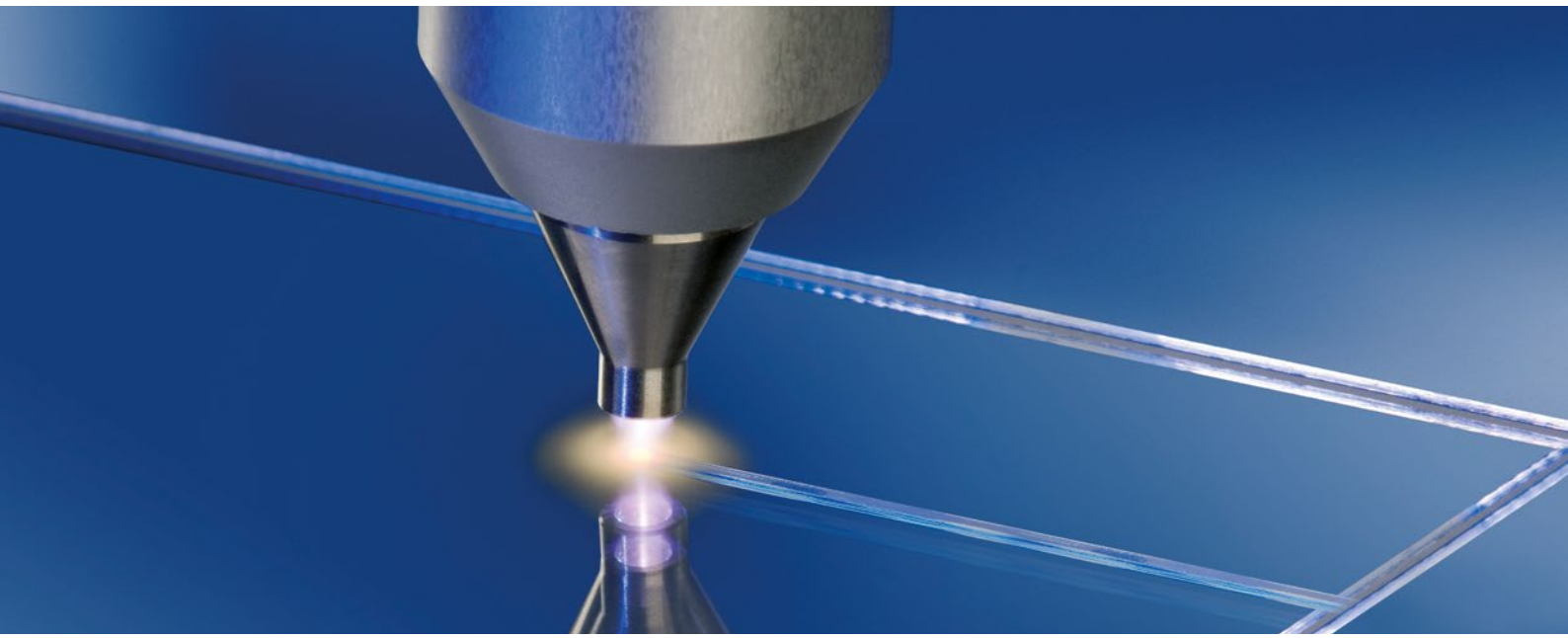
plasmatreat



APPLICATION INFORMATION

Secure and Efficient Processing of Glass

Highly efficient modelling of glass surfaces for subsequent processing steps

Ultra-fine cleaning of glass surfaces

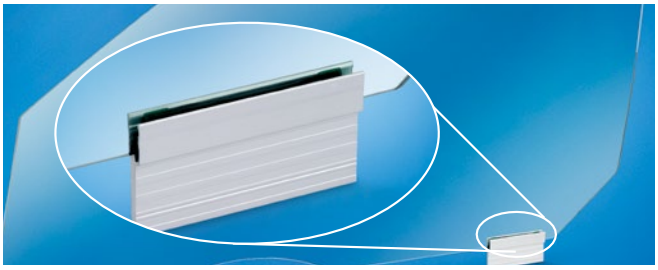
A application involving the use of glass is often exposed to extreme conditions through environmental influences. Water, salts, solvents, lyes, UV radiation put a strain on adhesive joints, labelling and paintwork. Effective surface pretreatment is absolutely essential for secure and long lasting stable bonds.
Thanks to the dry and inline-compatible Openair-Plasma® pretreatment, chemical or organic substances can be selectively broken up without damaging the surface structure. The subsequently applied print colour, glue or foam sealants are applied directly onto the material.

