

# Competence and Knowledge – Our Strength, Your Advantage

## Coating Thickness Measuring Instrument for Universal Use

Quality Control of PC-Boards and Electroplated Surfaces



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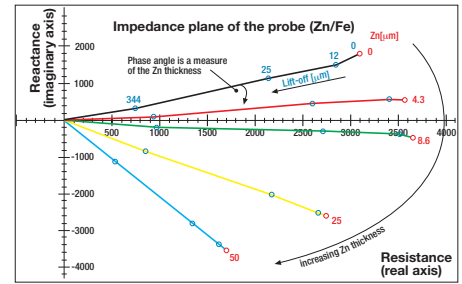
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## Measurement Method

The PHASCOPE PMP10 utilizes the phase-sensitive eddy-current method according to the standard ISO 21968. Compared to conventional eddy-current method according to ISO 2360, this measuring method has significant advantages for the thickness measurement of metallic surface coatings.

By using the phase position of the probe signal instead of the amplitude for the coating thickness computation, the interfering influences of the specimen shape and of the probe lift-off are significantly reduced. This is illustrated in the figure to the right.



## Copper Coating Measurements For PC-Board Production

Available probes:

- ESL080B and ESL080V for Cu thickness measurements in PC-board boreholes in a range from 5 – 80 μm (0.2 – 3.2 mils).
- ESD20Cu for surface copper thickness measurements on PC-boards.  
1 – 100 μm (0.04 – 4 mils) at 240 kHz  
1 – 270 μm (0.04 – 10.8 mils) at 60 kHz



PMP10 with borehole calibration boards, probe ESL080B and printer.



Copper cladding thickness measurement in boreholes using the probe ESL080V.

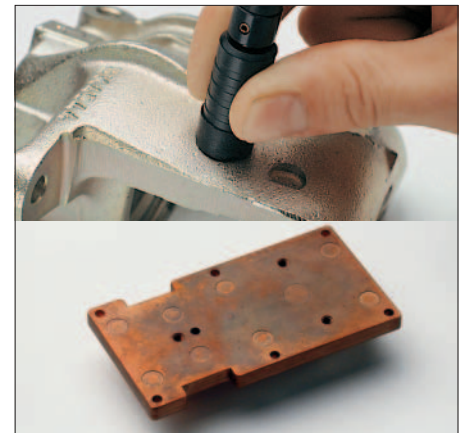
## Measurement of Non-Ferrous Metal Coatings on Steel, NF or Iso Substrate Materials

The following probes are available:

- ESD20Cu for the measurement of non-ferrous metal (NF) coatings of Cu, Al, brass, etc. on electr. non-conducting (Iso) substrate materials.
- ESD20Zn for NF coatings on steel or iron, in particular with rough surfaces, or for NF coatings with a high electr. conductivity on NF substrate materials with a low conductivity, e.g., Cu/brass.
- ESD20Ni for Ni/Fe  
1 – 50 μm (0.04 – 2 mils) at 240 kHz  
2 – 100 μm (0.08 – 4 mils) at 60 kHz
- ESD2.4 for Zn/Fe on small parts



Probe ESD2.4 is particularly well suited for small parts, because a calibration with adjustment to the measuring spot geometry is typically not required.



Measurements on rough surfaces (top image: Zn/Fe with EDS20Zn) or NF coatings on NF base (bottom image: Cu/brass).

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