated testing and natural ageing. Good impact and abrasion resistance.

9. Performance in other BS tests
Manufactured in accordance with BS EN ISO 9001

10. Other applications
Alternative critical temperature data available on request, also tested and approved in various European Countries

A Protection technique

Profile

B Application technique

Airless spray or brush

C Specification of system

Application - Surface temperature min 5°C max 40°C and max. humidity of 85%

(a) Abrasive blast clean to ISO 8501-1 Sa 2½. The blast profile achieved should be approximately 75 microns and should not exceed 100 microns.

(b) Apply PPG approved primer - please consult manufacturer for individual project recommendations

(c) Apply Steelguard FM560 - see thickness table.

(d) Apply topseal if necessary - no topseal required for dry internal C1 conditions (ISO 12944) - please consult manufacturer for individual project recommendations

(e) Steelguard FM560 can be left externally without a topseal for up to 52 weeks. During this period, however, Steelguard FM560 must be protected from pooling water, hot humid environments or immersed conditions.

(f) Refer to Steelguard FM560 product data sheet before using.

STEELGUARD FM560

30 minute loading Requirements (mm)						
Section Factor A/V m^{-1}	3 sided I beam	4 sided I beam	4 sided I column	CHS Column	RHS 4 sided column	RHS 3 sided Beam
40	0.25	0.25	0.25	0.25	0.25	0.25
45	0.25	0.25	0.25	0.25	0.25	0.25
50	0.25	0.25	0.25	0.25	0.25	0.25
55	0.25	0.25	0.25	0.25	0.25	0.25
60	0.25	0.25	0.25	0.25	0.25	0.25
65	0.25	0.25	0.25	0.28	0.28	0.25
70	0.25	0.25	0.25	0.30	0.30	0.25
75	0.25	0.25	0.25	0.30	0.33	0.25
80	0.25	0.25	0.25	0.30	0.35	0.25
85	0.25	0.25	0.25	0.33	0.38	0.25
90	0.25	0.25	0.25	0.35	0.40	0.25
95	0.25	0.25	0.25	0.38	0.43	0.25
100	0.25	0.25	0.25	0.40	0.45	0.25
105	0.25	0.25	0.25	0.43	0.48	0.25
110	0.25	0.25	0.25	0.45	0.50	0.25
115	0.25	0.25	0.25	0.48	0.53	0.25
120	0.25	0.25	0.25	0.50	0.55	0.25
125	0.25	0.25	0.25	0.53	0.58	0.28
130	0.25	0.25	0.25	0.55	0.60	0.30
135	0.25	0.25	0.25	0.58	0.63	0.30
140	0.25	0.25	0.25	0.60	0.65	0.30
145	0.25	0.25	0.25	0.60	0.68	0.33
150	0.25	0.25	0.25	0.60	0.70	0.35
155	0.25	0.25	0.25	0.63	0.73	0.35
160	0.25	0.25	0.25	0.65	0.75	0.35
165	0.25	0.25	0.25	0.68	0.78	0.38
170	0.25	0.25	0.25	0.70	0.80	0.40
175	0.28	0.25	0.25	0.73	0.83	0.40
180	0.30	0.25	0.25	0.75	0.85	0.40
185	0.30	0.25	0.25	0.78	0.88	0.43
190	0.30	0.25	0.25	0.80	0.90	0.45
195	0.30	0.25	0.25	0.83	0.93	0.45
200	0.30	0.25	0.25	0.85	0.95	0.45
205	0.30	0.25	0.25	0.88	0.98	0.48
210	0.30	0.25	0.25	0.90	1.00	0.50
215	0.30	0.28	0.28	0.90	1.05	0.50
220	0.30	0.30	0.30	0.90	1.10	0.50
225	0.33	0.30	0.30	0.93	1.15	0.53
230	0.35	0.30	0.30	0.95	1.20	0.55
235	0.35	0.30	0.30	0.98	1.25	0.58
240	0.35	0.30	0.30	1.00	1.30	0.60
245	0.35	0.33	0.33	1.03	1.35	0.63
250	0.35	0.35	0.35	1.05	1.40	0.65
255	0.35	0.35	0.35	1.10	1.45	0.68
260	0.35	0.35	0.35	1.15	1.50	0.70
265	0.35	0.35	0.35	1.20	1.55	0.73
270	0.35	0.35	0.35	1.25	1.60	0.75
275	0.35	0.35	0.35	1.30	1.65	0.78
280	0.35	0.35	0.35	1.35	1.70	0.80
285	0.35	0.38	0.38	1.40	1.78	0.83
290	0.35	0.40	0.40	1.45	1.85	0.85
295	0.35	0.40	0.40	1.50	1.90	0.88

30 minute loading Requirements (mm)						
Section Factor A/V m^{-1}	3 sided I beam	4 sided I beam	4 sided I column	CHS Column	RHS 4 sided column	RHS 3 sided Beam
300	0.35	0.40	0.40	1.55	1.95	0.90
305	0.38	0.40	0.40	1.60	2.00	0.93
310	0.40	0.40	0.40	1.65	2.05	0.95
315	0.40	0.40	0.40	1.70	2.10	0.98
320	0.40	0.40	0.40	1.75	2.15	1.00

Note

1. Interpolation of loading requirements for A/V values between those stated above is acceptable. For A/V values outside this range consult PPG.
2. Figures above are dry film thickness in mm and do not include primer.
3. Consult PPG for advice on A/V for both standard & non-standard steel section sizes.

Calculation of A/V Values

The section factor A/V (Hp/A) of a steel member is calculated by dividing the perimeter of steel section exposed to fire (in metres) by its cross sectional area at that point (in square metres).

Notes

3 sided beam loadings assume the section to be supporting a dense aggregate concrete slab. For composite beams supporting steel deck floors thickness should be modified in line with ASFP "Yellow book" recommendations as referred in Building Regulations Approved Doc. B

Quoted loadings assume critical temperatures of 550°C for 4 sided I beams and columns, 500°C for 4 sided SHS/RHS columns, 550°C for CHS columns, 620°C for 3 sided I beams and 575°C for 3 sided SHS/RHS beams. Loadings for calculated critical temperatures outside this range are available from PPG.

Primer shall be supplied by PPG. Consult your PPG representative for compatibility advice on other manufacturers primers.

The data provided complies with the principles of the ASFP/BCF/ICF industry Guidance and Sections 3 and 5 or 6 of this Yellow Book

STEELGUARD FM560

60 minute loading Requirements (mm)						
Section Factor A/V m^{-1}	3 sided I beam	4 sided I beam	4 sided I column	CHS Column	RHS 4 sided column	RHS 3 sided Beam
40	0.25	0.40	0.40	0.45	0.60	0.25
45	0.25	0.43	0.43	0.50	0.68	0.28
50	0.25	0.45	0.45	0.55	0.75	0.30
55	0.25	0.45	0.45	0.60	0.83	0.35
60	0.25	0.45	0.45	0.65	0.90	0.40
65	0.28	0.48	0.48	0.73	0.98	0.43
70	0.30	0.50	0.50	0.80	1.05	0.45
75	0.30	0.53	0.53	0.85	1.13	0.48
80	0.30	0.55	0.55	0.90	1.20	0.50
85	0.33	0.55	0.55	0.95	1.28	0.55
90	0.35	0.55	0.55	1.00	1.35	0.60
95	0.35	0.58	0.58	1.08	1.43	0.63
100	0.35	0.60	0.60	1.15	1.50	0.65
105	0.38	0.63	0.63	1.20	1.58	0.68
110	0.40	0.65	0.65	1.25	1.65	0.70
115	0.43	0.65	0.65	1.30	1.73	0.75
120	0.45	0.65	0.65	1.35	1.80	0.80
125	0.45	0.68	0.68	1.43	1.88	0.83
130	0.45	0.70	0.70	1.50	1.95	0.85
135	0.48	0.73	0.73	1.58	2.03	0.90
140	0.50	0.75	0.75	1.65	2.10	0.95
145	0.50	0.78	0.78	1.75	2.20	1.00
150	0.50	0.80	0.80	1.85	2.30	1.05
155	0.53	0.85	0.85	1.95	2.38	1.23
160	0.55	0.90	0.90	2.05	2.45	1.40
165	0.55	0.93	0.93	2.15	2.53	1.50
170	0.55	0.95	0.95	2.25	2.60	1.60
175	0.58	1.00	1.00	2.35	2.68	1.63
180	0.60	1.05	1.05	2.45	2.75	1.65
185	0.60	1.10	1.10	2.53	2.85	1.68
190	0.60	1.15	1.15	2.60	2.95	1.70
195	0.63	1.18	1.18	2.83	3.23	1.73
200	0.65	1.20	1.20	3.05	3.50	1.75
205	0.68	1.25	1.25	3.28	3.85	1.78
210	0.70	1.30	1.30	3.50	4.20	1.80
215	0.73	1.35	1.35	3.70	-	1.83
220	0.75	1.40	1.40	3.90	-	1.85
225	0.80	1.43	1.43	4.10	-	1.88
230	0.85	1.45	1.45	4.30	-	1.90
235	0.88	1.53	1.53	4.48	-	1.93
240	0.90	1.60	1.60	4.65	-	1.95
245	0.95	1.65	1.65	-	-	1.98
250	1.00	1.70	1.70	-	-	2.00
255	1.05	1.73	1.73	-	-	2.03
260	1.10	1.75	1.75	-	-	2.05
265	1.13	1.78	1.78	-	-	2.08
270	1.15	1.80	1.80	-	-	2.10
275	1.20	1.80	1.80	-	-	2.13
280	1.25	1.80	1.80	-	-	2.15
285	1.28	1.83	1.83	-	-	-
290	1.30	1.85	1.85	-	-	-

