Touch Functionality on Curved Surfaces

Applying decoration and sensor technology simultaneously in a single injection molding process
Smart and attractive
This describes the process used by KURZ and its subsidiary company PolyIC—a combination of Inmold Labeling (IML) and Inmold Decoration (IMD). This combines both function and decoration in a single injection molding step, even on curved component surfaces (3D geometries). In addition to using innovative die technology, the process is based on the special IML-capable PolyTC® functional films made by KURZ subsidiary PolyIC. The finished components can be processed immediately. Their versatility is particularly apparent as Inmold Labels (IML).

Short process
And this is how this innovative process works: Inmold labels are made from the special PolyTC® functional film and laid in one half of the die. The IMD foil with decorative coating is precisely positioned in the other half of the die. The plastic material is now injected between the label and IMD foil. This transfers the decor onto the front; at the same time the labels are permanently bonded to the plastic part on the back.

Obvious benefits
In terms of functionality and design, the benefits of the new process are clear to see. Components are no longer interrupted by mechanical buttons because the switching elements are behind the decoration. Manufacturers benefit from the fact that the touch functionality of the PolyTC® conductive films can be integrated by means of IML. Because PolyTC® films are so flexible that even 3D applications are possible. By using the process for touch sensor control panels of electric and electronic devices, it is possible to produce surfaces that are both uniform and of high quality. Thus the design versatility and quality offered by IMD affords limitless potential.

Freedom of design
In addition to customized designs, manufacturers can choose from a large range of standard designs. Not only is there a huge variety of colors, patterns and textures in realistic wood, marble and carbon effect, but also a wide range of real metal coatings – from polished metallic colors through various gloss levels to surfaces with brushed metal effect. In order to ensure the capacitive activation of the control elements, non-conductive NCVM coatings are used to produce elegant metal surfaces with active buttons.

The result: Maximum freedom of design for touch-sensitive control panels e.g. in vehicle interiors and on telecommunications, household or entertainment devices and ultimate manufacturing efficiency.

Wide variety of high-quality designs and substantial cost benefits by dispensing with a complete manufacturing step: KURZ and PolyIC open up entirely new possibilities for manufacturers in the production of touchscreens and touch sensor control panels – even on curved surfaces. This extremely efficient manufacturing process combines Inmold Labeling (IML) and Inmold Decoration (IMD) in one single injection molding process. PolyTC® functional films for touch sensors and decorative coatings can thus be applied simultaneously, even on components with curved surfaces. This reduces production costs enormously, dispensing with an additional decoration stage, interim storage and subsequent work steps.