ASTM E3246-21 - The New Standard for Portable Rockwell Testing

From now on, the portable Rockwell method is officially ASTM-Standardized and fully complies with the ASTM E3246-21. Portable Rockwell is a purely static measurement technique which covers a wide range of applications for hardness measurements.

As shown on ATSM.org, this test method covers the determination of the Differential Indentation Depth hardness of metallic materials by the Differential Indentation Depth hardness principle. This standard provides the requirements for Differential Indentation Depth hardness testing machines and the procedures for performing Differential Indentation Depth hardness tests.

The Differential Indentation Depth hardness test is an empirical indentation hardness test that can provide useful information about metallic materials. This information can correlate to tensile strength, wear resistance, ductility, and other physical characteristics of metallic materials, and can be useful in quality control and selection of materials.

Applications

Portable Rockwell is a portable counterpart measurement method for the bench-top Rockwell. The Portable Rockwell method covers a wide range of applications that are not easy, or even impossible to be measured with UCI or Leeb. Applications for hardness measurements include small, light, thin-walled or tubular test objects such as wires, metal sheets, thin-walled extruded pipes, large and heavy objects.

Main Advantages

Portable Rockwell is a purely static measurement technique. In this method, the object cannot oscillate, and vibrations are not induced by the instrument, hence no coupling of small objects is needed, thus being a complementary method to other portable testing techniques such as Ultrasonic Contact Impedance (UCI) or rebound method (Leeb). Because Portable Rockwell is at the same time a direct indentation method and the result computation is not based on Young's modulus, this technique is also material-independent. Hence it can be applied to almost all materials without corrections and can be even used as a reference method for the fine adjustments of conversion curves (e.g. for UCI or Leeb) for non-standard or highly exotic materials.

Equotip 550 Portable Rockwell - one of the few products compliant with ASTM E3246-21

5 extra features of the Equotip 550 Portable Rockwell to benefit your hardness inspections:

- No dependence on material due to the direct indentation method
- No mass and nearly no thickness limits: *Measure even 150-micron thick metal sheets, thin metal wires, thin-walled extruded tubes, etc.
- Can be used as a reference method for conversion curves corrections instead of bench-top Rockwell
- Swiss engineering and precision of the make guarantee long service time and best-in-class accuracy, fully digital
- Up to 50N total load (10N+40N)

*The minimum thickness must be indentation depth x10. E.g. for material with HRC45 hardness a minimum sample thickness of 150 micrometers is required.