60 minute loading Requirements (mm)						
Section Factor A/V m^{-1}	3 sided I beam	4 sided I beam	4 sided I column	CHS Column	RHS 4 sided column	RHS 3 sided Beam
295	1.35	1.88	1.88	-	-	-
300	1.40	1.90	1.90	-	-	-
305	1.45	1.93	1.93	-	-	-
310	1.50	1.95	1.95	-	-	-
315	1.55	1.98	1.98	-	-	-
320	1.60	2.00	2.00	-	-	-

Note

1. Interpolation of loading requirements for A/V values between those stated above is acceptable. For A/V values outside this range consult PPG.
2. Figures above are dry film thickness in mm and do not include primer.
3. Consult PPG for advice on A/V for both standard & non-standard steel section sizes.

Calculation of A/V Values

The section factor A/V (Hp/A) of a steel member is calculated by dividing the perimeter of steel section exposed to fire (in metres) by its cross sectional area at that point (in square metres).

Notes

3 sided beam loadings assume the section to be supporting a dense aggregate concrete slab. For composite beams supporting steel deck floors thickness should be modified in line with ASFP "Yellow book" recommendations as referred in Building Regulations Approved Doc. B

Quoted loadings assume critical temperatures of 550°C for 4 sided I beams and columns, 500°C for 4 sided SHS/RHS columns, 550°C for CHS columns, 620°C for 3 sided I beams and 575°C for 3 sided SHS/RHS beams. Loadings for calculated critical temperatures outside this range are available from PPG.

Primer shall be supplied by PPG. Consult your PPG representative for compatibility advice on other manufacturers primers.

The data provided complies with the principles of the ASFP/BCF/ICF industry Guidance and Sections 3 and 5 or 6 of this Yellow Book

STEELGUARD FM560

90 minute loading Requirements (mm)						
Section Factor A/V m^{-1}	3 sided I beam	4 sided I beam	4 sided I column	CHS Column	RHS 4 sided column	RHS 3 sided Beam
40	0.40	0.50	0.50	1.60	2.00	0.55
45	0.44	0.58	0.58	1.83	2.05	0.60
50	0.48	0.65	0.65	2.05	2.17	0.65
55	0.52	0.73	0.73	2.25	2.26	0.73
60	0.56	0.80	0.80	2.45	2.34	0.80
65	0.60	0.85	0.85	2.60	2.45	0.88
70	0.65	0.90	0.90	2.75	2.51	0.95
75	0.69	0.98	0.98	2.93	2.60	1.03
80	0.73	1.05	1.05	3.10	3.00	1.10
85	0.77	1.13	1.13	3.25	3.40	1.15
90	0.81	1.20	1.20	3.40	3.80	1.20
95	0.85	1.28	1.28	3.58	4.20	1.28
100	0.89	1.35	1.35	3.75	4.60	1.35
105	0.93	1.40	1.40	3.90	-	1.43
110	0.97	1.45	1.45	4.05	-	1.50
115	1.01	1.53	1.53	4.23	-	1.58
120	1.06	1.60	1.60	4.40	-	1.65
125	1.10	1.68	1.68	-	-	1.70
130	1.14	1.75	1.75	-	-	1.75
135	1.18	1.90	1.90	-	-	1.80
140	1.22	2.05	2.05	-	-	1.85
145	1.26	2.18	2.18	-	-	1.90
150	1.30	2.30	2.30	-	-	1.95
155	1.35	2.43	2.43	-	-	1.98
160	1.39	2.55	2.55	-	-	2.00
165	1.44	2.63	2.63	-	-	2.05
170	1.49	2.70	2.70	-	-	2.10
175	1.54	2.78	2.78	-	-	2.13
180	1.59	2.85	2.85	-	-	2.15
185	1.64	2.90	2.90	-	-	-
190	1.69	2.95	2.95	-	-	-
195	1.74	2.98	2.98	-	-	-
200	1.79	3.00	3.00	-	-	-
205	1.85	3.05	3.05	-	-	-
210	1.90	3.10	3.10	-	-	-
215	1.95	3.13	3.13	-	-	-
220	2.00	3.15	3.15	-	-	-
225	2.05	3.18	3.18	-	-	-
230	2.10	3.20	3.20	-	-	-
235	2.15	3.23	3.23	-	-	-
240	2.20	3.25	3.25	-	-	-
245	2.25	3.30	3.30	-	-	-
250	2.30	3.35	3.35	-	-	-
255	2.33	3.38	3.38	-	-	-
260	2.35	3.40	3.40	-	-	-
265	2.40	3.43	3.43	-	-	-
270	2.45	3.45	3.45	-	-	-
275	2.48	3.50	3.50	-	-	-
280	2.50	3.55	3.55	-	-	-

Note

1. Interpolation of loading requirements for A/V values between those stated above is acceptable. For A/V values outside this range consult PPG.
2. Figures above are dry film thickness in mm and do not include primer.
3. Consult PPG for advice on A/V for both standard & non-standard steel section sizes.

Calculation of A/V Values

The section factor A/V (Hp/A) of a steel member is calculated by dividing the perimeter of steel section exposed to fire (in metres) by its cross sectional area at that point (in square metres).

Notes

3 sided beam loadings assume the section to be supporting a dense aggregate concrete slab. For composite beams supporting steel deck floors thickness should be modified in line with ASFP "Yellow book" recommendations as referred in Building Regulations Approved Doc. B

Quoted loadings assume critical temperatures of 550°C for 4 sided I beams and columns, 500°C for 4 sided SHS/RHS columns, 550°C for CHS columns, 620°C for 3 sided I beams and 575°C for 3 sided SHS/RHS beams. Loadings for calculated critical temperatures outside this range are available from PPG.

Primer shall be supplied by PPG. Consult your PPG representative for compatibility advice on other manufacturers primers.

The data provided complies with the principles of the ASFP/BCF/ICF industry Guidance and Sections 3 and 5 or 6 of this Yellow Book

STEELGUARD FM560

120 minute loading Requirements (mm)						
Section Factor A/V m^{-1}	3 sided I beam	4 sided I beam	4 sided I column	CHS Column	RHS 4 sided column	RHS 3 sided Beam
15	0.90	1.71	1.71	1.20	1.02	
20	0.90	1.71	1.71	1.60	1.36	
25	0.90	1.71	1.71	1.99	1.70	
30	0.90	1.71	1.71	2.18	1.86	-
35	0.90	1.71	1.71	2.54	2.17	-
40	0.90	1.71	1.71	2.90	2.60	-
45	0.95	1.71	1.71	3.25	2.90	-
50	1.00	1.71	1.71	3.60	-	-
55	1.06	1.71	1.71	3.98	-	-
60	1.11	1.71	1.71	4.35	-	-
65	1.16	1.71	1.71	-	-	-
70	1.21	1.71	1.71	-	-	-
75	1.27	1.77	1.77	-	-	-
80	1.32	1.85	1.85	-	-	-
85	1.45	1.92	1.92	-	-	-
90	1.72	2.00	2.00	-	-	-
95	1.98	2.07	2.07	-	-	-
100	2.25	2.15	2.15	-	-	-
105	2.38	2.22	2.22	-	-	-
110	2.50	2.30	2.30	-	-	-
115	-	2.38	2.38	-	-	-
120	-	2.45	2.45	-	-	-
125	-	2.53	2.53	-	-	-
130	-	2.60	2.60	-	-	-
135	-	2.68	2.68	-	-	-
140	-	2.75	2.75	-	-	-
145	-	2.80	2.80	-	-	-
150	-	2.91	2.91	-	-	-

Note

1. Interpolation of loading requirements for A/V values between those stated above is acceptable. For A/V values outside this range consult PPG.
2. Figures above are dry film thickness in mm and do not include primer.
3. Consult PPG for advice on A/V for both standard & non-standard steel section sizes.

