

ROLLS AND SHEETS FOR FPCB COVERLAY LAMINATION

RELEASE SOLUTIONS FOR
ELECTRONIC COMPONENTS

Partnerships that inspire.
Materials that perform.



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RELEASE SOLUTIONS FOR ELECTRONIC COMPONENTS

In today's electronics market, the requirement for thinner, lighter, faster and more power-efficient electronics is impacting all industries. Flexible printed circuit boards (FPCB) are a leading core component choice because of their design flexibility and size.

Building FPCB is a complex multi-step process. Each critical step carries a risk of defect. The coverlay lamination process fully encapsulates the delicate structure of FPCB, giving protection and insulation.

Versiv Release Fabrics play a critical role in this process, helping to reduce defect rates, thereby increasing production yield for all types of vacuum, quick sheet and roll-to-roll lamination processes.

For all flex circuit types, Versiv productivity aids are an effective barrier layer in blocking contaminants, as well as providing a release layer, which ensures clean and easy separation of all types of protective release film from the defect-free FPCB after compression.

Minimising defects in high-speed FPCB manufacturing, particularly in the coverlay lamination process, is challenging. Versiv high-performance PTFE-coated fabrics provide essential protection for the very delicate FPCB. During lamination, the protective outer layers of polyimide and other coverlay films are bonded onto one or both sides of the fragile FPCB at high temperatures of up to 260°C / 500°F.

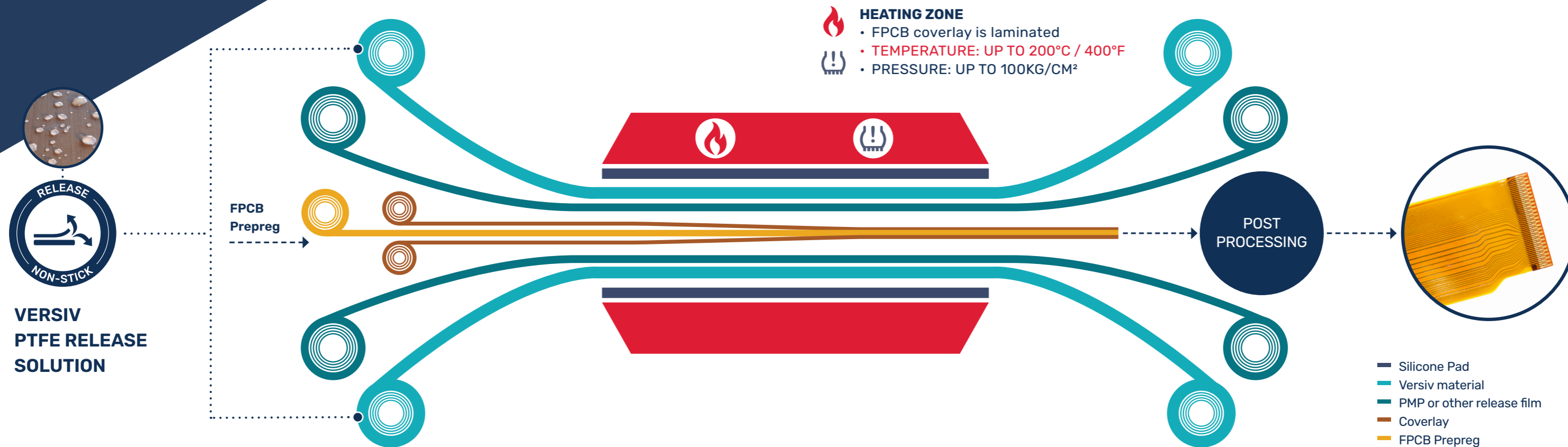
The dimensionally stable and robust Versiv rolls are tensioned, enabling the "throwaway" single-use PMP or other release films to be easily pulled into the laminator, reducing the risk of creasing, which can result in defective FPCBs.

In this aggressive and sticky lamination process, molten adhesives, high temperature and pressure can cause the release of contaminants. The PMP or other release films supported by the Versiv PTFE coated fabrics provide

an effective barrier layer by blocking grease and oils from the silicone cushioning pads.

Defect rate improvements are made possible with Versiv release solutions due to their spot-free surface. This super smooth, nonstick and defect-free PTFE surface prevents the build-up of any hard sticking points from molten polymers, which can frequently occur after long-term repetitive cycles. Versiv release solutions after repetitive use continues to offer excellent and consistent release.

Consistent mechanical and surface release properties over time are the key to a longer lifetime. The high mechanical strength and good wear-resistant PTFE-coatings of Versiv release belts enable long lifetimes and multiple usages. This means continuous production with consistent batch-to-batch quality, reducing machine downtime and maximising the cost/performance ratio.



FEATURES AND BENEFITS

- Compatible with all lamination machines
- Roll to roll or sheet format
- Uniform heat transfer
- Excellent non-stick PTFE surface
- Thermally stable up to 260°C / 500°C
- Resistant to molten adhesives
- Dimensionally stable under pressure
- Defect-free surface
- Durable release over multiple uses
- No fraying on the edges
- No premature tearing
- Easy to operate & maintain
- Simple installation
- Available in long length rolls

OUTCOMES

- Perfectly laminated and encapsulated FPCB
- Surface defect control in FPCB lamination
- Long lasting meaning less downtime
- High quality finish of FPCB
- Reliable performance – No sudden breakages/tears
- Long lifetime with consistent release properties
- Consistent surface – No protrusions
- Consistent batch-to-batch quality
- Risk of unplanned maintenance minimised

CASE STUDY

LOWER SPOT DEFECTS ON RELEASE MATERIALS... REDUCED DEFECT RATES OF FPCB.

Super smooth surface. Longer lasting release. Improved production yield. A new partner specialising in single layer flexible printed circuit board (FPCB) production reported an historical high percentage of defect rates which was significantly impacting the overall production yield and the plant's manufacturing targets.

They made significant changes. They trialled the newly developed SRF010-2X release material and selected Versiv as a new supplier. After the trial period, a review was made of the FPCB defect rates and the quality inspection reports of incoming release materials. These reports showed a significant reduction of spot defects, higher quality on the finishes, and an improvement on the overall batch-to-batch consistency.

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**Partnerships that inspire.
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Versiv is a recognised expert in high-performance, technology-driven, fluoropolymer-based materials and customised solutions. Our expertise is focused on films, fabrics, tapes and multimaterial composites. We create proven and innovative materials that offer protection, easy release, insulation, and friction control. We adapt and collaborate with our partners to push the boundaries of what is possible.

CONTACT US

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WHAT CAN BE MADE USING VERSIV PRODUCTS?

All types of flex and layered FPCB for many industries:

- Medical Instrumentations
- Computers & Data Storage
- Telecommunications
- Automotive
- Defence & Aerospace
- Consumer Electronics
- Industrial Electronics



VERSIV PRODUCTS OF CHOICE:

SRF010-2X, SRF206

Super smooth, longest lasting release

CF206

Very smooth, durable release

CF205, CF310

Industrial grade with good release

CF205 AS

Smooth static-dissipative version

