

Maintain precision: The ultimate guide to hardness tester verification

Hardness testing audits keeping you up at night? Here's how to ensure compliance and quality assurance with your measurements.

Article Highlights (3 min read)

- Why regular verification is essential for maintaining the accuracy of hardness testers.
- Key guidelines to ensure reliable and consistent performance.
- Practical advice on how to guarantee traceability, perform multiple measurements, and protect test blocks from corrosion.

Why Verification is Important

Faulty measurements can cause good parts to be rejected or bad parts to be accepted, risking product failure, customer claims, or even supplier disqualification. To prevent this, it is vital to use testing equipment that consistently delivers accurate and precise values. This is ensured through regular verification.

Verification is a process in which a probe is used to measure a certified reference test block with a known, manufacturer-calibrated value, confirming that the instrument's readings are within the expected range. It is a critical procedure that ensures your hardness tester remains accurate over time, helping to detect deviations early and prevent costly quality issues.

Industry standards require both daily and periodic verification of hardness testing devices to ensure they remain in proper working condition. By following these requirements—outlined in standards such as ASTM A956 and ISO 16859—you ensure your device continues to meet industry expectations and delivers trustworthy results. It's important to note that test blocks are intended strictly for verification, not for adjusting or compensating device bias.

The test block plays a central role in this process, as it must represent a stable, traceable reference value to confirm the accuracy of the measurement. [Accredited test blocks](#) provide traceability to national standards and confidence in the results—making them essential for audit readiness, certification compliance, and maintaining long-term quality assurance.

Best Practices for Verification

Here are the practical steps for conducting verification. This article highlights the Leeb method and ISO 16859 standard, however the same recommendation steps can be applied to any other portable hardness testing method.

1. Use Certified Reference Materials (CRMs)

Always verify your hardness tester using Test Blocks (CRMs) that comply with the standards, like [Proceq original test blocks](#). These materials provide known hardness values essential for accurate verification.

Tip: Accredited calibrations for test blocks guarantee full traceability, and data reliability, which is very often required by Auditors.

2. Perform Multiple Measurements

Conduct 5 to 10 measurements during each verification session to account for any variability in the readings. This helps to ensure a more accurate assessment of the tester's performance.

Tip: Make sure each indentation is made on a fresh spot. The distance between indentations should be at least three times the diameter of the indentation to avoid interference.

3. Ensure Stable Support for the Test Block

Place the test block on a stable, vibration-free support. While an office table might seem sturdy, it may not provide the stability needed for accurate measurements. Instead, consider using a heavy steel object or a dedicated testing surface that can absorb vibrations and ensure consistency. This is especially important for the Leeb and UCI methods, that are "vibration" sensitive.

Tip: Always check the stability of the support before testing, especially in environments prone to vibrations or movements.

4. Inspect and Protect the Test Block

Regularly check the remaining surface of your test block for signs of corrosion. A corroded block shall not be used. Proper storage is key to maintaining their integrity and accuracy.

Tip: Never recondition or polish a test block, as this will alter its hardness and invalidate the verification process. Remember, a test block should only be used once at each spot to avoid hardened surfaces from previous indentations affecting subsequent readings.

5. Document Verification Results

This is the key! Keep detailed records of each verification session, including measured values, the condition of the reference block, and any adjustments made. Modern devices offer verification functionality, with digital execution fingerprint. This documentation is essential for tracking the performance of your tester over time, but also is a key-element for auditing processes, or during supplier evaluation process, shall you encounter any. See below how easy it is to conduct verification with a bulletproof, traceable documentation.

Tip: Review your records regularly to spot trends that may indicate a need for recalibration or maintenance, ensuring long-term accuracy and reliability.

Conclusion

Regular verification of hardness testers, following standard protocols, is essential to maintaining measurement accuracy and compliance with industry standards. By using [certified reference materials](#), performing multiple measurements, protecting test blocks from corrosion, and properly documenting your results, you ensure that your hardness tester remains a reliable tool in your quality control arsenal. This disciplined approach to verification underlines technical leadership and a commitment to excellence in materials testing and quality assurance, yet providing you peace of mind.

To celebrate the 50th anniversary of Equotip, we have special offers for Proceq Test Blocks - [Order yours now with up to 15% off!](#)

References:

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