Calculation of A/V Values

The section factor A/V (Hp/A) of a steel member is calculated by dividing the perimeter of steel section exposed to fire (in metres) by its cross sectional area at that point (in square metres).

Notes

3 sided beam loadings assume the section to be supporting a dense aggregate concrete slab. For composite beams supporting steel deck floors thickness should be modified in line with ASFP "Yellow book" recommendations as referred in Building Regulations Approved Doc. B

Quoted loadings assume critical temperatures of 550°C for 4 sided I beams and columns, 500°C for 4 sided SHS/RHS columns, 550°C for CHS columns, 620°C for 3 sided I beams and 575°C for 3 sided SHS/RHS beams. Loadings for calculated critical temperatures outside this range are available from PPG.

Primer shall be supplied by PPG. Consult your PPG representative for compatibility advice on other manufacturers primers.

The data provided complies with the principles of the ASFP/BCF/ICF industry Guidance and Sections 3 and 5 or 6 of this Yellow Book

STEELGUARD FM580

1. Product description
Thin film water-borne intumescent coating for internal C1 (ISO 12944) exposed structural steelwork with decorative topseal range.

2. Manufacturer
PPG INDUSTRIES (UK) LIMITED
Micro House, Station Approach, Wood Street North, Alfreton, DE55 7JR
T: 01773 837300
F: 01773 837302 W: www.ppgpmc.com

3. Availability
Supplied direct from the manufacturer or distributor network

4. Nominal specific gravity
Nominal Density 1.4 kg/l

Nominal Volume Solids 70 +/- 3%

5. Wet coverage rate
Theoretical coverage 1.75 square metres/litres at 400 microns (typical dft)

6. Appearance
White, matt when dry

Decorative topseals available in full Ral & BS4800 colour range

7. On site use
Normally used for on site application by airless spray. VOC compliant as an intumescent coating in accordance with PG6/23.

8. Durability
Good impact and abrasion resistance.

9. Performance in other BS tests
Manufactured in accordance with BS EN ISO 9001

10. Other applications
Alternative critical temperature data available on request, also tested and approved in various European Countries

A Protection technique

Profile

B Application technique

Airless spray or brush

C Specification of system

Application - Surface temperature min 5°C max 40°C and max. humidity of 80%

(a) Abrasive blast clean to ISO 8501-1 Sa 2½. The blast profile achieved should be approximately 75 microns and should not exceed 100 microns.

(b) Apply PPG approved primer - please consult manufacturer for individual project recommendations

(c) Apply Steelguard FM580 - see thickness table.

(d) Apply topseal if necessary

(e) Refer to Steelguard FM580 product data sheet before using

STEELGUARD FM580

	Product thickness (mm) for fire resistance period of 30 minute		
Section Factor A/V m^{-1}	**3 Sided I Beam**	**4 Sided I Beam**	**4 Sided I Column**
40	0.16	0.37	0.37
45	0.16	0.37	0.37
50	0.16	0.37	0.37
55	0.16	0.37	0.37
60	0.16	0.37	0.37
65	0.16	0.37	0.37
70	0.16	0.37	0.37
75	0.16	0.37	0.37
80	0.16	0.37	0.37
85	0.16	0.37	0.37
90	0.16	0.37	0.37
95	0.16	0.37	0.37
100	0.16	0.37	0.37
105	0.16	0.37	0.37
110	0.16	0.37	0.37
115	0.16	0.37	0.37
120	0.16	0.37	0.37
125	0.16	0.37	0.37
130	0.16	0.37	0.37
135	0.16	0.37	0.37
140	0.16	0.37	0.37
145	0.16	0.37	0.37
150	0.16	0.37	0.37
155	0.16	0.37	0.37
160	0.16	0.37	0.37
165	0.16	0.37	0.37
170	0.16	0.37	0.37
175	0.16	0.37	0.37
180	0.16	0.37	0.37
185	0.16	0.37	0.37
190	0.16	0.37	0.37
195	0.16	0.37	0.37
200	0.16	0.37	0.37
205	0.16	0.37	0.37
210	0.16	0.37	0.37
215	0.16	0.37	0.37
220	0.16	0.37	0.37
225	0.16	0.37	0.37
230	0.16	0.37	0.37
235	0.16	0.37	0.37
240	0.16	0.37	0.37
245	0.16	0.37	0.37
250	0.16	0.37	0.37
255	0.16	0.37	0.37
260	0.16	0.37	0.37
265	0.16	0.37	0.37
270	0.16	0.37	0.37
275	0.16	0.37	0.37
280	0.16	0.37	0.37
285	0.16	0.37	0.37
290	0.16	0.37	0.37
295	0.16	0.37	0.37
300	0.16	0.37	0.37
305	0.16	0.37	0.37

	Product thickness (mm) for fire resistance period of 30 minute		
Section Factor A/V m^{-1}	**3 Sided I Beam**	**4 Sided I Beam**	**4 Sided I Column**
310	0.16	0.37	0.37
315	0.16	0.37	0.37
320	0.16	0.37	0.37

Note

1. Interpolation of loading requirements for A/V values between those stated above is acceptable. For A/V values outside this range consult PPG.
2. Figures above are dry film thickness in mm and do not include primer.
3. Consult PPG for advice on A/V for both standard & non-standard steel section sizes.
4. Use Steelguard FM549 for hollow sections

Calculation of A/V Values

The section factor A/V (Hp/A) of a steel member is calculated by dividing the perimeter of steel section exposed to fire (in metres) by its cross sectional area at that point (in square metres).

Notes

3 sided beam loadings assume the section to be supporting a dense aggregate concrete slab. For composite beams supporting steel deck floors thickness should be modified in line with ASFP "Yellow book" recommendations as referred in Building Regulations Approved Doc. B

Quoted loadings assume critical temperatures of 550°C for 4 sided I beams and columns, 620°C for 3 sided I beams. Loadings for calculated critical temperatures outside this range are available from PPG.

Primer shall be supplied by PPG. Consult your PPG representative for compatibility advice on other manufacturers primers.

The data provided complies with the principles of the ASFP/BCF/ICF industry Guidance and Sections 3 and 5 or 6 of this Yellow Book

STEELGUARD FM580

	Product thickness (mm) for fire resistance period of 60 minute		
Section Factor A/V m^{-1}	**3 Sided I Beam**	**4 Sided I Beam**	**4 Sided I Column**
40	0.17	0.37	0.37
45	0.17	0.37	0.37
50	0.17	0.37	0.37
55	0.17	0.37	0.37
60	0.17	0.37	0.37
65	0.17	0.37	0.37
70	0.17	0.37	0.37
75	0.17	0.37	0.37
80	0.17	0.37	0.37
85	0.17	0.37	0.37
90	0.17	0.37	0.37
95	0.17	0.37	0.37
100	0.17	0.37	0.37
105	0.17	0.42	0.42
110	0.17	0.45	0.45
115	0.20	0.47	0.47
120	0.23	0.57	0.57
125	0.27	0.62	0.62
130	0.31	0.65	0.65
135	0.35	0.68	0.68
140	0.39	0.70	0.70
145	0.42	0.73	0.73
150	0.43	See Steelguard FM549 loading table	0.74
155	0.45		0.76
160	0.46		0.78
165	0.48		0.79
170	0.49		0.81
175	0.51		0.83
180	0.52		0.84
185	0.54		0.86
190	0.55		0.88
195	0.57		0.89
200	0.58		0.91
205	0.60		0.93
210	0.61		0.94
215	0.63		0.96
220	0.64		0.98
225	0.66		0.99
230	0.67		1.01
235	0.69		1.03
240	0.70		1.04
245	0.72		1.06
250	0.73		1.08
255	See Steelguard FM549 loading table		1.09
260			1.11
265			1.13
270			1.14
275			1.16
280			1.17
285			1.19
290			1.20
295			1.22
300			See Steelguard FM549 loading table
305			

