

COATING THICKNESS



Coating thickness gauges operate on three key principles: magnetic induction, eddy-current, and ultrasonic. The magnetic induction method is ideal for magnetic surfaces, measuring the thickness based on magnetic fluidity and resistance. Eddy-current evaluation, on the other hand, relies on electromagnetic fields and probe conductance near a metal surface. Ultrasonic measurement involves transmitting vibrations through a coating with a probe and couplant. Each principle offers unique advantages depending on the surface material, from magnetic coatings to non-conductive surfaces like aircraft exteriors or plastic.



Coating thickness is crucial for quality, process control, and cost efficiency in production. Understanding the various measurement instruments and techniques, considering factors like coating type, substrate, and equipment costs, ensures optimal performance and productivity. Techniques range from nondestructive methods like magnetic and ultrasonic measurement to destructive methods like cross-sectioning, each offering unique benefits depending on the application. Choosing the right approach enhances coating performance and operational effectiveness.

A coating thickness gauge, also known as a paint meter, is essential for measuring dry film thickness. This measurement is crucial in the coatings industry as it directly influences the coating process, quality, and cost. It helps assess a coating's lifespan, appearance, performance, and compliance with International Standards.