

CASE STUDY

LIGHT CARPET COVER BONDING

INVISIBLE CONNECTION FOR THE PREMIUM SECTOR

A premium car manufacturer developed a new lighting system – known as a light carpet – which illuminates the entrance area of a vehicle. The first fastening solution met the basic requirements, but was above the target price and offered potential for optimisation in terms of process reliability and wetting.

The early involvement of INNO TAPE enabled the material, contour and design to be further developed in a targeted manner. Close coordination with the customer and the material

manufacturer resulted in both technical improvements and an efficient series solution.

The result: significant cost reduction, OEM-compliant adhesive performance and a stable assembly process – achieved through partnership and cooperation.

Find out how development partnerships create economic efficiency in our case study.

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INITIAL SITUATION

The light carpet is an innovative lighting element that gently illuminates the floor in the entrance area. Specific micro-optics project the light radially onto a defined area – visually sophisticated and positioned in the premium segment.

We were commissioned to develop an adhesive tape-based fastening concept for the component in which the lens is integrated. The module is mounted in the sill area – an area with tight installation spaces and thermal and mechanical stresses.

The contour of the moulded part had already been specified by the customer. At the same time, it had to be clarified whether geometric adjustments were possible to improve material utilisation and subsequent processing.

Challenges

The first version of the fastening solution met the basic technical requirements but exceeded the target price.

At the same time, the challenging installation location in the sill area placed high demands on economical and reliable assembly. In addition, the joining process for the plastic component revealed that the wetting was not yet sufficient to reliably meet the OEM specifications in terms of adhesive strength. It thus became clear that economic, technical and process-related aspects needed to be further optimised.

Objective

The aim was to develop a cost-effective adhesive tape concept that:

- permanently secures the visually sensitive assembly
- complies with OEM testing specifications for adhesive strength
- ensures stable and error-free processing in series production
- optimises material utilisation and costs

OUR SOLUTION

Early involvement enabled us to specifically check the specified contour and adjust it to achieve optimum material utilisation and a reliable position of the moulded part on the roll.

The liner and finger lifts were also ergonomically redesigned to ensure fast and error-free processing in the semi-automated assembly process.

At the same time, the adhesive performance was technically verified. Together with the material manufacturer, we carried out a TechScan wetting test on the plastic component. This revealed a need for optimisation in the assembly device, which was implemented in consultation with the customer.

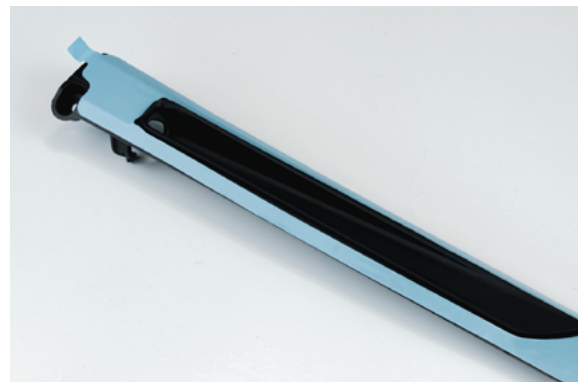
The result: wetting of over 95% and adhesive strength that reliably meets OEM specifications.

THE RESULT

A process-stable and economically optimised fastening concept. All requirements in terms of quality, appearance and performance were met; costs were significantly reduced.

At a glance

- Early involvement in development
- Targeted material and process optimisation
- Reliable assembly process despite challenging installation position
- Wetting >95% – OEM specification met
- High repeat accuracy and clean finish in series production



WHY INNO TAPE

With almost 20 years of experience in adhesive tape converting for the automotive industry, we know that successful solutions arise when technology, process and cost-effectiveness are considered together. We support development projects from the initial idea to series production – with material expertise, precision and a passion for functional adhesive solutions.

AND WHAT CAN WE DO FOR YOU?

No matter how far along you are in the project, feel free to contact us – we will support you and take the work off your hands: as a partner, manufacturer-independent, flexible and fast.

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