

MOHS SCRATCH TEST FOR CONCRETE SURFACE HARDNESS

OVERVIEW

The Mohs Scratch Test uses a set of calibrated mineral picks (1–10 Mohs scale) to determine the relative hardness of a concrete surface. The hardness rating reflects the resistance of the surface paste and near-surface aggregate, helping contractors evaluate tool selection, bond choice, and surface preparation requirements.

Surface Condition

- Test only on clean, bare concrete.
- Remove coatings, sealers, and loose debris before testing.

How to Perform the Test

- Select a Mohs pick and drag it firmly across the surface at a consistent angle and force.
- If the pick scratches the surface, use a lower-number pick.
- If the pick does not scratch, use the next higher number.
- The hardness value is the highest number pick that does not scratch the surface.
- Take multiple readings in different areas, especially where concrete conditions vary.

Interpretation of Results

- Mohs 2–3: Very soft concrete; often weak surface paste, high moisture, or undercured slab. Requires extra-hard bond diamonds.
- Mohs 3–4: Soft concrete; requires hard bond diamonds.
- Mohs 4–6: Medium hardness; requires medium bond diamonds.
- Mohs 6–7: Hard concrete; requires soft bond diamonds and may slow prep.
- Mohs 7–9: Very hard concrete; requires extra-soft bond diamonds.

Why It Matters

- Determines correct diamond tooling bond (soft vs. hard bond).
- Indicates risk of substrate gouging or excessive tool wear.
- Helps predict challenges with coating adhesion, grinding speed, and profiling requirements.

Best Practices

- Test multiple locations, including edges, patched areas, and varying slab sections.
- Use consistent pressure and angle when performing scratches.
- Combine Mohs testing with other evaluation methods (CSP, rebound hammer, moisture tests) for a complete substrate assessment.
- Record all hardness values for documentation and tooling selection.