

Tezal

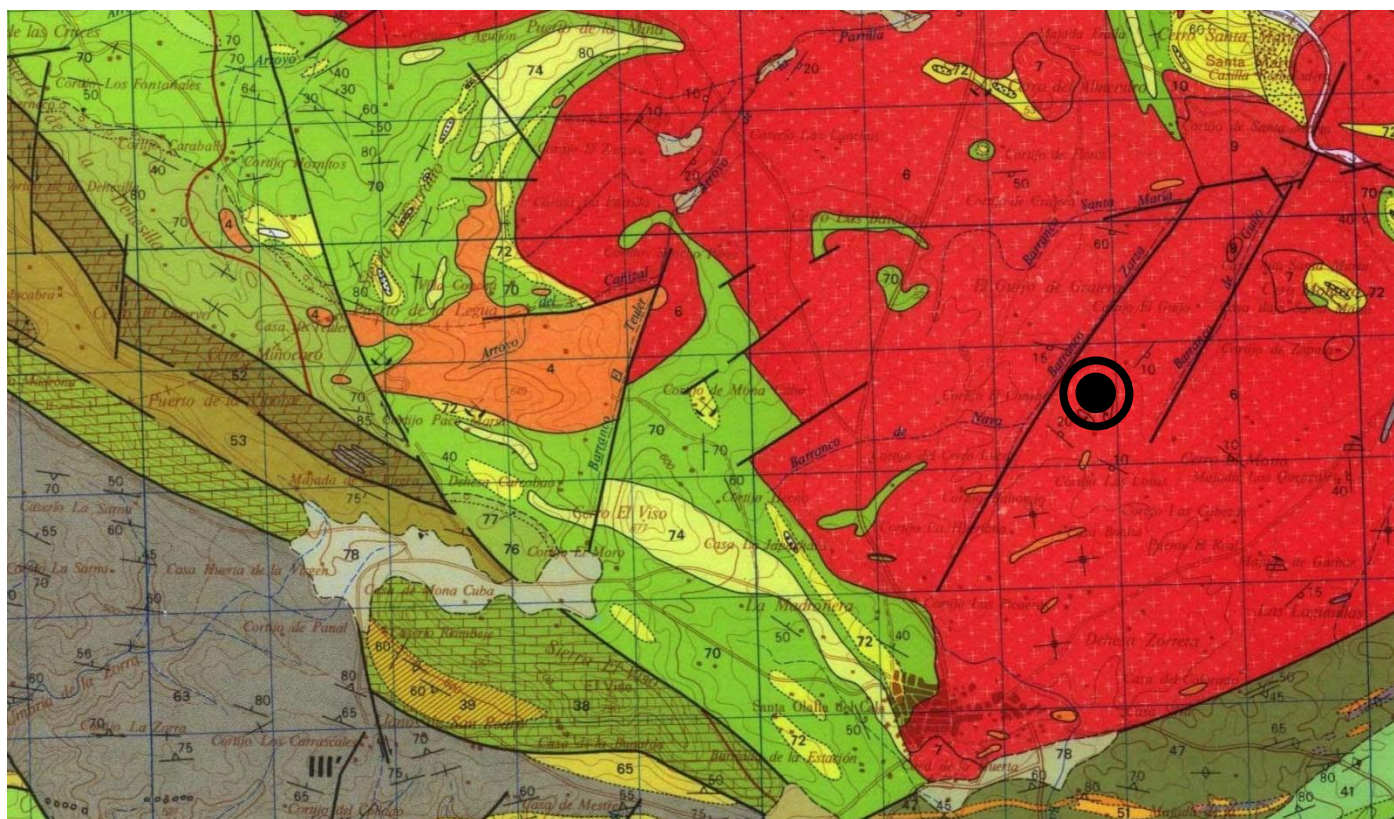
Negro Tezal



Short description: Medium grained tonalite, rich in biotite and mafic minerals, and with a high degree of textural and color homogeneity.

Commodity (vocabulary)	Lithology (vocabulary)	Typical colour (code list)	Place of origin			
			Country	County / District / Province	Municipality / Community	Place/town / Village
granite	tonalite	grey	Spain	Huelva	Santa Olalla del Cala	Santa Olalla del Cala

Geological setting



Geology: A semicircular stock that outcrops NE of Santa Olalla de Cala. It intrudes on the rocks of the Bodonal-Cala volcanic complex, over which it produces a pervasive halo of metamorphism and numerous skarnification processes. To the south it is cut by a tear fault (the Zufre fault). Morphologically it is a great depression, marked out by reliefs, produced by the metamorphic encasing, and with small hills, of similar composition and corresponding to "roof pendants" of varying dimensions. On the outcrop it is a grayish grainy rock rich in biotite and amphibole. It often has a well-developed magmatic foliation, marked by melanocrates and by elongation of the numerous enclaves that it presents. Two facies have been identified; the most abundant of intermediate composition (quartzodiorites and tonalites) and another of dioritic composition, which is restricted to the proximity of the Cortijo de Agua Blanca, (stock of Aguablanca) and to outcrops of reduced dimensions inside the main mass.