	Product thickness (mm) for fire resistance period of 60 minute		
Section Factor A/V m^{-1}	**3 Sided I Beam**	**4 Sided I Beam**	**4 Sided I Column**
310			
315			
320			

Note

1. Interpolation of loading requirements for A/V values between those stated above is acceptable. For A/V values outside this range consult PPG.
2. Figures above are dry film thickness in mm and do not include primer.
3. Consult PPG for advice on A/V for both standard & non-standard steel section sizes.
4. Use Steelguard FM549 for hollow sections

Calculation of A/V Values

The section factor A/V (Hp/A) of a steel member is calculated by dividing the perimeter of steel section exposed to fire (in metres) by its cross sectional area at that point (in square metres).

Notes

3 sided beam loadings assume the section to be supporting a dense aggregate concrete slab. For composite beams supporting steel deck floors thickness should be modified in line with ASFP "Yellow book" recommendations as referred in Building Regulations Approved Doc. B

Quoted loadings assume critical temperatures of 550°C for 4 sided I beams and columns, 620°C for 3 sided I beams. Loadings for calculated critical temperatures outside this range are available from PPG.

Primer shall be supplied by PPG. Consult your PPG representative for compatibility advice on other manufacturers primers.

The data provided complies with the principles of the ASFP/BCF/ICF industry Guidance and Sections 3 and 5 or 6 of this Yellow Book

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STEELGUARD FM585

1. Product description
Thin film water-borne intumescent coating for internal C1 (ISO 12944) exposed structural steelwork with decorative topseal range.

2. Manufacturer
PPG INDUSTRIES (UK) LIMITED
Micro House, Station Approach, Wood Street North, Alfreton, DE55 7JR
T: 01773 837300
F: 01773 837302 W: www.ppgpmc.com

3. Availability
Supplied direct from the manufacturer or distributor network

4. Nominal specific gravity
Nominal Density 1.43 kg/l

Nominal Volume Solids 70 +/- 3%

5. Wet coverage rate
Theoretical coverage 1.75 square metres/litres at 400 microns (typical dft)

6. Appearance
White, matt when dry

Decorative topseals available in full Ral & BS4800 colour range

7. On site use
Normally used for on site application by airless spray. VOC compliant as an intumescent coating in accordance with PG6/23.

8. Durability
Good impact and abrasion resistance.

9. Performance in other BS tests
Manufactured in accordance with BS EN ISO 9001

10. Other applications
Alternative critical temperature data available on request, also tested and approved in various European Countries

A Protection technique
Profile

B Application technique
Airless spray or brush

C Specification of system
Application - Surface temperature min 5°C max 40°C and max. humidity of 80%

(a) Abrasive blast clean to ISO 8501-1 Sa 2½. The blast profile achieved should be approximately 75 microns and should not exceed 100 microns.

(b) Apply PPG approved primer - please consult manufacturer for individual project recommendations

(c) Apply Steelguard FM585 - see thickness table.

(d) Apply topseal if necessary

(e) Refer to Steelguard FM585 product data sheet before using

STEELGUARD FM585

	Product thickness (mm) for fire resistance period of 30 minute		
Section Factor A/V m^{-1}	**3 Sided I Beam**	**4 Sided I Beam**	**4 Sided I Column**
40	0.233	0.261	0.261
45	0.233	0.261	0.261
50	0.233	0.261	0.261
55	0.233	0.261	0.261
60	0.233	0.261	0.261
65	0.233	0.261	0.261
70	0.233	0.261	0.261
75	0.233	0.261	0.261
80	0.233	0.261	0.261
85	0.233	0.261	0.261
90	0.233	0.261	0.261
95	0.233	0.261	0.261
100	0.233	0.261	0.261
105	0.233	0.261	0.261
110	0.233	0.261	0.261
115	0.233	0.261	0.261
120	0.233	0.261	0.261
125	0.233	0.261	0.261
130	0.233	0.261	0.261
135	0.233	0.261	0.261
140	0.233	0.261	0.261
145	0.233	0.261	0.261
150	0.233	0.261	0.261
155	0.233	0.261	0.261
160	0.233	0.261	0.261
165	0.233	0.268	0.268
170	0.233	0.275	0.275
175	0.233	0.283	0.283
180	0.233	0.290	0.290
185	0.233	0.297	0.297
190	0.233	0.305	0.305
195	0.233	0.312	0.312
200	0.233	0.319	0.319
205	0.233	0.327	0.327
210	0.233	0.334	0.334
215	0.233	0.341	0.341
220	0.233	0.349	0.349
225	0.233	0.356	0.356
230	0.233	0.363	0.363
235	0.244	0.371	0.371
240	0.250	0.378	0.378
245	0.256	0.385	0.385
250	0.261	0.393	0.393
255	0.267	0.400	0.400
260	0.272	0.408	0.408
265	0.278	0.416	0.416
270	0.283	0.423	0.423
275	0.289	0.431	0.431
280	0.294	0.439	0.439
285	0.300	0.447	0.447
290	0.303	0.454	0.454
295	0.306	0.462	0.462
300	0.309	0.470	0.470
305	0.312	0.478	0.478

	Product thickness (mm) for fire resistance period of 30 minute		
Section Factor A/V m^{-1}	**3 Sided I Beam**	**4 Sided I Beam**	**4 Sided I Column**
310	0.315	0.485	0.485
315	0.319	0.493	0.493
320	0.322	0.501	0.501
325	0.325	0.509	0.509
330	0.328	0.516	0.516

STEELGUARD FM585

Product thickness (mm) for fire resistance period of 60 minute			
Section Factor A/V m^{-1}	**3 Sided I Beam**	**4 Sided I Beam**	**4 Sided I Column**
40	0.233	0.370	0.370
45	0.233	0.370	0.370
50	0.233	0.370	0.370
55	0.233	0.370	0.370
60	0.233	0.370	0.370
65	0.233	0.370	0.370
70	0.233	0.370	0.370
75	0.233	0.370	0.370
80	0.233	0.385	0.385
85	0.233	0.400	0.400
90	0.233	0.415	0.415
95	0.250	0.430	0.430
100	0.267	0.446	0.446
105	0.283	0.461	0.461
110	0.300	0.476	0.476
115	0.307	0.491	0.491
120	0.314	0.506	0.506
125	0.321	0.522	0.522
130	0.329	0.537	0.537
135	0.336	0.552	0.552
140	0.343	0.567	0.567
145	0.350	0.582	0.582
150	0.357	0.598	0.598
155	0.364	0.613	0.613
160	0.371	0.628	0.628
165	0.379	0.643	0.643
170	0.386	0.658	0.658
175	0.393	0.674	0.674
180	0.400	0.689	0.689
185	0.407	0.704	0.704
190	0.414	0.719	0.719
195	0.421	0.734	0.734
200	0.429	0.750	0.750
205	0.436	0.765	0.765
210	0.443	Use Steelguard FM549	0.780
215	0.450		0.822
220	0.457		0.863
225	0.464		0.905
230	0.471		0.946
235	0.479		0.988
240	0.486		1.029
245	0.493		1.071
250	0.500		1.112
255	0.507		1.160
260	0.514		1.209
265	0.521		1.257
270	0.529		Use Steelguard FM 580
275	0.536		
280	0.543		
285	0.550		
290	0.567		
295	0.583		
300	0.600		Use Steelguard FM549
305	0.617		
310	0.633		

Product thickness (mm) for fire resistance period of 60 minute			
Section Factor A/V m^{-1}	**3 Sided I Beam**	**4 Sided I Beam**	**4 Sided I Column**
315	0.650		
320	0.667		
325	0.683		
330	0.700		

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STEELGUARD FM2570

1. Product description
Thin film fast drying off site intumescent coating for internal and external structural steelwork with decorative topseal range.

