

# PIONEERING SUBSTRATES

Gianni Robertazzi describes the application possibilities of new substrates

IN THE FUTURE, PRINT MATERIALS WILL GAIN IN IMPORTANCE FOR THEIR TACTILE POSSIBILITIES AS WELL AS FOR BEING CARRIERS OF VISUAL INFORMATION. THE COMBINATION OF TOUCH AND SIGHT GIVES A PRODUCT AN EMOTIONAL VALUE.

A long time ago, Aristotle came to the following conclusion: the sense of touch is the most important and all the other senses are secondary. Hardly any manufacturer leaves touch to chance, whether it is the haptic laboratory of automotive manufacturers, designers of industrial tools or lifestyle products. Thermoplastic elastomers and soft touch coatings can enhance tactile features. These often call for a pad- or screen printed label or decoration.

## WHAT ARE THERMOPLASTIC ELASTOMERS?

Thermoplastic Elastomers (TPE) are plastics which, at room temperature, possess the physical characteristics of elastomers (rubber) and which, when in contact with heat, become ductile and so show thermoplastic

characteristics. Mostly compounds, elastomer alloys are also a mixture of finished polymers.

The material consists of several types of molecules with specific physical characteristics depending on the ratio of, for instance, polyolefins and elastomers. The greatest use lies in multi-component injection moulding, which offers the possibility of binding together various raw materials as 'hard soft solutions'. TPE materials can be applied as soft components for the first time.

TPE can be used in the production of extruded products such as tubes, or of multi-component injection moulds. It offers new design possibilities (shape and haptics) and is virtually 100% recyclable.

## SOFT TOUCH SURFACES

This consists of a one or two component varnish which can be either water- or solvent-based. The uppermost coat, called the 'top coating', is distinguished by a soft surface. This upgrading of the whole product is considered to be the greatest advantage of a soft touch varnish. Rigid substrates such as plastic or metal are used as carrier materials.

Once the varnish is hardened and fully dried, printing with standard products is often difficult. Therefore it was often necessary to print right after varnishing. With non-polar TPE materials, the choice of the right pre-treatment method and energy determines the success of the adhesion.

This is further complicated by the need for an additive for injection moulding, which acts as an oleophobic on the contact area and so prevents or makes ink adhesion more difficult. Therefore this requires pre-treatment with flame or plasma, which simultaneously adopts the function of cleaning the surface as well as increasing surface tension.

## PAD AND SCREEN PRINTING

Marabu has developed the Tampaflex TPF, a printing system which incorporates a printing ink for TPE and soft touch varnish at the same



A sample of automotive use

colour injection moulding. With Tampaflex TPF pad printing ink, customer demands for good adhesion, high chemical resistance and flexibility can be fulfilled.

Tampaflex TPF offers printability and good adhesion on TPE material and soft touch coatings. It is suitable for rubber substrates, with high chemical resistance, optimally adjusted rheology and high applicability

## THE BOTTOM LINE

The new type of substrates such as TPE and soft touch surfaces will increase in importance. Competitive pressure encourages manufacturers to stand out from the masses through differentiation. Tampaflex TPF is an outstanding solution for printing onto TPE and soft touch surfaces. [SP](#)

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A sample for printing onto packaging

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