
Stone Classification Encyclopedia: Igneous / Sedimentary / Metamorphic

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Intended readers: all industry professionals

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The Geological Triad

Igneous: magma cooling and crystallising — granite, basalt. Direct mineral crystallisation; high hardness, low porosity.

Sedimentary: debris and biological remains deposited and cemented — limestone, sandstone, travertine. Pronounced bedding, soft tones.

Metamorphic: parent rock re-crystallised under heat and pressure — marble (from limestone), quartzite (from sandstone), slate (from shale).

Commercial vs Geological Classification

Commercially, "marble" broadly means polishable carbonate stones (including serpentinites), while "granite" broadly means hard silicate stones — not identical to the geological definitions. Purchase contracts should attach a petrographic test report to fix the material precisely.

How to Identify a Hand Sample Quickly

Dilute HCl fizzes → carbonate (marble / limestone / travertine).

Knife cannot scratch it; sparkling grains → granite family.

Layers peel apart → slate; granite-hard with marble-like veining → quartzite.

Family Quick Table

Lithology / representative varieties / absorption range / Mohs hardness / typical uses — see Chapter 2 of our Natural Stone Selection Guide in this series.