

 Directory

Rolling Stock

Camira

Camira Innovates Environmental Flame-Retardant Treatment for Transport Interiors

Camira has engineered an environmentally conscious, non-halogenated, flame-retardant treatment for wool fabrics in the public transport sector.

NitroPhlam365 reduces combustibility and smoke generation on trains, to safeguard passengers in the event of a fire. In comparison to conventional flammability treatments, NitroPhlam365 has a 15% reduction in carbon, energy and water footprint. This is the equivalent of running a UK home for two years or taking 40 cars off the road in a year.

Research has shown that traditional flame-retardant fabric treatments, which contain halogens, including chlorine and bromine, can have potentially carcinogenic and toxicological effects on humans and the environment. Many flammability treatments that are currently in use on public transport are now under review, and even prohibited, in some geographies.

NitroPhlam365 enhances the natural flame retardancy of wool; with its high moisture and nitrogen content, wool does not readily ignite and combust and, when exposed to a flame, will form a char layer on its surface. A future-proof FR treatment, informed by the latest



innovations in scientific research and development, NitroPhlam365 shields the wool fibres and upholstery foams from the flames, controlling and slowing combustion while at the same time minimising toxic smoke production.

Commenting on Camira's innovation, Technical Development Manager Colin Sutcliffe said: *“Engineered for environmental efficiency and to enhance the natural flame retardancy of Camira's wool-rich transport fabrics, NitroPhlam365 is designed for heavy contact use in public transport applications over extended periods of time.*

“Delivering the highest of performance and safety levels, whilst providing significant benefits to human health and the wider environment, this new flammability treatment is halogen-free, eco-friendly, and enables wool fabrics to meet key flammability standards with ease.

“In comparison to traditional treatments, NitroPhlam365 reduces CO2 emissions during production and uses less water and energy; it also increases fabric strength, making it a compelling choice for today's eco and health-conscious consumers.”

NitroPhlam365 is based on a combination of non-toxic and non-carcinogenic phosphorus and nitrogen compounds, which do not bio-accumulate in humans or the environment. The treatment meets Europe's most stringent flammability test criteria including EN 45545 (R21), EN 45545-2:2020 and BS 6853. Alongside this, NitroPhlam365 treated fabrics demonstrate superior tensile and tear strength and optimised abrasion performance, compared to fabrics treated with traditional flammability solutions.

Rolling stock (railway) flammability standards govern material requirements within public environments to ensure user safety. They specify test methods, test conditions and performance limits surrounding combustibility, fire growth and smoke generation of components to ultimately aid users in safe vehicle evacuation.

The more stringent the classification within a flammability standard, the larger the evacuation window. EN 45545 is the European standard for fire

protection which harmonises rolling stock standards across multiple geographies.

EN 45545-2 (R21) assesses the ignitability, heat release, smoke opacity and toxicity of materials used within a railway carriage and establishes three specific hazard levels, ranging from the lowest HL1 to the most stringent HL3. Camira tests to the latest release of the standard (2020).

- ISO 5660-1 Cone Calorimeter
- EN ISO 5659-2 Smoke Generation
- EN 17084 Method 1 Smoke Toxicity

The British standard code of practice for passenger trains, BS 6853 assesses materials for rate of flame spread, smoke opacity and toxic fume. Superseded by EN45545 in 2013, this standard is still requested by some customers and as such Camira still supports third party-verified certification. As with the EN 45545 standard, BS 6853 has a range of category levels from category 1a (the most stringent) to category 2.

- BS 476: Part 7: 1997 Surface Spread of Flame
- BS 6853 D.8.5 Smoke Density a BS 6853 B.2 Smoke Toxicity Chamber

Camira's NitroPhlam365 has been proven to meet EN 45545 (R21) to HL3, the most stringent test criterion, to the latest EN 45545-2:2020 standard as well as BS 6853. This means it provides optimal passenger safety in the event of a fire, reducing combustibility, fire growth and smoke generation to safe levels. The best flame retardants are tailor-engineered to work in synergy with a fabric's composition and construction. NitroPhlam365 has been engineered by Camira to specifically complement and enhance the natural flame retardancy and outstanding physical characteristics of our wool rich transport fabric collection.

To find out more or to obtain a copy of our certification visit www.camirafabrics.com or email info@camirafabrics.com.

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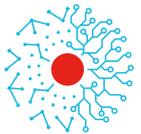
Limitless textile possibilities

From plush moquette textiles to sleek flat woven fabrics and pure leather ranges, Camira's construction capabilities are without limit – and, with an in-house design studio and a world-leading reputation in flammability performance, we are experts in making design dreams a woven reality.

Explore at www.camirafabrics.com

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TOUCHLESS PUSH BUTTONS



MAFELEC TEAM
CREATING SMART AND
SUSTAINABLE INTERFACES

The push buttons can be activated contactlessly via a sensor. However, the passenger still has the option to carry out the activation using the tactile surface.

