Sonderhoff highlights two-component PU foam seals for the electronics industry

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Sonderhoff is introducing its two-component Fermapor K31 polyurethane (PU) foam for sealing in the electronics industry.

The Fast-Cure Fermapor K31 polyurethane foam sealing is crucial when the control cabinet door is opened and closed frequently for ensuring a consistently high sealant effect when closed

With the two-component Fast-Cure Fermapor K31-A-4530-2-B-FC polyurethane foam seal for indoor control cabinets, the sealing surface is tack-free after just 3.5 minutes and the assembly time can be reduced by more than half from its previous approximately 60 minutes to around 25 minutes, depending on the temperature and processing and machinery-mediated influences.

For control cabinets that are permanently exposed to the influences of weather, Sonderhoff offers special Fast-Cure foam seals that have been tested outdoors. The FERMAPOR K31-A-6065-1-B-FC foam seal used for this can be installed after just 20 minutes (standard 60 minutes). And the tack-free time for this Fast-Cure foam seal is now around 3 minutes, compared to the previous time of 12 minutes.

The type and characteristics of the substrate play a major role in the surface adhesion of foam seals. The new Fast-Cure foam seals generally adhere very well to control cabinet housings that are usually coated with powder paint, said the company.

This is not the case with stainless steel housings. Pre-treatment with an adhesion-promoting primer is needed here.

Foam seals on plastics such as acrylonitrile butadiene styrene (ABS), polycarbonate (PC) or polyamide (PA) 6 generally adhere well, whereas polyethylene (PE), polypropylene (PP), polystyrene (PS), polyvinyl chloride (PVC) or polymethyl methacrylate (PMMA) often require pre-treatment. In thses case, primers or thermal processes such as flame treatment, plasma or corona treatment are usually used.

In the case of electronics housings made from plastic, it is usually sufficient for the foam seal to be held in the groove.

The seal foamed control cabinet side pieces, back walls and roof elements are installed during final assembly and then not opened again. In this case, assembly adhesion in association with the component construction is in many cases sufficient.

The cabinet doors, on the other hand, are opened and closed frequently, which means that special requirements apply to the elastic recovery of the seal used here. Under test conditions (80°C, 50% compression, 22h) the indoor foam seals recovered by around 92%. In the case of outdoor foam seals, the elastic recovery is even better, at around 95%.

The Fast-Cure control cabinet sealings for indoor or outdoor use are water-repellent. The water uptake in their compressed state at room temperature is less than around 3% for outdoor foam seals and around 5% for indoor foam seals. This means that protection classes up to IP 67 can be achieved, depending on the component design and the foam system used.

In North America, the sealing of steel switching cabinets with Fast-Cure control cabinet seals from Sonderhoff is tested in a system test in accordance with NEMA 4.

The Fermapor K31-A-45C4-2-UL-FR also fulfills fire safety standard UL 94 HF-1, the highest fire safety class for polyurethane foam seals in the US, and is therefore classified as self-extinguishing without burning droplets.

It also complies with US testing standard UL 50E for control cabinets and electronics housings in non-explosion-protected zones, as well as UL 508 for the safety of electrical switchgear. All three are key requirements for the marketing of electrical equipment and other electronic applications in the US, Canada and Mexico.