Natural-FR

zero-halogen, low smoke, low toxic

Natural-FR is a zero-halogen, low smoke, low toxic rubber compound based on natural rubber.

Natural-FR has been developed at the Tun Abdul Razak Research Centre (TARRC - the UK research and promotion centre of the Malaysian Rubber Board) based on a modified natural rubber grade that is renewable.

It starts its journey from the latex of the natural rubber tree "*Hevea Brasiliensis*". **Natural-FR** can be used to meet material flammability criteria in industrial rubber products and has passed the flammability requirements for floor composites and flexible rubber-metal units as specified in the new EU standard EN45545-2 (2013).

Flooring

Railway rubber components

Metro systems

For further information please call Marina Fernando
+44 (0)1992 584966 ext. 2083 or email mfernando@tarrc.co.uk

Measurement	Standard	Natural-FR
Maximum average rate of heat emission (MARHE)	ISO5660-1 : 25kWm^{-2} : 50kWm^{-2}	29 78
Smoke density, Ds max	EN ISO 5659-2 : 25kWm^{-2} : 50kWm^{-2}	97 150
Smoke Toxicity,CITg	EN ISO 5659-2 : 25kWm^{-2}	0.22
Flame Spread,Critical Heat Flux at extinguishment, CHF(min)	EN ISO 9239-1 kWm^{-2}	≥10.8
	EN ISO 11925-2: *Exposure = 15s*	B_{FL}
Smoke density	BS6853:1999 Annex D8.6 m^2/m^2	314
Flammability	BS EN ISO 4589-2:1999	54.3
Dry slip, PTV*	BS 7976-2	58
Four months after installation slip test results - Dry	BS 7976-2	64
Wet (water) slip, PTV*	BS 7976-2	44
Four months after installation slip test results - Wet	BS 7976-2	43

*Average Pendulum Test Value for a profiled surface

Natural-FR in third party laboratory testing has passed the following criteria for a flooring application, and is authorised for use in entrance matting in London Underground stations.

- Smoke density
- Smoke toxicity
- Heat release rate
- Flame spread
- Ignitability
- Dry & wet slip resistance

Courtesy of Entrance Matting Systems UK

Moulding and Processing

Natural-FR can be moulded using conventional rubber processing operations (compression, transfer, injection moulding and extrusion).

Tun Abdul Razak Research Centre
Brickendonbury, Hertford, Hertfordshire UK SG13 8NL
+44 (0)1992 584966 mfernando@tarrc.co.uk
www.tarrc.co.uk @tarrcuk