

National Bureau of Standards

Certificate

Standard Reference Material 1358

Certified Coating Thickness Calibration Standard

(Nonmagnetic Coating on Steel)

This Standard Reference Material (SRM) consists of three 30 x 30 mm coating thickness plates mounted on a card and that are designed for calibrating magnetic type thickness gages used to measure thicknesses of nonmagnetic coatings on steel. The coatings are electrodeposited copper with a thin layer of chromium for wear resistance on steel substrates, which have the magnetic properties of AISI 1010 steel. Magnetic type thickness gages are often used to measure the thickness of paint and other organic coatings on steel, as well as zinc (galvanized) and other nonmagnetic metallic coatings. They can also be used to estimate magnetic properties of austenitic stainless steel weld metal. Because the magnetic properties of the weld metal are closely related to the ferrite content of the weld, these instruments are used to estimate the ferrite content.

The NOMINAL coating thicknesses for this SRM are:

Plate 1	80 μm
Plate 2	225 μm
Plate 3	1000 μm

The CERTIFIED coating thicknesses are printed on the card, and are certified to be within $\pm 5\%$ of the true thicknesses.

CAUTION: Any modification to this SRM, e.g., altering or removing a plate, nullifies the certification of the plate and the SRM.

The certified thicknesses are based on measurements made with instruments that were calibrated with NBS master standards. To further ensure accuracy, the thickness of one of every 25 plates is determined by gravimetric procedures.

The card on which the four plates are mounted consists of a steel sheet sandwiched between two cardboard layers. The steel sheet gives the appearance to most instruments of an infinitely thick substrate.

NOTE: This SRM should not be left unprotected in a corrosive laboratory environment as some corrosion may occur. If such occurs, the corrosion products often can be removed with a non-abrasive polishing cream without affecting the certification.

Recalibration services are available at NBS and are suggested if the plates are visibly worn, or corroded.

July 5, 1988
Gaithersburg, MD 20899
(Revision of Certificate
dated 5-1-84 and 9-11-85)

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Office of Standard Reference Materials

