

PHYSICAL PETROLOGY DESCRIPTION

Verde Bahia (*Verde Glória*)

Premium Brazilian green ornamental stone — technical and petrological characterization prepared by Baimin Granitos.

ROCK NAME

Verde Bahia (commercial name), also widely marketed as *Verde Glória*.

PETROLOGICAL CLASSIFICATION

Metamorphic rock — quartz-bearing amphibolitic to charnockitic gneiss, commercially classified as a green granite in the ornamental stone industry.

General Description

Verde Bahia is a high-grade metamorphic ornamental stone distinguished by its intense green coloration, exceptional mechanical strength, and excellent polishing characteristics. The rock originated under amphibolite- to granulite-facies metamorphic conditions, producing a dense crystalline fabric with strong mineral interlocking that contributes to its durability and low porosity.

Although marketed internationally as a "granite," Verde Bahia is petrologically a metamorphic crystalline rock rather than a true igneous granite.

Mineralogical Composition

Typical mineral assemblage includes:

- Green amphiboles (hornblende and related species)
- Green pyroxenes (locally present)
- Plagioclase feldspar
- Quartz
- Potassium feldspar (minor to moderate)
- Biotite
- Epidote (local)
- Accessory opaque minerals (magnetite and ilmenite)
- Minor zircon, apatite, and titanite

The characteristic emerald to dark green color results primarily from iron-bearing amphiboles and pyroxenes distributed throughout the crystalline matrix.

Texture

- Medium- to coarse-grained crystalline texture
- Granoblastic to weakly gneissic fabric
- Interlocking mineral grains
- Generally massive with limited foliation in commercial blocks
- Excellent cohesion between mineral phases

The interlocking crystalline texture provides high resistance to abrasion and weathering while allowing excellent polishing performance.

Structure

Commercial blocks are typically extracted from massive, relatively homogeneous sections exhibiting:

- Low fracture density
- Minimal alteration
- Limited weathering
- Good dimensional stability
- High block recovery where structural discontinuities are well controlled

Localized quartz veins and healed fractures may occur but are generally avoided during block selection.

Color

DOMINANT RANGE

- Deep emerald green
- Olive green
- Dark forest green

SECONDARY SHADES

- Black
- Dark gray
- Small white quartz lenses
- Light feldspathic streaks

Color variation depends on amphibole concentration, mineral grain size, and metamorphic banding intensity.

Physical Characteristics

Typical engineering characteristics include:

- High compressive strength
- High flexural strength
- High abrasion resistance
- Low water absorption

- Low open porosity
- Excellent polish retention
- Good resistance to freeze-thaw cycles
- Excellent dimensional stability

These characteristics make Verde Bahia suitable for demanding architectural applications.

Durability

Verde Bahia demonstrates excellent long-term durability under both interior and exterior exposure. The dense mineral fabric limits moisture penetration while the hard silicate minerals provide outstanding resistance to wear and surface degradation.

When properly installed, the stone maintains its color, gloss, and structural integrity over extended service life.

Commercial Applications

Because of its physical performance and distinctive appearance, Verde Bahia is widely used for:

- Luxury flooring
- Interior wall cladding
- Exterior façades
- Kitchen countertops
- Vanity tops
- Staircases
- Fireplace surrounds
- Hotel lobbies
- Commercial buildings
- Monumental architecture
- Decorative stonework
- High-end residential projects

Geological Origin

Verde Bahia formed through regional high-grade metamorphism affecting mafic to intermediate protoliths during Precambrian tectonic events associated with the evolution of the eastern Brazilian shield. Elevated temperatures and pressures produced recrystallization of primary minerals into the dense amphibolitic-gneissic assemblage observed today.

Summary

Verde Bahia (Verde Glória) is a premium Brazilian green ornamental stone characterized by:

- Dense crystalline metamorphic structure
- Strong interlocking mineral texture
- Dominance of green amphiboles and pyroxenes
- Low porosity
- High mechanical strength
- Excellent polishability
- Superior durability
- Distinctive emerald-green appearance