

Application Case: Corona pre-treatment

Pre-treatment for demanding bonds in the home appliances sector.

There are customer applications that require more from the Bonding Engineers' adhesive tapes than "just" to bond. Apart from the special functions, a bonding solution may have to fulfill within an application – sealing, being electrically or thermally conductive, resistance against heat or cold – the substrate surface itself might be a challenging factor for the joint.

The home appliances products of our partners from the consumer goods and electronics industries are not only changing quickly with regards to their design but they become smarter as well: operating elements are frequently realized as touch-screen solutions that are built into the device and can be controlled manually or via app. In our current application case, a touch-display is to be installed into the front panel of a dishwasher. At the same time, this panel is meant to disappear as soon as the door of the dishwasher is closed, i. e. it is designed to be integrated at the narrow top of door.

Here, a Lohmann bonding solution has a fair bit of work to do. The gaps for small displays and buttons demand for high-precision die-cuts. They have to join multiple layers and materials, which ensure the smooth electrical operation of the device. Inter alia for this reason, sealing against liquids, steam and cleaning agents has to be guaranteed as well as a compensation of the different expansion coefficients during the repeated use of the device. Behind the upper surface of the display, there are screen print labels that mustn't be affected by the adhesion.

During the initial tests with the plastic front panels at the workstation in the Bonding Arena®, it became clear: the range of high-performance adhesive tapes that have the desired features is not enough to optimally fix the individual components to the plastic front panel.

For that, the Bonding Engineers have a solution – they take their customers plus the surface substrate to get a corona pre-treatment. There are various devices, ready to be applied to differently sized surfaces. For example, plastic components that are difficult to wet can be subjected to a corona discharge which creates polar molecules on the surface allowing for adhesives to (better) bond to them. If an adhesive tape does not have the desired tack but all of the other characteristics meet the requirements, such a pre-treatment can achieve the wanted final adhesion – which is ageing resistant, of course.

You have a bonding demand for us, too?

Please do not hesitate to get in touch!

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Product recommendations:

- DuploCOLL® VP 7367
- DuploCOLL® 918
- DuploCOLL® 6311
- DuploCOLL® 935 F/P