2. Manufacturer
PPG INDUSTRIES (UK) LIMITED
Micro House, Station Approach, Wood Street North, Alfreton, DE55 7JR
T: 01773 837300
F: 01773 837302 W: www.ppgpmc.com

3. Availability
Supplied direct from the manufacturer or distributor network

4. Nominal specific gravity
Nominal Density 1.27 kg/l

Nominal Volume Solids 67 +/- 2%

5. Wet coverage rate
Theoretical coverage 0.96 square metres/litres at 700 microns (typical dft)

6. Appearance
White, matt when dry

Decorative topseals available in full Ral & BS4800 colour range including metallic & MIO shades

7. On site use
On or off site application by airless spray. VOC compliant as an intumescent coating in accordance with PG6/23.

8. Durability
Good impact and abrasion resistance.

9. Performance in other BS tests
Manufactured in accordance with BS EN ISO 9001

10. Other applications
Alternative critical temperature data available on request

A Protection technique
Profile

B Application technique
Airless spray or brush

C Specification of system
Application - Surface temperature min 5°C max 30°C and max. humidity of 80%

(a) Abrasive blast clean to ISO 8501-1 Sa 2½. The blast profile achieved should be approximately 75 microns and should not exceed 100 microns.

(b) Apply PPG approved primer - please consult manufacturer for individual project recommendations

(c) Apply Steelguard FM2570 - see thickness table.

(d) Apply topseal if necessary - no topseal required for dry internal C1 conditions (ISO 12944) - please consult manufacturer for individual project recommendations

(f) Refer to Steelguard FM2570 product data sheet before using.

STEELGUARD FM2570

Product thickness (mm) for fire resistance period of 30 minutes						
Section Factor A/V m^{-1}	3 sided I beam	4 sided I beam	4 sided I column	CHS column	4 sided RHS column/beam	3 sided RHS beam
40	0.25	0.25	0.25	0.60	0.60	0.60
45	0.25	0.25	0.25	0.60	0.60	0.60
50	0.25	0.25	0.25	0.60	0.60	0.60
55	0.25	0.25	0.25	0.60	0.60	0.60
60	0.25	0.25	0.25	0.60	0.60	0.60
65	0.25	0.25	0.25	0.60	0.60	0.60
70	0.25	0.25	0.25	0.60	0.60	0.60
75	0.25	0.25	0.25	0.60	0.60	0.60
80	0.25	0.25	0.25	0.60	0.60	0.60
85	0.25	0.25	0.25	0.60	0.60	0.60
90	0.25	0.25	0.25	0.60	0.60	0.60
95	0.25	0.26	0.26	0.60	0.60	0.60
100	0.25	0.27	0.27	0.60	0.60	0.60
105	0.25	0.28	0.28	0.60	0.60	0.60
110	0.25	0.28	0.28	0.60	0.60	0.60
115	0.25	0.29	0.29	0.60	0.60	0.60
120	0.25	0.30	0.30	0.60	0.60	0.60
125	0.26	0.31	0.31	0.60	0.60	0.60
130	0.26	0.32	0.32	0.60	0.60	0.60
135	0.26	0.33	0.33	0.60	0.60	0.60
140	0.27	0.33	0.33	0.60	0.60	0.60
145	0.27	0.34	0.34	0.60	0.60	0.60
150	0.28	0.35	0.35	0.60	0.60	0.60
155	0.28	0.36	0.36	0.60	0.60	0.60
160	0.28	0.37	0.37	0.60	0.60	0.60
165	0.29	0.38	0.38	0.60	0.60	0.60
170	0.29	0.38	0.38	0.63	0.63	0.60
175	0.30	0.39	0.39	0.66	0.66	0.60
180	0.30	0.40	0.40	0.70	0.70	0.60
185	0.31	0.41	0.41	0.74	0.74	0.60
190	0.31	0.41	0.41	0.77	0.77	0.60
195	0.32	0.42	0.42	0.81	0.81	0.62
200	0.32	0.43	0.43	0.84	0.84	0.65
205	0.33	0.44	0.44	0.87	0.87	0.69
210	0.33	0.44	0.44	0.91	0.91	0.72
215	0.34	0.45	0.45	0.94	0.94	0.76
220	0.35	0.46	0.46	0.98	0.98	0.79
225	0.35	0.46	0.46	1.01	1.01	0.83
230	0.36	0.47	0.47	1.05	1.05	0.86
235	0.36	0.48	0.48	1.06	1.06	0.89
240	0.37	0.49	0.49	1.07	1.07	0.93
245	0.37	0.49	0.49	1.08	1.08	0.96
250	0.38	0.50	0.50	1.09	1.09	1.00
255	0.39	0.51	0.51	1.10	1.10	1.01
260	0.39	0.51	0.51	1.12	1.12	1.01
265	0.40	0.52	0.52	1.13	1.13	1.02
270	0.40	0.53	0.53	1.15	1.15	1.03
275	0.41	0.54	0.54	1.16	1.16	1.04
280	0.41	0.54	0.54	1.18	1.18	1.04
285	0.42	0.55	0.55	1.19	1.19	1.05
290	0.43	0.56	0.56	1.21	1.21	1.06
295	0.43	0.56	0.56	1.22	1.22	1.06
300	0.44	0.57	0.57	1.24	1.24	1.07
305	0.44	0.58	0.58	1.25	1.25	1.08
310	0.45	0.59	0.59	1.27	1.27	1.09
315	0.45	0.59	0.59	1.28	1.28	1.09
320	0.46	0.60	0.60	1.30	1.30	1.10

See notes at end of loading tables

STEELGUARD FM2570

Product thickness (mm) for fire resistance period of 60 minutes						
Section Factor A/V m^{-1}	3 sided I beam	4 sided I beam	4 sided I column	CHS column	4 sided RHS column/beam	3 sided RHS beam
40	0.25	0.26	0.26	0.60	0.60	0.60
45	0.25	0.28	0.28	0.60	0.60	0.60
50	0.26	0.29	0.29	0.60	0.60	0.60
55	0.27	0.31	0.31	0.60	0.60	0.60
60	0.28	0.32	0.32	0.60	0.60	0.60
65	0.29	0.33	0.33	0.60	0.60	0.60
70	0.30	0.35	0.35	0.64	0.64	0.60
75	0.31	0.37	0.37	0.70	0.70	0.60
80	0.31	0.39	0.39	0.76	0.76	0.75
85	0.32	0.41	0.41	0.81	0.81	0.95
90	0.33	0.43	0.43	0.88	0.88	1.07
95	0.34	0.44	0.44	0.94	0.94	1.09
100	0.35	0.46	0.46	1.00	1.00	1.10
105	0.36	0.48	0.48	1.06	1.06	1.12
110	0.37	0.49	0.49	1.10	1.10	1.13
115	0.38	0.51	0.51	1.15	1.15	1.15
120	0.39	0.53	0.53	1.20	1.20	1.16
125	0.40	0.54	0.54	1.25	1.25	1.18
130	0.41	0.56	0.56	1.30	1.30	1.19
135	0.41	0.58	0.58	1.33	1.33	1.21
140	0.42	0.60	0.60	1.35	1.35	1.22
145	0.43	0.61	0.61	1.38	1.38	1.24
150	0.44	0.63	0.63	1.40	1.40	1.25
155	0.45	0.65	0.65	1.43	1.43	1.27
160	0.48	0.66	0.66	1.45	1.45	1.28
165	0.51	0.68	0.68	1.48	1.48	1.30
170	0.53	0.70	0.70	1.50	1.50	1.37
175	0.56	0.72	0.72	1.53	1.53	1.44
180	0.59	0.73	0.73	1.55	1.55	1.50
185	0.61	0.75	0.75	1.58	1.58	1.55
190	0.64	0.78	0.78	1.60	1.60	1.60
195	0.66	0.81	0.81	1.70	1.70	1.65
200	0.69	0.83	0.83	1.80	1.80	1.70
205	0.72	0.85	0.85	1.93	1.93	1.75
210	0.74	0.87	0.87	2.05	2.05	1.80
215	0.77	0.88	0.88	2.15	2.15	1.85
220	0.79	0.89	0.89	2.24	2.24	1.90
225	0.82	0.92	0.92	2.33	2.33	1.95
230	0.84	0.94	0.94	2.42	2.42	2.00
235	0.87	0.97	0.97	2.50	2.50	2.05
240	0.90	1.00	1.00	2.55	2.55	2.10
245	0.92	1.04	1.04	2.60	2.60	2.15
250	0.95	1.10	1.10	2.65	2.65	2.20
255	0.98	1.20	1.20	2.70	2.70	2.25
260	1.00	1.32	1.32	2.75	2.75	2.30
265	1.02	1.42	1.42	-	-	2.35
270	1.04	1.53	1.53	-	-	2.40
275	1.06	1.64	1.64	-	-	2.47
280	1.08	1.74	1.74	-	-	2.53
285	1.10	1.85	1.85	-	-	2.60
290	1.18	1.86	1.86	-	-	2.65
295	1.26	1.88	1.88	-	-	2.70
300	1.33	1.89	1.89	-	-	-
305	1.42	1.91	1.91	-	-	-
310	1.50	1.92	1.92	-	-	-
315	1.57	1.94	1.94	-	-	-
320	1.65	1.95	1.95	-	-	-

