Benjamin Müller, EFFBE

Special elastomer saves workspace and weight

Polyurethane is one of the most versatile materials: it can be as soft as rubber or extremely hard. As an elastomer, it is useful for springs and damping elements that can provide benefits to even the most modern manufacturing systems.

Elastomer-springs are state-of-the-art technology

EFFBE, a member of the globally-active Woco Group, provides springs made from its trademark-protected Polyurethane Urelast, which is available in 80 and 90 shore. Wherever springs are used as flexible components or energy storages, Effbe-Elastomer springs can be used. EFFBE is able to customise its products from a range of more than 2000 formulations due to cooperation within the Woco Group.

Elastomer endures four times the pressure

Urelast is a pourable elastomer with very good qualities relating to capacity, fatigue endurance and settlement. Due to these qualities, it is a very popular material for producing customised components. Compared to conventional rubber-metal-elements, Urelast is capable of enduring four times the pressure. This means that Urelast components can be 30-40% smaller. On top of this, the weight can be reduced by more than 80%, because Urelast doesn't require material additions.

Products with emergency operating features

To influence the characteristics of a spring, it's usual to use the common state of technology, in which the seating of the elastomer is connected to a rigid frame. Instead of using metal parts, EFFBE uses Urelast, combined with CFK-material to lower the weight. These elastomer springs have even proven themselves as an alternative to disc springs, steel springs, compression spring or pneumatic springs.

While the fracture of a single disc spring could cause the loss of power of all springs, the Urelast springs have an emergency operating feature that prevents the total cancellation of the other springs. This attribute leads to more safety for the machines and reduces potential maintenance costs.

Monitoring by integrated sensors

EFFBE has innovative, yet affordable sensors integrated into its elastomer components that constantly monitor the workload of the machine. While component ageing can obviously be detected very easily, the physical aging, caused by the constant load, is hardly noticeable. The sensors capture all relevant information about the load on the elastomer element. With this data, it's possible to calculate the attrition, workload and positional change.

EFFBE has honed its data collection and analysis with Urelast components in wind turbines in recent years. It has now also completed trials in which Urelast components were used in vertical roller mills for the cement sector. Components made from Urelast have a wide range of potential applications in the cement sector in any piece of equipment where enhanced spring or dampener longevity would be of value.

Right: Urelast dampers are capable of enduring four times the workload of conventional rubber-metal systems.