Coating Thickness Gauge: DFT Elcometer:

Principle:

Coating thickness is an important variable that plays a role in product quality, process control, and cost control. The Elcometer 355 Coating Thickness Gauge is a handheld gauge for fast and accurate measurement of the thickness of coatings.
With a memory of up to 10,000 readings in multiple batches and accuracy to ±1%, your gauge is a measuring system packed with the saving and cost cutting features. It is used for measuring dry film coatings thickness non-destructively, on ferrous or non-ferrous substrates.
Different probe heads are used for each measurement; one probe based on Eddy Current measurements and the other by magnetic induction measurements.

Current model:

Figure: Elcometer 355 Coating Thickness Gauge

Video Link: https://www.youtube.com/watch?v=r-zrZe5Sfoo

Operation:

Eddy Current measurement. : It is based on the principle of generating circular electrical currents (Eddy currents) in a conductive material. It is suitable for non-ferrous substrates, or any film-substrate combination, provided that the atomic number of the coating and the substrate differs (≥5).

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Magnetic-induction measurement:This is suitable for ferrous substrates. The device contains a coil system, through which an alternating electromagnetic field is introduced. The method is a contact measurement method. An exciter current generates a low frequency magnetic field. The resultant magnetic field is recorded via a measuring coil. The signal is then transformed into the precise coat thickness value.

Instrument Description

Sub Folder: Physical Analysis

Samples:

The device is used for all types of coatings such as oxide, metallic, enamel coatings, paints, thin films, and sprayed coatings.

Standards:

The Elcometer 355 can be used in accordance with International Standards; ASTM B499, ASTM D7091, ASTM E376, ASTM B244 (probes N1, N4), BS EN ISO 1461, BS EN ISO 2178:2016, ISO 2063:2019, ISO 2808:2019, ISO 10074:2010, ISO 19840:2012, IMO MSC.215 (82), IMO MSC.244(83), NF T30-124 (March 2020), and SSPC-PA2.

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