APPLICATION NOTE

QUALIFICATION OF COPPER-BASED ALLOYS FOR PRODUCTION OF ELECTRIC COMPONENTS

Incorrect alloy compositions in copper materials can reduce the conductivity of electrical components. Conductivity measurement reliably qualifies copper-based alloys before production.

THE CHALLENGE

Copper-based alloys such as bronze, brass and nickel-silver are widely used in electrical applications requiring high conductivity and non-magnetic behavior. For connectors and sensitive electronic systems, relative permeability must remain close to μr = 1.00000. Precise measurement of very low magnetic susceptibility is therefore essential to ensure compliance with industry standards.

THE SOLUTION

Permeability testing is carried out using the MAGNETOSCOP 1.070 with a dedicated permeability probe in accordance with IEC 60404-15 and ASTM A342M. The portable system measures μr in the range from 1.00000 to 2.00000 at a defined magnetizing field of 30 kA/m. It enables fast, in-situ inspection of raw materials and semi-finished components without complex preparation.

THE RESULT

High-resolution measurement ensures reliable differentiation between non-magnetic and weakly magnetic materials. The system supports qualification of copper-based alloys for magnetic-sensitive applications such as connectors and precision electronics. Accurate permeability control contributes to consistent material performance and compliance with specified μr limits.

FOERSTER

MAGNETOSCOP

Portable Solution For Magnetic Field and Permeability Measurement

PROBES AND SENSORS FOR MAGNETOSCOP & MAGNETOMAT

Flexible Solutions for Magnetic Field and Permeability Measurements

foerstergroup.com

The FOERSTER Group is represented by subsidiaries and representatives in over 60 countries worldwide. You can find a complete overview on our website.

Headquarters
Institut Dr. Foerster GmbH & Co. KG

In Laisen 70
72766 Reutlingen
Germany

+49 7121 140 0
info@foerstergroup.com

© Copyright 2026 – Copyright notice: All contents of this work, in particular texts, photographs and graphics, are protected by copyright. Unless explicitly stated otherwise, the copyright lies with Institut Dr. Foerster GmbH & Co. KG. Please contact us if you wish to use any part of this work.

Generated: 2026-10-27 11:53:13