





FINE
GOLD
9999.9



Benefits of Vanta™ XRF Analyzers

Vanta handheld XRF provide immediate, on-site elemental measurements for analyzing precious metals, including gold, platinum, silver, and rhodium.

-  Continuous operation at temperatures up to 50 °C (122 °F)*
-  IP55/IP54 rated for resistance to water and dust
-  Rugged and built to pass a 1.3 m (4 ft) drop test (MIL-STD-810G) to protect against falls
-  Use the Evident Connect cloud to access and share data across multiple platforms from any location**

* With optional fan.

** Requires optional wireless adapter.

Application Note

RAISING THE BAR FOR GOLD BULLION TESTING

Our portable X-ray fluorescence (XRF) analyzers provide accurate surface chemistry of bullion bars, while our ultrasonic flaw detectors offer a nondestructive, fast, and reliable method to check if the gold bars are adulterated with insertions or voids. Combined, these two technologies enable you to be confident in the purity and integrity of your bullion bars.

Gold Bar Analysis Without the Need for Drilling or Cutting

The rise in fake gold bullion bars made by inserting slugs of inexpensive metals (such as tungsten) is a concern for the gold industry. These insertions are difficult and often impossible to identify visually, by measuring the weight, or using radiography technologies. Portable XRF analyzers provide an accurate analysis of precious metals but are limited to the surface of the metal being tested.

Ultrasonic flaw detectors can be used to help ensure that a bullion bar is homogeneous and free of insertions. When combined with Vanta portable XRF results, you can be confident that the surface chemistry obtained by your analyzer is representative of the chemistry throughout the entire bar.

Ultrasonic flaw detectors work by generating pulses of high-frequency sound waves in a material, which then reflect back to their source after they strike a boundary with a different material. This could be the bottom of the gold bar, an insertion within the gold bar (e.g., a tungsten metal insertion), or an internal void. Use our flaw detectors to distinguish between waves reflecting from the bottom of the gold bar and waves reflecting from insertions or internal voids.



Solid Gold Bar

Sound wave reflection from the bottom wall



Fake Gold Bar

Sound wave reflection from the insertion

This test is set up by coupling the transducer to a known solid gold bar and identifying the echo from the bottom surface. A flaw gate may be used to monitor the interval ahead of this backwall. Any echoes appearing within the region marked by the gate indicate that the sound beam is reflecting off a discontinuity, and the bar should be further inspected by other means.