

Strong Bonds Built Through Understanding the Interface

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ABSTRACT

In bonding operations it is vital that the adhesive is applied on the correct locations and spreads over the (roughened) surface sufficiently to bond. Incorrect applied adhesive can weaken the bond as well as premature hardening of the adhesive (cooling, drying or curing reactions) before bond formation, can weaken the subsequent joint.

This contribution pays attention to characterisation methods for substrates and adhesives to understand the factors that influence the interactions between the substrate and adhesive during the bonding process.

The specific case that will be discussed is about the adhesion of two-component epoxy adhesive to be used for bonding polypropylene. The effect of surface treatment on wettability and adhesion is studied. The power of contact angle measurements is proven and validated by means of lap shear testing and the direct relation between changes surface wettability and adhesion improvement is shown.