

A Solution for Demanding Industrial Screen-Printing Applications

Julia Fleischer-Weidenbach, CEO of PVF Mesh & Screen Technology in Markt Schwaben (Germany), discusses challenges in electronic component production, emphasizing the need for finer lines and increased mesh stability.

One challenge in the production of electronic components is the increasing compression of functionalities on ever smaller components. The components are being assigned more and more properties while at the same time the space in the finished product is getting smaller and smaller. This means, for example, that lines must be printed ever finer and distances ever narrower. This also poses a challenge for the mesh fineness to be selected. Large to very large print formats also pose a challenge. The dimensional stability of the printing stencil and the associated repeat accuracy of the print image to the substrate over the entire print run play a decisive role here. Fabrics with high physical stability and low distortion properties must be used.

With its unique portfolio of meshes with the highest physical stability (tungsten and V-Screen NEXT) and the finest threads, PVF Mesh & Screen Technology meets the diverse requirements of the electronics industry and creates new opportunities for applications.

The Advantages of V-Screen NEXT versus Stainless Steel Mesh in Screen Printing are diverse:

1. V-Screen NEXT fabric has no yield strength, i.e. it does not undergo plastic deformation during tensioning up to 38 N/cm and it does not undergo plastic deformation during the printing process, even at high doctor blade pressure and high print runs (10.000, 30.000 or 50.000 prints or more).

2. This means that V-Screen NEXT fabric does not "wear out". This means that both the tension of the finished screen always remains the same and the print with V-Screen NEXT mesh always remains in register/accurate and, above all, reproducible. This means that there is no machine downtime for readjusting the take-off and squeegee pressure.

3. The service life of the screen is extended immensely, as V-Screen NEXT threads have up to two times higher tensile strength than comparable stainless-steel threads. (V-Screen NEXT tensile strength 2,100N/mm² vs. standard stainless-steel mesh 1,000 N/mm².)

4. V-Screen NEXT has a higher light transmission and low light reflection, which means that the coating is fully exposed from the print side to the squeegee side with minimal light scattering with every exposure. This results in the longest service life, maximum adhesion between the V-Screen NEXT mesh and coating and the finest lines.

5. The ink and paste flow on the surface of the V-Screen NEXT thread is extremely smooth with very good release properties due to the thread topography. This gives uninterrupted and sharp-edged, homogeneous prints.

6. Cleaning the V-Screen NEXT screens is quick and effective. V-Screen NEXT has no swelling behavior.

7. The handling of V-Screen-NEXT is completely problem-free and the tensioning process is immensely fast. The clamping table multiplies its capacity.

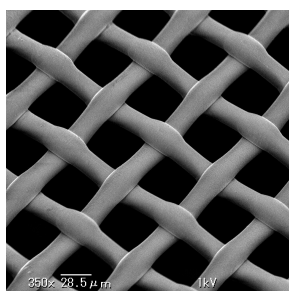
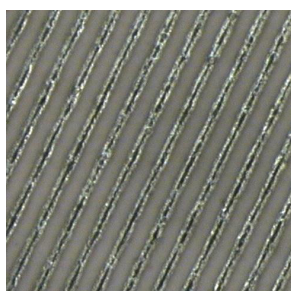
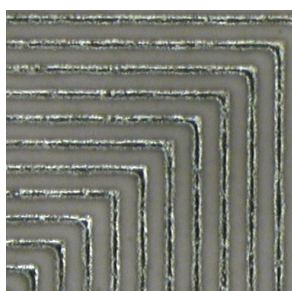


Julia Fleischer-Weidenbach,
CEO PVF

PVF Mesh & Screen Technology

PVF GmbH, based in Markt Schwaben near Munich, is an internationally active German family business specializing in technical precision fabrics and nonwovens. Julia Fleischer-Weidenbach (39) as owner and CEO represents the second generation of the family-run company. Joachim Hunger as COO and Florian Weidenbach as CSO are also members of the C-level management team.

Founded in May 1985, PVF offers innovative screen printing fabrics, industrial, support and filtration fabrics, filter components and ready-made products for filtration and separation – customizable to meet individual customer requirements. As the European representative of Japanese precision fabrics from NBC Meshtec Inc. Japan, PVF supplies a comprehensive and innovative range of highly modular precision fabrics for high-end screen-printing applications. The company positions itself as an expert in ultra-fine line requirements, high-end decorative applications and conductive, partial surface texturing and coating, combined with technical support and application advice from its experienced screen-printing experts across Europe. With ten employees, PVF achieves an annual turnover of approx. € 5,8 bn. BM



Photos: PVF

For printed electronics, fabrics with high physical stability and low distortion properties must be used, as examples from PVF's portfolio show.