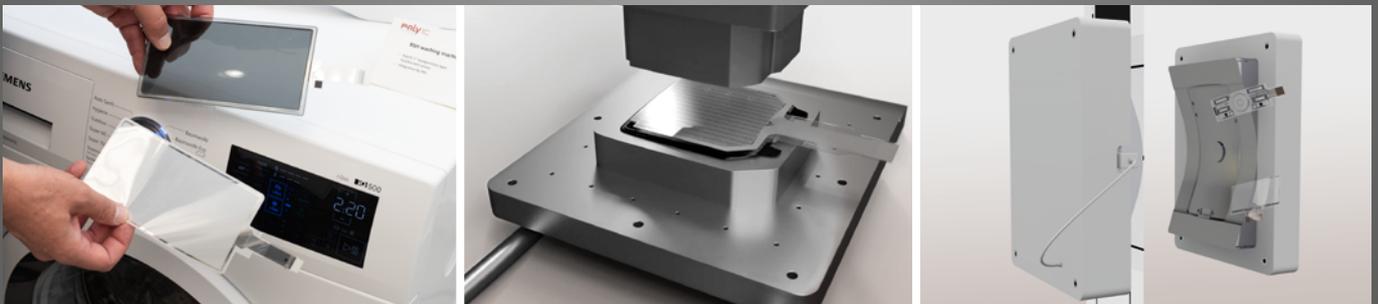


Freedom of function and design

Methods for processing and integrating PolyTC® touch sensors



Ready for the future

Fully integrated touch functions for innovative operating interfaces

Homogeneous surfaces, organically shaped. Magical dead fronts. Light contact makes functions visible. Operating elements illuminate. User interfaces are in transition in the automotive sector, in electronic devices in industry, for consumer electronics, and in home appliances. Touch screens and capacitive keys are replacing simple displays and electromechanical keys. The user experience, combined with exceptional design, is gaining significance with increasing digitization.

Get in touch

For you as a manufacturer this is the right time to align yourself with the market and consider efficient methods of integration for touch sensors. Get a head start and select increased flexibility, more individual freedom of design, and more efficiency for your processes. Think ahead, into the future, with PolyTC, the high-tech partner under the umbrella of finishing specialist LEONHARD KURZ, who provides everything from a single source: very flexible sensor technology and comprehensive decoration know-how, optimally aligned with the integration process that is most efficient for you.

The sensors: PolyTC® technology for maximum flexibility

PolyTC® sensor for integration of touch operation



Transparent, highly conductive and maximum mechanical flexibility: this describes the sturdy PolyTC® touch sensors, a visually appealing metal-mesh coating applied to a transparent polyester substrate (PET). The lattice-like silver microstructures provide you with maximum leeway when realizing your capacitive keys and touchscreens on backlit or fully transparent, flat or domed surfaces. They can be processed in various ways and are suited to a wide variety of uses in coating and injection-molding applications.

Customer-specific and ready to use

Accomplish your touch applications with PolyTC® touch sensors. We deliver our sensor foils as a single, ready-made sensor label including supply line and connector, the appropriate adhesive or process-specific primer, and foils to protect against scratches, if needed. The sensor foils are adapted to your specific integration process and to the material consistency of your product, and can be directly processed. With us, you also enjoy flexibility when choosing your process. As a subsidiary of the finishing specialist LEONHARD KURZ, we cover all common methods of integration.

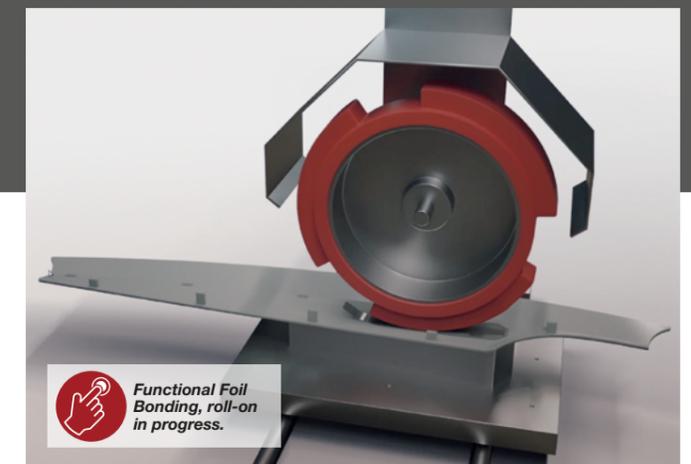
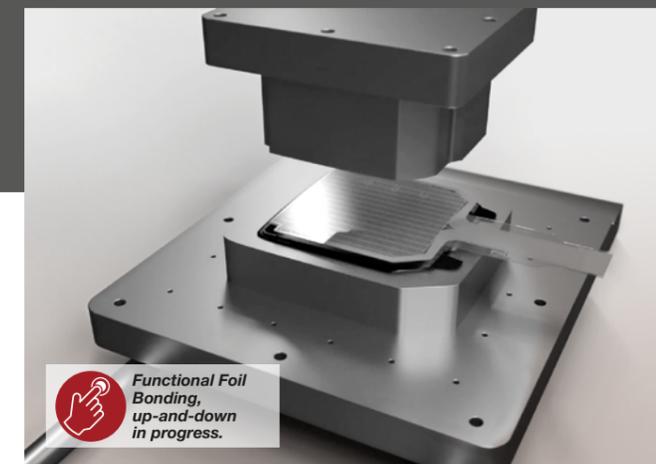
- ✓ Functional Foil Bonding (FFB)
- ✓ Inmold Labeling (IML)
- ✓ Lamination

Fully automatic linking of function

Highly efficient sensor integration with Functional Foil Bonding

Touch is trending. Renowned manufacturers have recognized this and use our highly flexible PolyTC® touch sensors to realize their touch functionality. The reason is evident: PolyTC® sensors give you the opportunity to set the process-related and quality standards of tomorrow.

