Press release

July 23, 2025

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K 2025 trade fair for plastics & rubber: WACKER presents new high-consistency silicone rubber for composite insulators

- Solid silicone rubber POWERSIL® 1900 A/B for the production of composite insulators with extruded silicone housing
- Tracking-, erosion-, and arcing-resistant
- Suitable for spiral extrusion processing that allows conical designs
- Saves 80 percent weight compared to composite insulators made of glass or porcelain
- Water- and dirt-repellent surfaces eliminate the need for costly cleaning

Munich – WACKER is all set to unveil a new high-consistency silicone rubber for the production of composite insulators with extruded silicone housing at the next K 2025 International Trade Fair for Plastics and Rubber. The product is supplied as a 2K addition curing system and is suitable for extrusion manufacturing processes, in particular spiral extrusion. In contrast to other production methods, this makes manufacturing of even large-scale insulators with variable diameters easier and more cost-effective. K 2025 will be held in Düsseldorf, Germany, from October 8 to 15.

Composite hollow-core insulators come under the category of composite insulators. They are basically made up of a hollow, electrically non-conductive tube with annular insulator housing on the exterior made of an electrically non-conductive material. Hollow core insulators are used for electrotechnical

equipment such as bushings, instrument transformers, circuit breakers or surge arresters. They can be imposing in size, especially when it comes to high voltage application. Diameters of over one meter and lengths of over ten meters are not uncommon. But, thanks to their comparatively low weight, composite hollow core insulators are much easier to install than conventional insulators made out of ceramics. Weight savings may add up to 80 percent.

At this year's International Trade Fair for Plastics and Rubber, chemical company WACKER will be presenting a new high-consistency silicone rubber that has been developed specifically for manufacturing composite insulators with extruded silicone housing. This includes especially large volume hollow core insulators. POWERSIL® 1900 A/B can be used to manufacture such components by what is known as the spiral extrusion process. Here, the silicone elastomer is extruded onto a continuously rotating insulating tube, thus ensuring a thoroughly even application of the intricate outer sheds. Thanks to this process, manufacturers can even produce high-precision large-scale insulators at a comparatively low cost. Furthermore, the production of conical shapes – often not feasible with conventional injection-molding techniques – is also possible.

WACKER supplies POWERSIL® 1900 A/B as a ready-to-use 2K high consistency silicone rubber. The product cures by addition curing to form an electrically insulating silicone elastomer with excellent resistance to tracking, erosion, and arcing. No by-products are released during curing. The insulating housing with its sheds has water and dirt-repellent surfaces. Unlike porcelain or glass, they retain their excellent dielectric properties even when used continuously in salty or dusty conditions or exposed to rain and high humidity. Rain and dirty water simply drip off the water-repellent silicone housing. In most cases, this also eliminates the need for costly cleaning operations of composite insulators.

As an elastomer, POWERSIL® 1900 A/B has very good mechanical properties. It is UV-resistant and, thanks to its elasticity, can withstand all kinds of weather, earthquakes and vandalism far better than other materials. Silicone elastomers thus also improve power grid resilience and ensure a secure power supply.

Silicones in power engineering

Silicone elastomers have been a regular feature in high-voltage engineering for decades. As a high-performance insulating material, they possess numerous properties that no other material can match in this combination. In addition to high tracking, erosion and arc resistance, silicones are extremely resistant to weathering and UV radiation. They can withstand heat, cold and extreme temperature fluctuations. The water-repellent surfaces of the cured elastomer are yet another typical feature of silicone elastomers: they remain water-repellent

even when polluted. This property, known in technical jargon as “hydrophobicity” and “hydrophobicity transfer”, prevents the formation of electrically conductive layers of water, dirt and salt, which can lead to electrical failure of the insulator due to flashovers. It is therefore no wonder that silicone elastomers are used today in almost all areas of power transmission and generation.

Visit WACKER at K 2025 from October 8 to 15, in Hall 6, Booth A10.

Hollow-core insulators for high-voltage engineering. POWERSIL® 1900 A/B, WACKER’s new high-consistency silicone rubber for transmission and distribution applications, can be used in spiral extrusion processes to produce low-cost, high-precision composite insulators. (Photo: WACKER)

Note: This photo is available for download at: http://www.wacker.com/pressreleases

Additional Information

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The company in brief:
WACKER is a global company with state-of-the-art specialty chemical products found in countless everyday items, ranging from tile adhesives to computer chips. The company has a global network of 27 production sites, 21 technical competence centers and 46 sales offices. With around 16,600 employees, WACKER generated annual sales of around €5.7 billion in fiscal 2024.

WACKER operates through four business divisions. The Silicones and Polymers chemical divisions supply products (silicones, polymeric binders) for the automotive, construction, chemical, consumer goods and medical technology industries. Biosolutions, the life sciences division, specializes in bioengineered products such as biopharmaceuticals and food additives. Polysilicon produces hyperpure polysilicon for the semiconductor and photovoltaic industries.

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