

ALUMINUM SURFACE TREATMENT

FOR FUTURE AUTOMOBILE

Surface treatment technique to create the future of Mobility

What kind of joining techniques are required for aluminum-plastic composite parts?
Will aluminum-plastic composite parts be the key to weight reduction?



As the trend toward multi-materialization continues, the use of aluminum-plastic composite materials are expanding to include structural components such as instrument panel beams, radiator supports, and pedals. Resin on its own has lower strength than metal materials and is subject to greater deformation under load, so it is necessary to prevent elongation and fracture. Therefore, by compositing with aluminum material, these concerns can be eliminated, and weight reduction and reliability can be improved. On the other hand, since the thermal expansion coefficient of each material to be combined differs, repeated cold and heat cycles from high to low temperatures will affect the bonding surface. The key technology to

solve this problem is the surface treatment technology for aluminum components that improves the adhesion between different materials. UACJ's KO treatment, a highly adhesive surface treatment, forms a porous oxide film on the metal surface by alternating electrolysis of aluminum materials in an alkaline electrolytic solution. Since this is a very thin film treatment, only a few tenths of the thickness of ordinary anode oxide film, it strongly adheres to resins, adhesives, and coating films, resulting in superior strength, thermal conductivity, and heat resistance. The technology has been established for high performance printed circuit boards, and can contribute to weight reduction of automobiles.

At the development site, preparations for the test, in which aluminum parts are set in the injection molding machine and resin brackets are joined by injection, were in full swing.

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