CASE STUDY

AEROFIN BONDING

WHEN FIVE PARTS BECOME ONE

A plastic add-on part on the roof edge spoiler was to be bonded with five individual adhesive tapes – precisely, quickly and reliably. However, the previous solution with individual parts and liner bridges was complex, error-prone and unstable.

INNO TAPE developed a customised adhesive tape assembly in which all five moulded adhesive tape parts lie on a common liner – with positioning aids, grip tabs and optimised packaging. The result: 70% time savings and a stable, reproducible assembly process.

Find out in our case study how well thought-out packaging simplifies complex bonding processes.

AEROFIN BONDING

WHEN FIVE PARTS BECOME ONE

INITIAL SITUATION

An automotive supplier was looking for a solution for bonding a so-called aerofin – a plastic component on the roof edge side spoiler. Five narrow webs had to be bonded simultaneously and precisely positioned. The previous supplier solved this with individual parts for each bar. To detach the liner in one step after bonding, so-called liner bridges were placed between the individual parts.

This solution was favourable in terms of material, but involved enormous effort and a high potential for errors. For example, the liner bridges often did not hold and did not reliably pull off the second liner – which regularly led to process interruptions.

The challenges

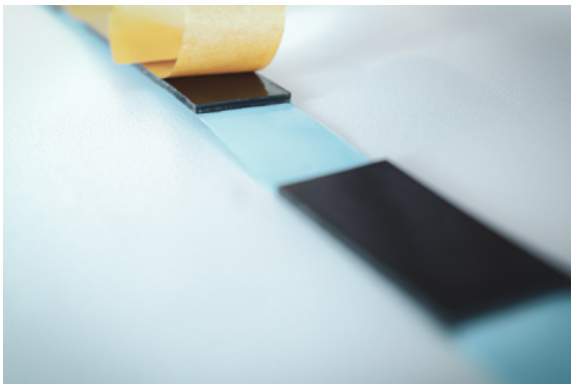
- Elaborate preparation with individual parts and liner bridges
- Unreliable material bonding
- Process interruptions in the line
- Lack of repeat accuracy during bonding
- High time and labour costs

Objective

The company was looking for a process-stable, efficient and easy-to-assemble solution with which all adhesive tapes could be positioned and processed in a single work step.

OUR SOLUTION

Instead of continuing to process the five bars as individual parts, we developed a completely new adhesive tape assembly that combines the individual elements on a common liner.



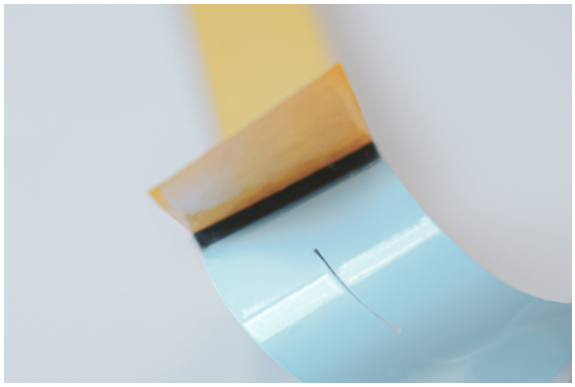
In concrete terms, this means: All five moulded adhesive tape parts lie exactly at the required distance from each other on a liner, are covered with a second, continuous liner and have protruding areas on both sides that serve as grip tabs.

This means that the complete bonding set can be positioned in one step without having to remove or readjust individual parts. The first liner is removed, the component is positioned precisely, then the second liner is removed – done.

Additional optimisations

For precise alignment, we integrated laser slits and optical markings that clearly define the positioning of the adhesive tape. This not only makes assembly faster, but also more reliable and ergonomic.

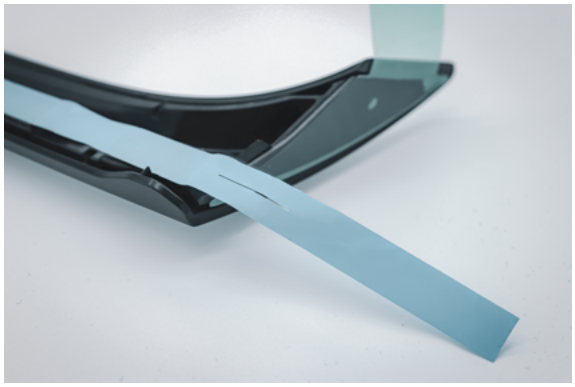
What used to take more than a minute can now be done in 15 to 20 seconds – with consistent quality and minimal risk of errors.

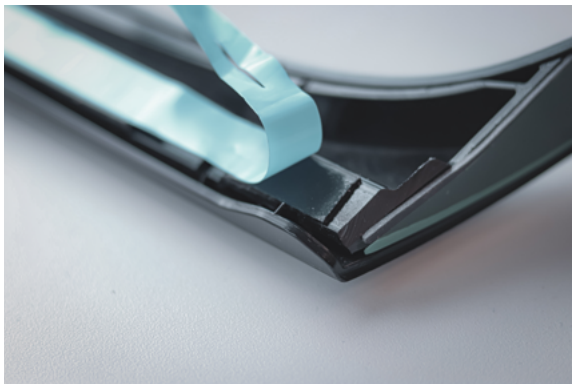


THE RESULT

The solution was immediately convincing: what was previously complex and error-prone is now bonded in one step - stably, efficiently and reproducibly.

Due to its success, the concept was transferred directly to another vehicle model. Incidentally, it took less than six months from analysing the parts to the finished solution.





At a glance

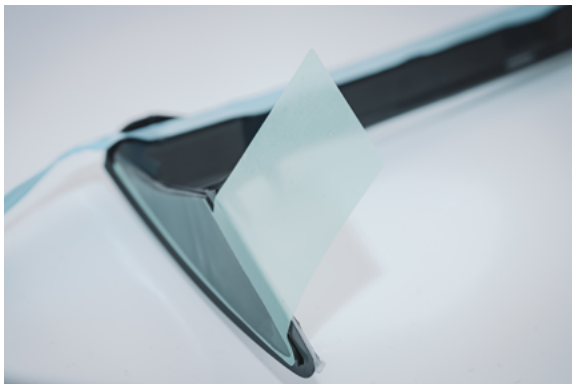
- 70 % time saving in the assembly process
- High process reliability and repeatability
- Customisable design for other components and models
- Transferable to similar applications

FURTHER APPLICATIONS

The collaboration resulted in two additional solutions that further optimised the assembly process:

1. Spacer pad with tear-resistant liner
This pad is only removed after the part has been fitted and prevents rattling noises or visible gaps. Even with varying contact pressure, it ensures a clean, tight connection – the gap remains visually closed (black finish).

2. Protective film for the PMMA outer shell
To protect the sensitive surface during transport and assembly, a special film contour was developed that precisely follows the shape of the component and its curvature.
The film is only removed at the dealership.



WHY INNO TAPE

With almost 20 years of experience as a specialist for self-adhesive moulded parts in the automotive industry, we combine material expertise with process understanding. We develop and customise solutions that precisely match your assembly processes – whether prototype, series or complex multi-layer systems.

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 do the work for you: in partnership, manufacturer-independent, flexible and fast.

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