Natural Stone Selection Guide

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Intended readers: architects / owners / interior designers

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The First Principle: Fit-for-Purpose over Personal Preference

The first rule of stone selection is not "which texture do I like", but "how will this space be used". Foot-traffic intensity, contact media (water / oil / acid), maintenance capability and budget structure together define the candidate set of stone families and surface finishes.

- Choose the stone family first: high-traffic public areas favour granite and dense limestone; interior fit-out favours marble; wet areas and outdoors favour low-absorption varieties.
- Then choose the surface finish: floors are governed by slip rating (R-value or DCOF), walls by visual continuity, countertops by hardness and stain resistance.
- Finally choose the variety and veining direction: compare actual slabs within the same budget and confirm veining continuity and yield.

Three Rock Families and Their Boundaries

Igneous (granite family): a quartz-and-feldspar skeleton gives exceptional hardness — Mohs approx. 6–7, water absorption typically below 0.3%, acid and alkali resistant. The safe choice for plazas, curtain walls and kitchen countertops.

Sedimentary (limestone / sandstone / travertine): warm texture and soft tones, relatively higher porosity and weak acid resistance — suited to walls, low-wear floors and landscape work, always paired with a sealer.

Metamorphic (marble / quartzite): marble offers rich veining polishable to a mirror finish, Mohs approx. 3–4, vulnerable to acids; quartzite approaches granite in hardness while carrying marble-like veining — the rising star of the countertop market.

Key Physical Properties at a Glance

- Water absorption: the lower, the denser and more stain-resistant. Marble ≤0.5% and granite ≤0.3% are good; ≤0.4% recommended for wet areas and outdoors.
- Flexural strength: the safety core of dry-hang curtain walls and long countertops — anchoring zones generally require ≥8 MPa (subject to project design calculations).
- Compressive strength and bulk density: affect structural loads and freight cost; typical bulk density 2,500–2,800 kg/m³.
- Slip resistance: DIN 51130 R9–R13; US wet-area DCOF ≥0.42 (ANSI A326.3) — a hard threshold for public floors.
- Abrasion and freeze-thaw resistance: mandatory checks for outdoor projects and cold regions.

From Sample to Bulk Order: a Four-Step Risk-Control Process

Step 1: confirm variety and finish direction with small samples; Step 2: request slab photos / videos matched to the actual batch to review veining distribution; Step 3: fix in the contract the colour-variance range, dimensional tolerances, yield and the acceptance standard (EN / ASTM / GB); Step 4: inspect the first delivery against that standard and archive a sealed reference sample for all subsequent batches.

Budget Structure and Cost Composition

Total stone cost = block price + cutting-yield loss + fabrication (cutting / profiles / surface treatment) + sealing and installation + wastage allowance. Book-match symmetrical layouts yield less and cost more; standard cut-to-size formats yield best and offer the best value. Rather than compromising on variety, optimise the budget through layout strategy and format selection.

Common Selection Pitfalls

- Judging veining from a lab-size sample — small samples cannot reveal slab-scale veining distribution or colour bands.
- Ignoring batch consistency — mixing quarry faces or batches is the No.1 source of colour-variance complaints.
- Extrapolating indoor varieties to outdoor use — freeze-thaw and UV ageing remain unverified.
- Comparing unit price while ignoring yield — a "cheap block" with low cutting yield often costs more overall.

HSST Selection Support

Hengsheng Marble S&T; provides integrated selection support from quarry to site: direct supply from 180+ quarries, slab-photo selection, end-to-end control through 68 quality-inspection nodes, and one-to-one technical consulting. Request samples and quotations via hsst.hk.