Openair-Plasma® applications:

- Cleaning of insulating glass from fire protection coatings and diffusionstable connections
- Bonding of handles and cover plates to white goods, for example baking oven doors. But also for the bonding of glass into the frame windows of washine machines
- Water resistant bonding on solar panels, for example backrail bonding

Openair-Plasma® pretreatment: oven glass before handles are bonded

Car front windscreen

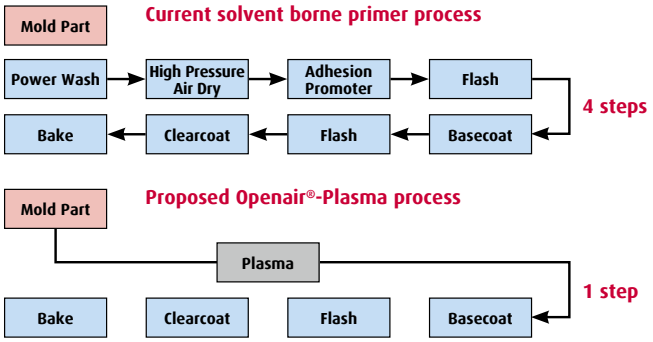


Car side window

Car windows

Safe and long-lasting stable adhesion of car side windows thanks to Openair-Plasma® treatment. Before the application of the adhesive system, the glass used is cleaned and activated in the area of the window regulator mounts.

PlasmaPlus® coating: in addition to Openair-Plasma® cleaning/activation, a PlasmaPlus® nanocoating can be applied as an adhesion promotion layer. The application is carried out fully automatically and is robot-assisted. This can significantly reduce the time required for the production process of the adhesion of car front windows while eliminating the use of a solvent and removing the conventional mechanical processing with subsequent wet chemical cleaning.



Backrail bonding

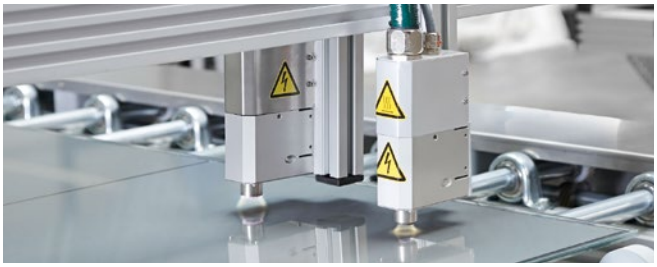
Backrails must be securely bonded to the panel. The in-line plasma systems developed by Plasmatreat provide effective pretreatment for permanent, secure backrail bonds. Integrated monitoring systems and the control of the plasma intensity and plasma jet allow a permanent monitoring of the production system. The data is transferred to the central computer or to the coding of the module via a bus system (Profi-Bus or Ethernet), thus ensuring uninterrupted traceability of the production parameters.

Solar panel with aluminum frame

Weather-resistant bonding of solar panels

Solar panels are constantly exposed to the effects of weather, at the same time they are subject to long service life expectations. The penetration of humidity into the panel must by all means be avoided, as this could destroy the sensitive solar cells or cause a loss in performance. Silicon, often used for the adhesion of glass/aluminium must be adhesively bonded securely. Plasma cleaning of the glass and the aluminium with a subsequent PlasmaPlus® anti-corrosion coating on the metal helped to achieve the desired results. The penetration of humidity into the adhesive joint can be prevented in the long term.

- Reproducible, understandable process
- Full inline integration possible
- Dry and environmentally friendly



Openair-Plasma® pretreatment of the panel

Adhesive bonding of the components to the treated surface
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Separation of glass with microcrack reduction

The Openair-Plasma® technology has been used for surface cleaning, activation and coating. Thanks to further development of the nozzle technology it is possible to apply the method to the contour-accurate separation of glass. The desired contour is traced with the plasma nozzle and a precise release of thermal energy is applied into the glass. The microcrack formation at the ends is greatly reduced in comparison to conventional methods, the glass exhibits improved fracture characteristics.

- Accurate contour and contact-free process
- Only electricity and compressed air required for operation
- Smoothly cut contours

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AIDE198_2023_10_25 Processing of glass