

## TWEHA ADHESIVES FOR BONDING ALUMINUM

Aluminium bonding can be an interesting alternative both technically and economically. What makes adhesives such a good substitute for welding or bolting or nuts? Briefly, the advantages are as follows:

- Adhesive distributes tension better than bolts, nuts and welds.
- Adhesive has no negative effect on the integrity of the aluminum structure.
- Adhesive is flexible and can handle large differences in thermal expansion coefficients.
- Adhesive is more resistant to noise vibration and has a longer lifespan compared to other joining techniques.
- Adhesives are available for bonding aluminum that do not require pretreatment methods.
- Bonding aluminum is faster than drilling and welding.
- Joints with adhesives look neater than when other joining methods are used.

When using TWEHA MetalMate, no pre-treatment method is required for bonding with aluminum: this is more economical and faster. This is because the primer required for pre-treatment is already 'built into' the adhesive itself.

- which greatly simplifies the application of our systems, one application-run less, thus reducing the risk for errors;
- you are not bound by a time limit in application as you are when using a primer;
- the lack of these dangerous primers reduces environmental and health risks, and
- the absence of a primer makes it possible to process the bonding system at low temperatures (< 5 °C).

Actually, primers are aggressive problem solvers. Designed to penetrate to the substrate to ensure better adhesion. It increases covering capacity of the adhesive and thereby reduces the risk of failure and hides the shortcomings of the competitors adhesives in comparison with TWEHA's Bonding Products.

Primers generally consist of a reactive chemical agent which is dosed in a solvent. This solvent evaporates after application, leaving behind the active agent. This often aggressive agent 'etches' the surface to be bonded, so that the adhesive is able to penetrate. This leads to a change of the surface of the substrate. A crater-like structure is formed to accommodate the mechanical "cross-linking" of the adhesive.

Different types of primers are required for different surfaces, depending upon their characteristics and acts as a "chemical bridge" between the substrate and the adhesive. Please note substrates and types of primer are not interchangeably!

A most important disadvantage of using a primer is that the adhesive bead must be applied within a specified time after the application of the primer! So processing for both primer and bonding on the scaffold is an awkward and obstructive necessity.

Finally aggressive primers are harmful to humans and environment.

Pre-cleaning and degreasing (with TWEHA Cleaner+) is incidentally still an important step to achieve correct bonding.

To obtain a black surface on the blank aluminum showing in the joints you can use TWEHA Blacken.