

Bonding plastic activated with Openair®-Plasma

for secure and sustainably stable adhesion – even on difficult surfaces

For a secure and sustainably suitable adhesion of adhesives on plastic a good pretreatment is absolutely necessary. The Openair®-Plasma represents an Inline- and Robot capable procedure for surface activation at highest level.



Modern headlamps, bonded waterproof

In order that they last the life of the vehicle they must be protected against moisture penetration.

- stable, secure and diffusion-dense bonding
- the use of non-partially highly filled materials
- pre-treatment immediately prior to final assembly
- In use for about 10 years in large scale



Structural bonding of lorry superstructure

Lorry-Trailers for the refrigeration and cool cargo get their stability exclusive by the adhesion of the wall and blankets elements. A secure Pre-treatment is absolutely necessary.

- additional pre-cleaning or surface abrasion
- 100% plasma monitoring resulting in a safe procedure
- a fully automatic process
- pretreatment with plasma units with four rotating jets each with maximum width of 200 mm on each panel side



Cost-saving assembly of white goods

The precise pre-treatment of the bonding areas the stable glue in of concrete counterweight to the plastic assembly of a modern washing machine.

- highest precision in serial production
- no damage of the visible surface area
- homogenous treatment by the use of rotating jets
- significant cost savings



High-tech adhesive bonds in electronics

Exact pretreatment of bonding surfaces makes bonding of polycarbonate windows to casing shells possible with:

- the use of highly developed UV glues, hardening by radiation through the bonded component
- the highest possible precision in mass production
- no damage to metal inlays due to electrically neutral pretreatment
- homogeneity of treatment by means of rotating jets and the avoidance of damage to very sensitive surfaces



Secure compounds in the car.

Airbag coverings of PUR are safely glued into the PP coverings after an application of plasma:

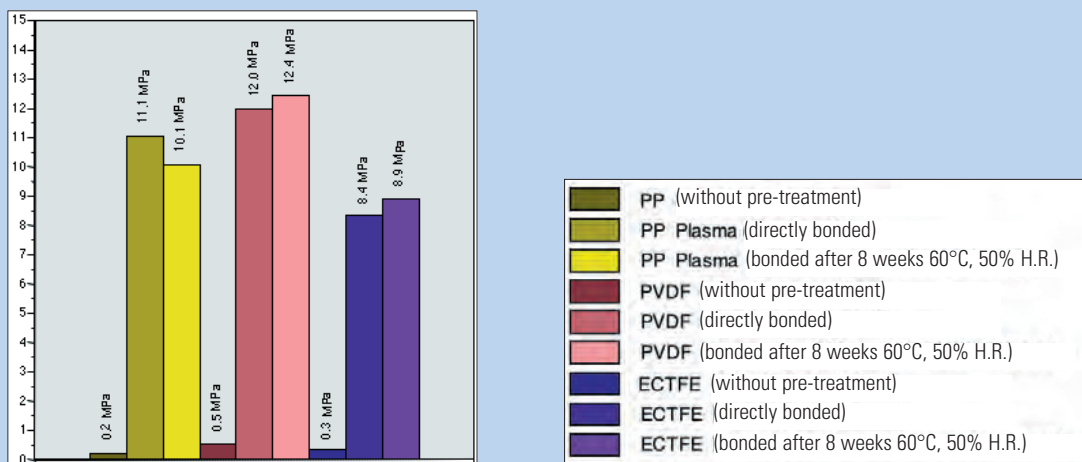
- any residues eventually left over from spraying of additives being thoroughly removed by the plasma, leaving the mating even and reliable
- Openair®-Plasma being particularly suitable for activating the surfaces of non-polar and recycled materials (increasingly employed in vehicle interiors) in an economical and procedurally safe manner at a high level

The principles of adhesion build-up on plasma treated surfaces

A polymer surface treated with Openair®-Plasma is in most cases changed reactively. The long molecular chains are severed by the energy contained in the plasma, while at the same time reacting with atmospheric oxygen. Consequently the surface is frequently functiona-

lised to an extent of 25 percent. If subsequently adhesion systems like glues or paints bond onto these newly created reactive groups, then a very pronounced increase in the adhesion of the bond can generally be expected.

Shear tensions in plastic pastings



Even hard-to-paste plastics like PP or fluorinated compounds show clear adhesion build-up after activation with plasma. Moreover, the activated components remain reliably capable of being bonded even after storage for eight weeks at 60°C and 50% humidity.

Environmentally friendly bonding enhancement

From the High-tech bonding assembly to the easy wet labelling or the bonding of folding boxes: A precise Pre-treatment of the bonding area by the high developed Plasma jets allow the use of modern solventless UV-adhesives as also the use of natural, water based systems.

The complete Openair®-Plasma-System is absolutely Inline and Robot capable. It is easily to integrate to existing production lines. Therefore it is a very multifunctional instrument for fine cleaning and activation of polymer surfaces.



Top solutions – experienced Plasmamatreat technicians are available to you worldwide to solve adhesion problems.