



BATEGU is developing a flame-retardant EPDM rubber for high dynamic stress that meets the EN 45545 requirements for the manufacture of anti-vibration components in railway vehicles

At the end of March 2015, the technology company BATEGU presented the advantages of the recently developed and globally unique BATEGU rubber (BATEGU[®]9559) at the international FIRE SAFETY IN RAILWAY SYSTEMS 2015 symposium, organised by the *Interdisciplinary Railway Research Association* in Vienna: flame-retardant, highly dynamic resilient, environmentally friendly, examined and confirmed. In short: The new material has the same dynamic properties as natural rubber, but simultaneously fulfils the highest fire protection regulations pursuant to the EN 45545 railway fire protection standard.

BATEGU anti-vibration components meet the highest fire protection requirements

The EN 45545 European railway fire protection standard that has been in effect since mid-2013 applies to almost all materials and components used in railway vehicles – including all rubber and rubber-to-metal bounded components.

BATEGU is a pioneer in the flame-retardant, highly-dynamic, resilient rubber sector. By 2011, BATEGU had already patented a material combination based on natural rubber for the manufacture of anti-vibration elements conforming to EN 45545 for railway vehicle bogies and successfully brought these onto the market.

Through a new internationally unique product and process innovation, BATEGU has now succeeded in developing a material based on EPDM (ethylene propylene diene rubber) that can be used in dynamic applications previously reserved for natural rubber AND surpasses the requirements of EN 45545.

Until now, EPDM rubber was considered to be inappropriate for use in components with highly dynamic stress, in connection with the demands for technical fire protection properties such as flame-resistance, self-extinguishing properties, low smoke density at a low toxicity of smoke gasses. With the new material, BATEGU now meets these requirements with one and the same material.

Tested and confirmed quality

The new BATEGU rubber (Bategu[®]9559) meets the legal safety regulations and at the same time offers all the technical advantages that railway vehicle manufacturers expect from the use of bogie components, particularly the safe quality that requires no servicing for years.

BATEGU[®]9559 also meets the mechanical component-specific requirements. On-going endurance tests confirm that the new BATEGU material has excellent settlement behaviour as well as outstanding damping properties.

On top of this, the material has an especially high heat resistance under operating conditions and an excellent UV and ozone resistance. The material can even effortlessly withstand extreme environmental conditions such as temperatures of -50 °C.

Independent tests through the TGM Federal Testing Centre for Plastics Technology and Environmental Engineering and the OFI Technologie & Innovation GmbH prove that the new BATEGU material easily meets the standard limit values for heat release rates (ISO 5660-1), smoke density and toxicity of fumes (ISO 5659-2) with a requirement class R9 and HL3 (Hazard Level). Furthermore, the BATEGU materials meet the classes R22, R23 and R24 of EN 45545. By using these materials, the life threatening and other highly negative health effects can be decisively contained in the event of a fire.

Environmentally friendly material

One of the main objectives of this development project was the combination of mechanical-dynamic and technical fire protection properties. At the same time, it was important to the developers to meet the highest current environmental requirements. This objective was also met: The new BATEGU[®]9559 material is non-halogen free, free from nitrosamine forming materials and meets the strict RoHS directives, the REACH requirements, the UNIFE (Railway Industry Substance List) guidelines as well as the railway vehicle manufacturer's internal environmental protection guidelines.

BATEGU – the company where everything revolves around rubber

Based in Vienna, BATEGU Gummitechnologie GmbH & Co KG is one of Austria's highly specialised technology companies. Since being founded in 1948, BATEGU's focus has been on rubber material.

As a development partner and manufacturer of sealing, anti-vibration and drive components, BATEGU supplies well-known industrial clients around the world with innovative special products and components made from rubber and rubber-to-metal bonded as well as rubber plastic components. BATEGU anti-vibration elements can be found in railway vehicles, cars, construction machines, special vehicles, machines, electrical plants, ships and aircraft. During development and production, high priority is placed on the careful use of the available resources. The basis for this sustainable company success are constant innovation, proximity to customers and service, quality according to the zero-error principle as well as a personnel policy that offers equal opportunities and constant further development.

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