Plascoat PPA 571
Performance in Fire Situations

Low Smoke density and toxicity properties of
Plascoat PPA 571 in the event of fire

Plascoat PPA 571 and 571ES is composed almost entirely of compounds containing only carbon, hydrogen and oxygen. Unlike many paints, it contains:

- no reactive ingredients
- no phthalates
- no halogens
- no isocyanates
- no heavy metals

On burning, therefore, the fumes are principally made up of carbon dioxide and water. As a result the toxicity of the fumes in a fire situation is extremely low. For instance:

- The index of toxicity of the smoke generated is **1.78** according to test method NES 713. This is **well below** the Royal (British) Navy requirements of 5.

- The index of toxicity of the smoke according to the test method BS 6853:1999 used for projects in the London Underground is **0.21**. This is **well below** even the most stringent requirement of an index of 1.

Furthermore, the rate of generation of smoke and the density of the smoke are relatively low:

- The US Railroad requires that the smoke generated should be less than an index of 100 at 1.5 minutes, 200 at 4 minutes etc. The smoke index generated from PPA 571 when burning is only 110 after **20** minutes.

- The smoke density index according to the test method BS 6853:1999 used for projects in the London Underground is **1.13** ($A_{0\ (ON)}$) compared to a requirement of 2.6.

Under BS 476, Plascoat PPA 571 can be considered to be **Class 0** and, though not specifically flame retardant, more than meets the requirements for coatings in tunnels, enclosed buildings and on passenger trains.

Low Smoke, Low Toxicity

UES Promura - Product enquiries
+61 3 9547 5833 | sales@uespromura.com.au | uespromura.com.au
10-12 McWilliam Street, Springvale VIC 3171, Australia

Plascoat PPA 571 Fire Tests and Fire Fume Certificates

The following certificates are available for Plascoat PPA 571 or PPA 571ES. Please contact Plascoat for copies:

Country	Specification	Description	Result	Comment
UK	BS 476 Pt.5	Test for **Ignitability**	Class P	
	BS 476 Pt.6	Fire **Propagation**	I = 0.2	} Overall - Class 0
	BS 476 Pt.7	**Spread** of Flame	Class 1	
UK	NES 713 *[Royal Navy Specifications]*	**Toxicity** of Fume Index -	1.76	Less than "pass" requirement of 5
UK	BS 6853:1999 Clause D.8.4	**Smoke density**: Code of practice for fire precautions in the design and construction of passenger carrying trains.	A_0 (ON) = 1.13 A_0 (OFF) = 1.37	Less than "pass" requirement of A_0 (ON) =2.6 and A_0 (OFF) =3.9.
UK	BS 6853:1999	**Smoke Toxicity**: Code of practice for fire precautions in the design and construction of passenger carrying trains.	CO_2 (99.5%), CO (0.5%) R = 0.21	Less than lowest specification of 1
USA	NFPA 258 (ASTM E662-93) *[cf. US Federal Railroad Administration]*	Smoke **Generation** - 20 minutes, Flaming mode	110	Less than "pass" requirement of 450
		" - 4 minutes	2.7	Less than "pass" requirement of 200
		" - 1.5 minutes	0.2	Less than "pass" requirement of 100
		- Non Flaming mode	27.84	
USA	ASTM E84	**Surface burning** characteristics of Building Materials	Class 1 or "A" rating	
			Smoke developed = 10	Less than "pass" requirement of 450
			Flame spread index = 10	Less than "pass" requirement of 25 for Class 1 or "A" rating
France	NF P 92-501	Fire Performance of Rigid Materials	Class M1	
France	NF C20-453	**Corrosiveness** of Smoke	pH = 4.46	
France	NF C20-454	Gases evolved during Pyrolysis:-		
		- Detected	CO_2 (34%), CO (7.5%), Water and non-volatiles (58%) - ***Total 99.5%***	
		- *Not Detected*	*HCl, HBr, HCN, HF, SO_2*	
International	IEC 332 Pt.1	Tests on electrical cables. Test on a single vertical wire or cable	Meets the requirements	<425 mm

PB 16 January 2008