Working closely with LEONHARD KURZ, and as part of our state-of-the-art sensors with Functional Foil Bonding (FFB), we offer our specifically developed and highly efficient integration and processing method to make your production fit for the touch demands of the future.



Functional Foil Bonding (FFB)

Our innovative and patent-registered process will have you integrating, with remarkable efficiency, highly conductive, transparent PolyTC® touch sensors into medium print runs and larger, including into 3D-shaped surfaces. The integration into your plastic parts is aligned to the geometry and size of the part and sensor. It is performed by stamping or rolling with pressure and heat, is fully automatic, highly precise and durable. What's more, Functional Foil Bonding can be linked directly to the injection molding process. Our KURZ subsidiary BAIER supplies the appropriate equipment. You keep costs down, yet achieve high quality functional surfaces. Especially in comparison to conventional processes, the advantages in stability are particularly impressive when specification requirements are high.

Advantages:

- ✓ High visual quality for semi-transparent surfaces
- ✓ Fully automatic hot-stamping process
- ✓ Specification advantages over conventional processes like OCA

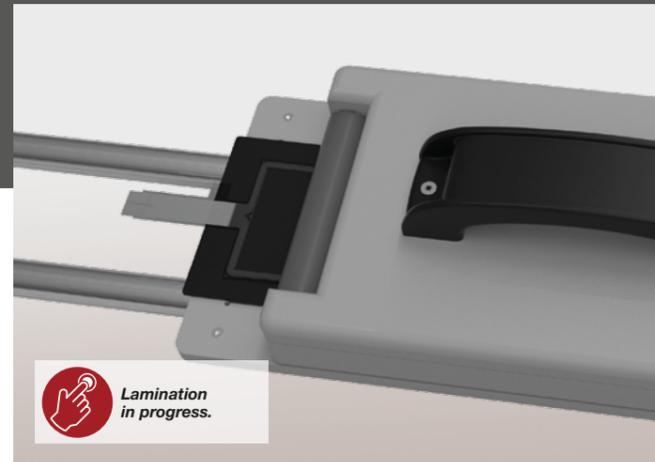
Integrate with ease Combine processes Set new standards



Automobile trim strip with FFB-integrated PolyTC® sensor for touch operation of ambient lighting and other functions.

Proven and innovative sensor applications

Laminating is one of the most common integration processes in the world. It covers a wide spectrum of application scenarios on glass and plastic surfaces – even in small runs. Our PolyTC® touch sensors can also be applied with lamination. But with an eye to the future of touch-sensitive surfaces, however, this popular and proven standard method has its limits, such as when used on outgassing plastics or curved surfaces. In contrast, the injection of labels in Inmold Labeling (IML) processes is fully automatic, and brilliantly combines simultaneous decoration using IMD or insert foils.



Inmold Labeling (IML)

Significantly boost the efficiency and quality of your processes in the production of unique 3D touch surfaces, by allowing us to combine Inmold Labeling (IML) with Inmold Decoration (IMD). Simultaneously apply our transparent, conductive PolyTC® sensors to your parts during the injection-molding process. In the first mold half, the PolyTC® foil bonds during back injection with the backside of the plastic part, using a primer we have specifically developed. At the same time, a carrier foil with decoration is directed at the second mold half, whereby the decorative layer bonds to the front side of the part during the injection molding process. Of course, a combination with insert decoration foils is possible, as well as sensor integration without decoration.

Advantages:

- ✓ High visual quality for injectable plastics
- ✓ Linking of decoration and function in one step

Lamination

To achieve high transparency, the display industry in particular employs laminating with cost-intensive OCA (Optical Clear Adhesives) around the world as a sophisticated standard integration process for touchscreen sensors. If only transparent or visually noncritical surfaces are requested, PSA (Pressure Sensitive Adhesive) is usually used. We offer PolyTC® sensors with both OCA and PSA coatings.

Advantages:

- ✓ Applicable to smooth 2D surfaces
- ✓ Worldwide standard

Counting on the future – a comparison of methods of integration

	Functional Foil Bonding (FFB)	Inmold Labeling (IML)	Lamination (PSA, OCA)
Technical aspects			
Substrate	Plastic	Injection-molded plastic	Smooth materials (e.g. glass, plastic)
3D capability	2D to 3D	2D to slight 3D	2D or slightly curved
Necessary additional coatings	FFB primer, as part of sensor design	IML primer, as part of sensor design	PSA (low visual requirement) or OCA (high visual requirement)
Integration, decoration	Downstream, on (decorated) finished part	Single-stage, combination with Inmold Decoration (IMD) possible	Downstream, on (decorated) finished part; subsequent autoclave treatment may be needed
Integration requirements	Heat and pressure from die (stroke or unwind)	Heat and high pressure in the injection-molding process	Room temperature, low pressure
Achievable visual quality	Transparent to high	Transparent to very high	PSA: transparent OCA: very high
Use with outgassing plastics	Non-Critical	Non-Critical	Critical
Economic aspects			
Additional investment for integration	Absorption and die, if needed, FFB equipment	Adaptation of injection mold	If needed autoclave, laminating equipment
Automation	Low to very high	High to very high	Low to medium
Costs from additional coatings	Very low	Very low	PSA: medium OCA: high
Scalability	Low to very high piece numbers	Medium to very high piece numbers	Low to very high piece numbers
Cycle time for integration	Short	No additional time	Short to medium
Optimally suited			
	Fully automatic replacement of bonding systems	Single-stage, fully integrated process in combination with Inmold decoration (IMD)	For established laminating processes on smooth 2D substrate

Follow us on:



We are looking forward
to hearing from you!

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