See notes at end of loading tables

STEELGUARD FM2570

Product thickness (mm) for fire resistance period of 90 minutes						
Section Factor A/V m^{-1}	3 sided I beam	4 sided I beam	4 sided I column	CHS column	4 sided RHS column/beam	3 sided RHS beam
25	0.55	0.55	0.55	1.30	1.30	1.30
30	0.55	0.55	0.55	1.40	1.40	1.35
35	0.55	0.55	0.55	1.50	1.50	1.39
40	0.55	0.59	0.59	1.60	1.60	1.44
45	0.55	0.70	0.70	1.70	1.70	1.48
50	0.60	0.81	0.81	1.80	1.80	1.53
55	0.70	0.91	0.91	1.90	1.90	1.57
60	0.75	1.01	1.01	2.00	2.00	1.62
65	0.80	1.13	1.13	2.10	2.10	1.66
70	0.90	1.23	1.23	2.20	2.20	1.71
75	1.00	1.33	1.33	2.30	2.30	1.75
80	1.20	1.45	1.45	2.40	2.40	1.80
85	1.30	1.55	1.55	2.50	2.50	1.84
90	1.35	1.65	1.65	2.60	2.60	1.89
95	1.39	1.69	1.69	-	-	1.93
100	1.44	1.72	1.72	-	-	1.98
105	1.49	1.76	1.76	-	-	2.02
110	1.54	1.80	1.80	-	-	2.07
115	1.60	1.84	1.84	-	-	2.11
120	1.65	1.88	1.88	-	-	2.16
125	1.70	1.91	1.91	-	-	2.20
130	1.72	1.95	1.95	-	-	2.25
135	1.73	1.99	1.99	-	-	2.29
140	1.75	2.02	2.02	-	-	2.34
145	1.77	2.06	2.06	-	-	2.38
150	1.78	2.10	2.10	-	-	2.43
155	1.80	2.13	2.13	-	-	2.47
160	1.83	2.16	2.16	-	-	2.52
165	1.87	2.18	2.18	-	-	2.56
170	1.90	2.21	2.21	-	-	2.61
175	1.93	2.24	2.24	-	-	2.65
180	1.97	2.27	2.27	-	-	2.70
185	2.00	2.30	2.30	-	-	2.74
190	2.03	2.42	2.42	-	-	2.78
195	2.06	2.53	2.53	-	-	2.82
200	2.09	2.65	2.65	-	-	2.86
205	2.11	2.78	2.78	-	-	2.90
210	2.14	2.89	2.89	-	-	2.94
215	2.17	3.00	3.00	-	-	2.98
220	2.20	3.08	3.08	-	-	3.02
225	2.27	3.15	3.15	-	-	3.06
230	2.33	3.23	3.23	-	-	3.10
235	2.40	3.32	3.32	-	-	3.14
240	2.47	3.40	3.40	-	-	3.18
245	2.53	-	-	-	-	3.22
250	2.60	-	-	-	-	3.26
255	2.66	-	-	-	-	3.30
260	2.71	-	-	-	-	-
265	2.77	-	-	-	-	-
270	2.82	-	-	-	-	-
275	2.88	-	-	-	-	-
280	2.94	-	-	-	-	-
285	3.00	-	-	-	-	-
290	-	-	-	-	-	-
295	-	-	-	-	-	-
300	-	-	-	-	-	-
305	-	-	-	-	-	-

See notes at end of loading tables

STEELGUARD FM2570

Product thickness (mm) for fire resistance period of 120 minutes						
Section Factor A/V m^{-1}	3 sided I beam	4 sided I beam	4 sided I column	CHS column	RHS 4 sided column/beam	RHS 3 sided beam
25	1.00	1.00	1.00	2.70	2.70	2.57
30	1.07	1.09	1.09	2.70	2.70	2.57
35	1.13	1.18	1.18	2.70	2.70	2.57
40	1.20	1.27	1.27	2.72	2.72	2.57
45	1.27	1.35	1.35	2.76	2.76	2.57
50	1.33	1.44	1.44	2.79	2.79	2.57
55	1.40	1.53	1.53	2.83	2.83	2.57
60	1.47	1.62	1.62	2.86	2.86	2.57
65	1.53	1.70	1.70	2.90	2.90	2.57
70	1.60	1.79	1.79	2.93	2.93	2.57
75	1.67	1.88	1.88	2.97	2.97	2.57
80	1.73	1.97	1.97	3.00	3.00	2.57
85	1.80	2.05	2.05	-	-	2.57
90	1.87	2.14	2.14	-	-	2.57
95	1.93	2.23	2.23	-	-	2.57
100	2.00	2.32	2.32	-	-	2.57
105	2.07	2.40	2.40	-	-	2.57
110	2.13	2.53	2.53	-	-	2.57
115	2.20	2.64	2.64	-	-	2.57
120	2.27	2.76	2.76	-	-	2.63
125	2.33	2.88	2.88	-	-	2.70
130	2.40	3.00	3.00	-	-	2.77
135	2.48	3.05	3.05	-	-	2.83
140	2.57	3.10	3.10	-	-	2.90
145	2.65	3.15	3.15	-	-	2.97
150	2.73	3.20	3.20	-	-	3.03
155	2.82	3.25	3.25	-	-	3.10
160	2.91	3.30	3.30	-	-	3.17
165	3.00	3.35	3.35	-	-	3.23
170	3.08	3.40	3.40	-	-	3.30
175	3.17	-	-	-	-	-
180	3.25	-	-	-	-	-
185	3.32	-	-	-	-	-
190	3.40	-	-	-	-	-
195	-	-	-	-	-	-
200	-	-	-	-	-	-
205	-	-	-	-	-	-
210	-	-	-	-	-	-
215	-	-	-	-	-	-
220	-	-	-	-	-	-
225	-	-	-	-	-	-
230	-	-	-	-	-	-
235	-	-	-	-	-	-
240	-	-	-	-	-	-
245	-	-	-	-	-	-
250	-	-	-	-	-	-
255	-	-	-	-	-	-
260	-	-	-	-	-	-
265	-	-	-	-	-	-
270	-	-	-	-	-	-
275	-	-	-	-	-	-
280	-	-	-	-	-	-
285	-	-	-	-	-	-
290	-	-	-	-	-	-
295	-	-	-	-	-	-
300	-	-	-	-	-	-
305	-	-	-	-	-	-

See notes at end of loading tables

STEELGUARD FM2570

Notes to tables

1. Interpolation of loading requirements for A/V values between those stated above is acceptable. For A/V values outside this range consult PPG.
2. Figures above are dry film thickness in mm and do not include primer.
3. Consult PPG for advice on A/V for both standard & non-standard steel section sizes.
4. 3 sided beam loadings assume the section to be supporting a dense aggregate concrete slab. For composite beams supporting steel deck floors thickness should be modified in line with ASFP "Yellow book" recommendations as referred in Building Regulations Approved Doc. B
5. Quoted loadings assume critical temperatures of 550°C for I columns, 620°C for 3 sided I beams, 520°C for 4 sided CHS/SHS/RHS columns and 590°C for 3 sided SHS/RHS beams. Loadings for calculated critical temperatures outside this range are available from PPG.
6. Primer shall be supplied by PPG. Consult your PPG representative for compatibility advice on other manufacturers primers.

