HSP

Pioneering
high voltage.

Resin Impregnated Synthetic

The latest generation of innovative bushings

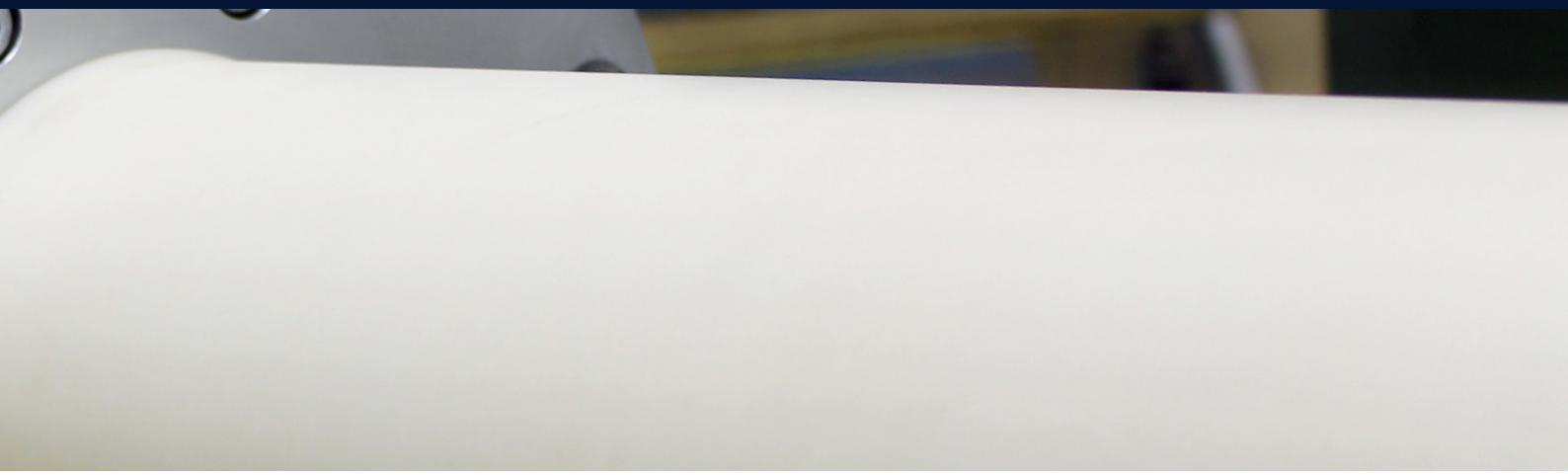
Picture: Vision of the "Transformer 2020"
developed by TRANSFORM partner network /
Image designed by Design Tech, Germany

An innovative development: paper-free bushings

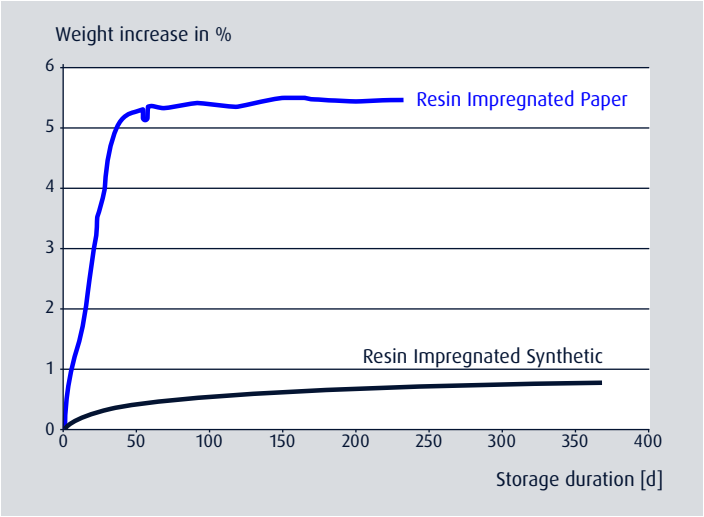
Our bushings made using the proven RIP (Resin Impregnated Paper) technology include materials such as special paper, vacuum impregnated with epoxy resin. While paper is a good isolator, it is also hygroscopic, in other words it absorbs humidity from the surrounding atmosphere. This humidity can have a negative impact in terms of power dissipation and ageing of the bushings, which HSP has been able to reduce significantly thanks to a labor-intensive process during manufacture. This process is time-consuming, however, and increases the costs accordingly.

Following an intensive program of research and development, we have replaced the special paper in our bushings with a plastic web with homogeneous material properties and minimal moisture absorption that substantially reduces the disadvantages described above or removes them entirely.

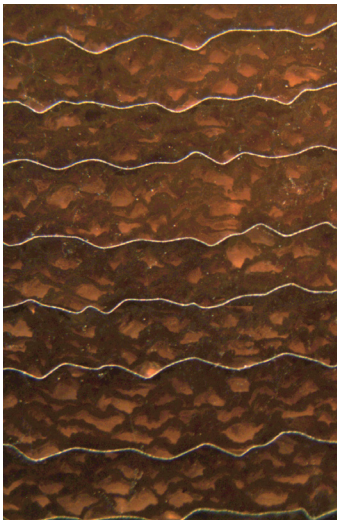
The design of our new paper-free bushings is based on the RIP technology that has been proven in use for more than 60 years now, while making a huge improvement. RIS (Resin Impregnated Synthetic) bushings are characterized by their extremely stable dielectric properties, which are attributable in part to the major reduction in moisture absorption at exposed active surfaces, e.g. the oil end of transformer bushings.



A technology for all designs



Water absorption (storage in water)



Active component (RIP)

Active component (RIS)

Advantages

- Not sensitive to humidity
- Highly stable dielectric properties
- Homogeneous material properties
- Reduced ageing effect compared to paper
- Optimized production process
- Positive effect on service life

A visual indicator for the new technology is the whiter color of the active component, compared to the brown shade of the active component with RIP technology. The new RIS technology can be used for all different designs in our product range. The SETFt bushing made with RIP is designated SE**S**TFt when made with RIS, for example, EKTG becomes E**S**KTG, and so on. Our sales representatives will be happy to draw up a personalized quote for you.

RIS in practical use

Bushings using this technology have already been manufactured and are now being used by selected customers. The first utilities have incorporated our RIS bushings in their networks, enabling us to gain first operational experience.

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