

Press release

Co-extruded corrugated tubes made of PA and TPE for motor vehicle manufacturing

Waldkraiburg, December 2019

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Flexible cable management system with THERMOLAST® K

KRAIBURG TPE supplies co-extruded TPEs with optimum adhesion to PA for high-quality corrugated tubes

An innovative new thermoplastic elastomer (TPE) family made by KRAIBURG TPE transfers the established properties of injection-moldable TPEs for multicomponent applications with polyamide (PA) to extrusion. Cable management systems in motor vehicles are the first application for which the Schlemmer Group (Munich) is producing new types of Polyflex corrugated tubes by co-extruding PA and a THERMOLAST® K AD/PA/CS2 compound.

Direct adhesion of TPEs to polar plastics, such as PA, requires carefully selecting the two components and matching them to the specific requirements for each application and processing method. KRAIBURG TPE has performed an extensive study of these criteria and is supporting its customers in using PA/TPE applications by providing specific recommendations and custom-engineered compounds. Established multicomponent applications of this type include injection-molded gaskets, mounting elements, cable bushings and membranes.

The new types of Polyflex corrugated tubes for flexible cable management systems, particularly in vehicle construction, mean that the Schlemmer Group's requirements for TPE components have risen. In order to avoid sharp edges and allow faster installation thanks to slit corrugated tubes, the product developers' design was aimed at combining PA and TPE by co-extrusion.

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“We were looking for a TPE that not only provides the necessary heat resistance and cold toughness for use in motor vehicles, but can also be extruded economically – i.e. without the use of bonding agents – with polyamide. It was also necessary to ensure reliable adhesive strength in this material composite,” explains Michaela Zagler, Material Development Specialist at the Schlemmer Group. “THERMOLAST® K AD/PA/CS2 is a compound that we found among KRAIBURG TPE’s THERMOLAST® K materials that provides this combination of properties.”

After extensive testing, Schlemmer chose a TPE from the new AD/PA/CS2 THERMOLAST® K series, which was specially developed for sophisticated injection molding and co-extrusion applications with polyamides such as PA6, PA6.6 and PA12. The products are characterized by their excellent adhesiveness and provide an outstanding compression set. While their maximum service temperature is 125 °C (3,000 hours), they also resist peak temperatures of up to 150 °C for short periods (240 hours). They also feature high elongation at break, tear strength and resistance to tear propagation, as well as slow burning (UL94 HB). In addition, the TPE family provides a very aesthetic surface quality with excellent wear resistance that does not require finishing, at a hardness range between 40 and 80 Shore A. The selected compound shows a peeling resistance of more than 8.5N/mm during tests in accordance with the VDI 2019 standard.

THERMOLAST® K compounds in the AD/PA/CS2 series are available worldwide in natural color (colorable) as well as in black, and they are produced in accordance with identical quality standards at all KRAIBURG TPE sites.

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(Picture: © 2019 Schlemmer)

A new type of Polyflex corrugated tube for cable management systems in vehicle construction, which is co-extruded combining polyamide and a thermoplastic elastomer from KRAIBURG TPE that provides outstanding temperature resistance, processability, adhesion and surface quality.

About KRAIBURG TPE

KRAIBURG TPE (www.kraiburg-tpe.com) is a global manufacturer of thermoplastic elastomers. From its beginning in 2001 as subsidiary of the historical KRAIBURG Group founded in 1947, KRAIBURG TPE has pioneered in TPE compounds, today being the competence leader in this industry. With production sites in Germany, the US, and Malaysia the company offers a broad range of compounds for applications in the automotive, industrial, consumer, and for the strictly regulated medical sectors. The established THERMOLAST®, COPEC®, HIPEX®, and For Tec E® product lines are processed by injection molding or extrusion and provide numerous processing and product design advantages to manufacturers. KRAIBURG TPE features innovative capabilities as well as true global

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customer orientation, customized product solutions and reliable service. The company is certified to ISO 50001 at its headquarters in Germany and holds ISO 9001 and ISO 14001 certifications at all global sites. In 2018, KRAIBURG TPE, with over 640 worldwide employees, generated sales of 189 million euros.

About Schlemmer

Based in Munich, the Schlemmer Group, a global technology expert, offers tomorrow's mobility solutions today, helping to shape mega-trends in connectivity, safety, sustainability and e-mobility. Building on 60 years of experience, the company, as an innovative partner, today produces a wide variety of comprehensive solutions for cable and fluid management systems. The Schlemmer Group's main business area is the automotive industry, but the company also operates in other industries.

With its 22 production sites at strategically important locations and a mobile factory unit, Schlemmer reaches markets worldwide. This enables the company to implement its global strategy, while acting locally in relation to development, production and distribution. In 2018, the Schlemmer Group generated consolidated net sales of €355 million with some 3,800 employees. For further information, see www.schlemmer.com.

This press release and relevant illustrations can be downloaded from www.PressReleaseFinder.com.

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