Calculation of A/V Values

The section factor A/V (Hp/A) of a steel member is calculated by dividing the perimeter of steel section exposed to fire (in metres) by its cross sectional area at that point (in square metres).

Notes

This product is certified by a 3rd Party Certification body accredited to ISO Guide 65
The data provided complies with the principles of the ASFP/BCF/ICF industry Guidance and Sections 3 and 5 or 6 of this Yellow Book

STEELGUARD 551

1. Product description
Thin film intumescent coating for internal and external structural steelwork with decorative topseal range. Steelguard FM561 faster drying off site grade is also available.

2. Manufacturer
PPG Industries (UK) Limited
Micro House, Station Approach, Wood Street North, Alfreton, DE55 7JR
T: 01773 837300
F: 01773 837302 W: www.ppgpmc.com

3. Availability
Supplied direct from the manufacturer or distributor network

4. Nominal specific gravity
Nominal Density 1.35 kg/l

Nominal Volume Solids 75 +/- 3%

5. Wet coverage rate
Theoretical coverage 1.07 square metres/litres at 700 microns (typical dft)

6. Appearance
White or grey, matt when dry

Decorative topseals available in full Ral & BS4800 colour range including metallic & MIO shades

7. On site use
Normally used for on site application by airless spray. VOC compliant as an intumescent coating in accordance with PG6/23. Can be left up to 52 weeks externally without a topseal.

8. Durability
Designed for external exposure when suitably primed and finished. Good impact and abrasion resistance.

9. Performance in other BS tests
Manufactured in accordance with BS EN ISO 9001

10. Other applications
N/A

A Protection technique
Profile

B Application technique
Airless spray or brush

C Specification of system
Application - Surface temperature min 5°C max 50°C and max. humidity of 85%

(a) Abrasive blast clean to ISO 8501-1 Sa 2½. The blast profile achieved should be approximately 75 microns and should not exceed 100 microns.

(b) Apply PPG approved primer - please consult manufacturer for individual project recommendations

(c) Apply Steelguard FM551 - see thickness table.

(d) Apply topseal if necessary - no topseal required for dry internal C1 conditions (ISO 12944) - please consult manufacturer for individual project recommendations

(e) Steelguard FM551 can be left externally without a topseal for up to 52 weeks. During this period, however, Steelguard FM551 must be protected from pooling water, hot humid environments or immersed conditions.

(f) Refer to Steelguard FM551 product data sheet before using.

STEELGUARD 551

Section Factor A/V m^{-1}	Product thickness (mm) for fire resistance period of 30 minute				Product thickness (mm) for fire resistance period of 60 minute			
	3-Sided I Beam	4-Sided I Beam	4-Sided I Column	RHS 4 Sided Column	3-Sided I Beam	4-Sided I Beam	4-Sided I Column	RHS 4 Sided Column
30	0.176	0.176	0.176	0.635	0.176	0.176	0.176	0.635
35	0.176	0.176	0.176	0.635	0.189	0.201	0.201	0.635
40	0.176	0.176	0.176	0.635	0.200	0.241	0.241	0.635
45	0.176	0.176	0.176	0.635	0.211	0.280	0.280	0.635
50	0.176	0.176	0.176	0.635	0.222	0.312	0.312	0.635
55	0.176	0.176	0.176	0.635	0.233	0.331	0.331	0.635
60	0.176	0.176	0.176	0.635	0.244	0.350	0.350	0.635
65	0.180	0.180	0.180	0.635	0.256	0.370	0.370	0.635
70	0.183	0.183	0.183	0.635	0.267	0.389	0.389	0.635
75	0.186	0.186	0.186	0.635	0.278	0.408	0.408	0.635
80	0.188	0.189	0.189	0.635	0.290	0.428	0.428	0.635
85	0.191	0.192	0.192	0.635	0.303	0.447	0.447	0.635
90	0.194	0.195	0.195	0.635	0.317	0.466	0.466	0.693
95	0.197	0.198	0.198	0.635	0.330	0.486	0.486	0.778
100	0.200	0.201	0.201	0.635	0.343	0.505	0.505	0.862
105	0.203	0.203	0.203	0.635	0.356	0.524	0.524	0.947
110	0.206	0.206	0.206	0.635	0.369	0.544	0.544	1.031
115	0.209	0.209	0.209	0.635	0.382	0.563	0.563	1.116
120	0.212	0.212	0.212	0.635	0.395	0.582	0.582	1.200
125	0.214	0.215	0.215	0.635	0.411	0.602	0.602	1.285
130	0.217	0.218	0.218	0.635	0.430	0.621	0.621	1.369
135	0.220	0.221	0.221	0.635	0.450	0.640	0.640	1.456
140	0.223	0.224	0.224	0.635	0.469	0.660	0.660	1.547
145	0.226	0.227	0.227	0.635	0.488	0.679	0.679	1.637
150	0.229	0.230	0.230	0.635	0.507	0.698	0.698	1.728
155	0.232	0.233	0.233	0.635	0.526	0.718	0.718	1.818
160	0.235	0.235	0.235	0.635	0.545	0.737	0.737	1.909
165	0.238	0.238	0.238	0.635	0.564	0.756	0.756	
170	0.241	0.241	0.241	0.635	0.583	0.776	0.776	
175	0.243	0.244	0.244	0.635	0.602	0.795	0.795	
180	0.246	0.247	0.247	0.635	0.621	0.814	0.814	
185	0.249	0.250	0.250	0.635	0.640	0.835	0.835	
190	0.252	0.253	0.253	0.635	0.659	0.857	0.857	
195	0.255	0.256	0.256	0.635	0.678	0.878	0.878	
200	0.258	0.259	0.259	0.635	0.697	0.900	0.900	
205	0.261	0.262	0.262	0.635	0.716	0.921	0.921	
210	0.264	0.264	0.264	0.635	0.735	0.943	0.943	
215	0.267	0.267	0.267	0.665	0.754	0.965	0.965	
220	0.270	0.270	0.270	0.697	0.773	0.986	0.986	
225	0.272	0.273	0.273	0.729	0.792	1.008	1.008	
230	0.275	0.276	0.276	0.761	0.811	1.030	1.030	
235	0.278	0.279	0.279	0.793	0.830		1.051	
240	0.283	0.282	0.282	0.825	0.849		1.073	
245	0.291	0.285	0.285	0.857	0.868		1.094	
250	0.299	0.288	0.288	0.889	0.887		1.116	
255	0.307	0.291	0.291	0.921	0.907		1.138	
260	0.315	0.294	0.294	0.953	0.926		1.159	
265	0.323	0.296	0.296	0.985	0.945		1.181	
270	0.331	0.299	0.299	1.017	0.964		1.202	
275	0.339	0.302	0.302	1.049	0.983		1.224	
280	0.347	0.310	0.310	1.081	1.002		1.246	
285	0.355	0.324	0.324	1.113	1.021		1.267	
290	0.363	0.339	0.339	1.145			1.289	
295	0.371	0.354	0.354	1.177			1.311	
300	0.379	0.368	0.368	1.209			1.332	
305	0.387	0.383	0.383	1.241			1.354	
310	0.395	0.398	0.398	1.273			1.375	
315	0.403	0.412	0.412	1.305				
320	0.411	0.427	0.427	1.337				
325	0.418	0.442	0.442	1.369				
330	0.426	0.456	0.456	1.401				

Notes to tables

1. Interpolation of loading requirements for A/V values between those stated above is acceptable. For A/V values outside this range consult PPG.
2. Figures above are dry film thickness in mm and do not include primer.
3. Consult PPG for advice on A/V for both standard & non-standard steel section sizes.
4. 3 sided beam loadings assume the section to be supporting a dense aggregate concrete slab. For composite beams supporting steel deck floors thickness should be modified in line with ASFP "Yellow book" recommendations as referred in Building Regulations Approved Doc. B
5. Quoted loadings assume critical temperatures of 550°C for I columns/4-sided I beams, 620°C for 3 sided I beams and 520°C for 4 sided SHS/RHS.
6. Primer shall be supplied by PPG. Consult your PPG representative for compatibility advice on other manufacturers primers.

Calculation of A/V Values

The section factor A/V (Hp/A) of a steel member is calculated by dividing the perimeter of steel section exposed to fire (in metres) by its cross sectional area at that point (in square metres).

