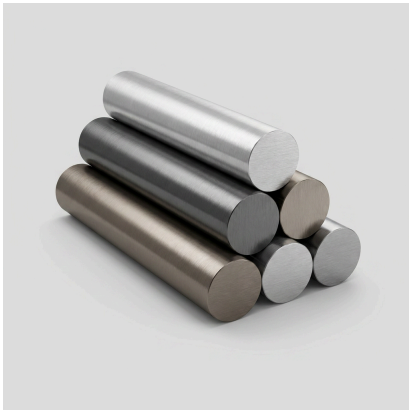


QUALITY CONTROL OF ALUMINUM ALLOYS BY MEASURING CONDUCTIVITY

Conventional hardness tests for aluminum alloys are destructive or slow. SIGMATEST enables fast, non-destructive conductivity measurement.



THE CHALLENGE

Aluminum alloys used in aerospace and automotive applications must meet strict mechanical and structural requirements. In heat-treatable alloys, hardness and strength change over time due to age or precipitation hardening. Conventional hardness tests or microscopic analysis are either destructive, time-consuming or unsuitable for on-site process monitoring.

THE SOLUTION

Electrical conductivity measurement with the SIGMATEST 2.070 as well as SIGMATEST TCM provides a fast and non-destructive alternative. Since electron mobility is influenced by alloying elements, precipitation state and crystal structure, conductivity correlates directly with the aging condition and microstructural changes. The compact, temperature-compensated device enables simple probe placement and operator-independent results.



THE RESULT

The precipitation state and material condition can be verified directly in production or incoming inspection. Heat treatment quality, residual stresses and structural variations are identified without damaging the component. Portable conductivity testing improves process control, reduces inspection time and ensures consistent alloy performance.

THE PRODUCTS

SIGMA TEST

Portable conductivity meter for fast and reliable testing of non-ferromagnetic metals



SIGMA TEST TCM

Electrical conductivity measurement of non-ferromagnetic metals



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