Notes

This product is certified by a 3rd Party Certification body accredited to ISO Guide 65
The data provided complies with the principles of the ASFP/BCF/ICF industry Guidance and Sections 3 and 5 or 6 of this Yellow Book

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STEELGUARD 561

1. Product description
Thin film fast drying off site intumescent coating for internal and external structural steelwork with decorative topseal range.

2. Manufacturer
PPG Industries (UK) Limited
Micro House, Station Approach, Wood Street North, Alfreton, DE55 7JR
T: 01773 837300
F: 01773 837302 W: www.ppgpmc.com

3. Availability
Supplied direct from the manufacturer or distributor network

4. Nominal specific gravity
Nominal Density 1.35 kg/l

Nominal Volume Solids 75 +/- 3%

5. Wet coverage rate
Theoretical coverage 1.07 square metres/litres at 700 microns (typical dft)

6. Appearance
White or grey, matt when dry

Decorative topseals available in full Ral & BS4800 colour range including metallic & MIO shades

7. On site use
On or off site application by airless spray. VOC compliant as an intumescent coating in accordance with PG6/23. Can be left up to 52 weeks externally without a topseal.

8. Durability
Designed for external exposure when suitably primed and finished. Good impact and abrasion resistance.

9. Performance in other BS tests
Manufactured in accordance with BS EN ISO 9001

10. Other applications
N/A

A Protection technique
Profile

B Application technique
Airless spray or brush

C Specification of system
Application - Surface temperature min 5°C max 40°C and max. humidity of 85%

(a) Abrasive blast clean to ISO 8501-1 Sa 2½. The blast profile achieved should be approximately 75 microns and should not exceed 100 microns.

(b) Apply PPG approved primer - please consult manufacturer for individual project recommendations

(c) Apply Steelguard FM561 - see thickness table.

(d) Apply topseal if necessary - no topseal required for dry internal C1 conditions (ISO 12944) - please consult manufacturer for individual project recommendations

(e) Steelguard FM561 can be left externally without a topseal for up to 52 weeks. During this period, however, Steelguard FM561 must be protected from pooling water, hot humid environments or immersed conditions.

(f) Refer to Steelguard FM561 product data sheet before using.

STEELGUARD 561

Section Factor A/V m^{-1}	Product thickness (mm) for fire resistance period of 30 minute				Product thickness (mm) for fire resistance period of 60 minute			
	3 Sided I Beam	4 Sided I Beam	4 Sided I Column	RHS 4 Sided Column	3 Sided I Beam	4 Sided I Beam	4 Sided I Column	RHS 4 Sided Column
30	0.176	0.176	0.176	0.635	0.176	0.176	0.176	0.635
35	0.176	0.176	0.176	0.635	0.189	0.201	0.201	0.635
40	0.176	0.176	0.176	0.635	0.200	0.241	0.241	0.635
45	0.176	0.176	0.176	0.635	0.211	0.280	0.280	0.635
50	0.176	0.176	0.176	0.635	0.222	0.312	0.312	0.635
55	0.176	0.176	0.176	0.635	0.233	0.331	0.331	0.635
60	0.176	0.176	0.176	0.635	0.244	0.350	0.350	0.635
65	0.180	0.180	0.180	0.635	0.256	0.370	0.370	0.635
70	0.183	0.183	0.183	0.635	0.267	0.389	0.389	0.635
75	0.186	0.186	0.186	0.635	0.278	0.408	0.408	0.635
80	0.188	0.189	0.189	0.635	0.290	0.428	0.428	0.635
85	0.191	0.192	0.192	0.635	0.303	0.447	0.447	0.635
90	0.194	0.195	0.195	0.635	0.317	0.466	0.466	0.693
95	0.197	0.198	0.198	0.635	0.330	0.486	0.486	0.778
100	0.200	0.201	0.201	0.635	0.343	0.505	0.505	0.862
105	0.203	0.203	0.203	0.635	0.356	0.524	0.524	0.947
110	0.206	0.206	0.206	0.635	0.369	0.544	0.544	1.031
115	0.209	0.209	0.209	0.635	0.382	0.563	0.563	1.116
120	0.212	0.212	0.212	0.635	0.395	0.582	0.582	1.200
125	0.214	0.215	0.215	0.635	0.411	0.602	0.602	1.285
130	0.217	0.218	0.218	0.635	0.430	0.621	0.621	1.369
135	0.220	0.221	0.221	0.635	0.450	0.640	0.640	1.456
140	0.223	0.224	0.224	0.635	0.469	0.660	0.660	1.547
145	0.226	0.227	0.227	0.635	0.488	0.679	0.679	1.637
150	0.229	0.230	0.230	0.635	0.507	0.698	0.698	1.728
155	0.232	0.233	0.233	0.635	0.526	0.718	0.718	1.818
160	0.235	0.235	0.235	0.635	0.545	0.737	0.737	1.909
165	0.238	0.238	0.238	0.635	0.564	0.756	0.756	
170	0.241	0.241	0.241	0.635	0.583	0.776	0.776	
175	0.243	0.244	0.244	0.635	0.602	0.795	0.795	
180	0.246	0.247	0.247	0.635	0.621	0.814	0.814	
185	0.249	0.250	0.250	0.635	0.640	0.835	0.835	
190	0.252	0.253	0.253	0.635	0.659	0.857	0.857	
195	0.255	0.256	0.256	0.635	0.678	0.878	0.878	
200	0.258	0.259	0.259	0.635	0.697	0.900	0.900	
205	0.261	0.262	0.262	0.635	0.716	0.921	0.921	
210	0.264	0.264	0.264	0.635	0.735	0.943	0.943	
215	0.267	0.267	0.267	0.665	0.754	0.965	0.965	
220	0.270	0.270	0.270	0.697	0.773	0.986	0.986	
225	0.272	0.273	0.273	0.729	0.792	1.008	1.008	
230	0.275	0.276	0.276	0.761	0.811	1.030	1.030	
235	0.278	0.279	0.279	0.793	0.830		1.051	
240	0.283	0.282	0.282	0.825	0.849		1.073	
245	0.291	0.285	0.285	0.857	0.868		1.094	
250	0.299	0.288	0.288	0.889	0.887		1.116	
255	0.307	0.291	0.291	0.921	0.907		1.138	
260	0.315	0.294	0.294	0.953	0.926		1.159	
265	0.323	0.296	0.296	0.985	0.945		1.181	
270	0.331	0.299	0.299	1.017	0.964		1.202	
275	0.339	0.302	0.302	1.049	0.983		1.224	
280	0.347	0.310	0.310	1.081	1.002		1.246	
285	0.355	0.324	0.324	1.113	1.021		1.267	
290	0.363	0.339	0.339	1.145			1.289	
295	0.371	0.354	0.354	1.177			1.311	
300	0.379	0.368	0.368	1.209			1.332	
305	0.387	0.383	0.383	1.241			1.354	
310	0.395	0.398	0.398	1.273			1.375	
315	0.403	0.412	0.412	1.305				
320	0.411	0.427	0.427	1.337				
325	0.418	0.442	0.442	1.369				
330	0.426	0.456	0.456	1.401				

Notes to tables

1. Interpolation of loading requirements for A/V values between those stated above is acceptable. For A/V values outside this range consult PPG.
2. Figures above are dry film thickness in mm and do not include primer.
3. Consult PPG for advice on A/V for both standard & non-standard steel section sizes.
4. 3 sided beam loadings assume the section to be supporting a dense aggregate concrete slab. For composite beams supporting steel deck floors thickness should be modified in line with ASFP "Yellow book" recommendations as referred in Building Regulations Approved Doc. B
5. Quoted loadings assume critical temperatures of 550°C for I columns/4-sided I beams, 620°C for 3 sided I beams and 520°C for 4 sided SHS/RHS.
6. Primer shall be supplied by PPG. Consult your PPG representative for compatibility advice on other manufacturers primers.

Calculation of A/V Values

The section factor A/V (Hp/A) of a steel member is calculated by dividing the perimeter of steel section exposed to fire (in metres) by its cross sectional area at that point (in square metres).

Notes

This product is certified by a 3rd Party Certification body accredited to ISO Guide 65
The data provided complies with the principles of the ASFP/BCF/ICF industry Guidance and Sections 3 and 5 or 6 of this Yellow Book