Production: Two companies, in four quarries, are dedicated to the extraction of "Negro Santa Olalla" granite. It must be taken into account that "Negro Santa Olalla" granite has been on the market for a short time and is not sufficiently well known.

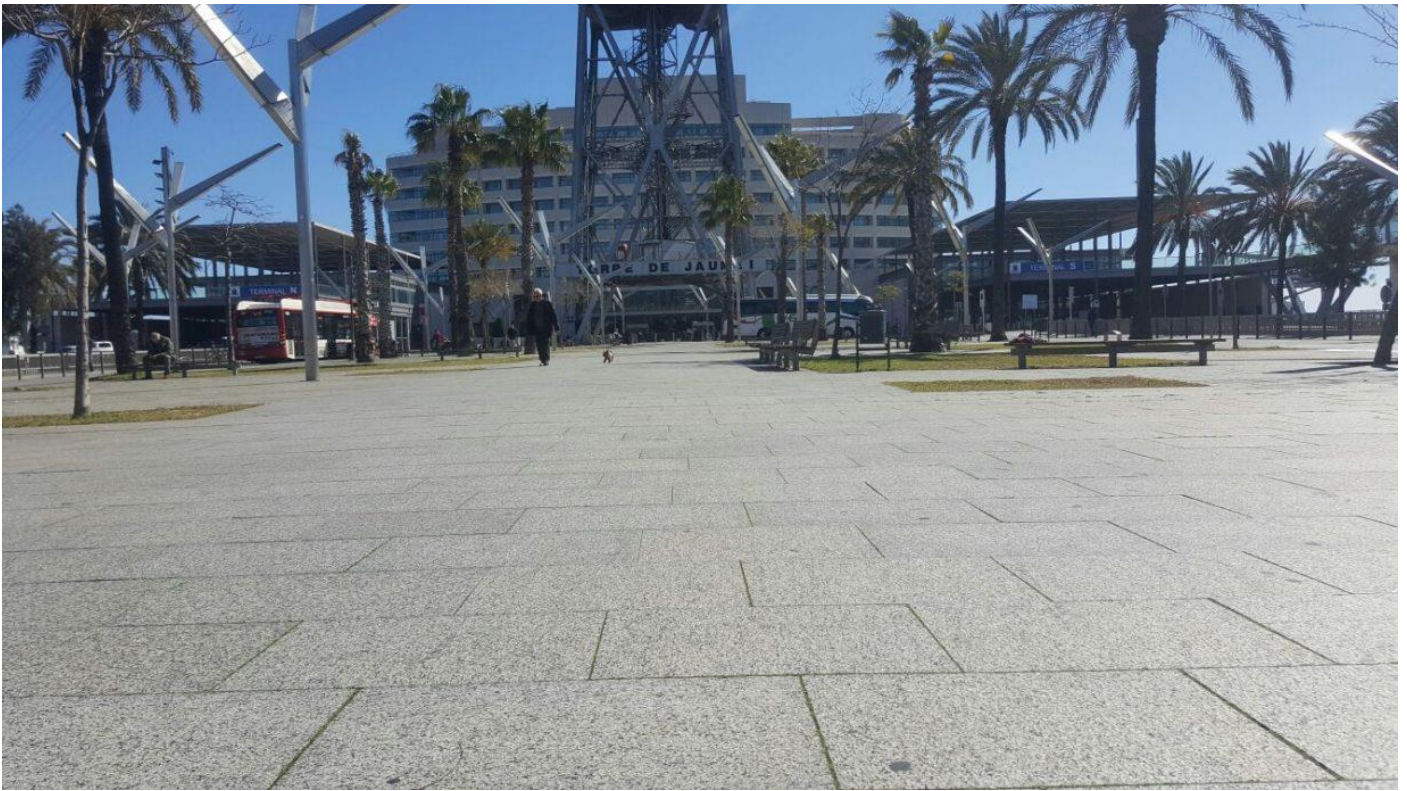
Geological age: Bashkirian

Geological unit: Santa Olalla del Cala Batholith.

Geological age:

Geological unit:

Application, use and heritage



Description: Flooring (<https://grupimar.es/fw-portfolio/negro-tezal-4/>)

Petrography

Description: Grainy rocks of medium to coarse grain in which biotites and amphiboles can be recognized in the field, which supposes a magmatic fluidity. Under the microscope, they have a hypidiomorphic granular texture and are composed of plagioclase, biotite, green hornblende, and quartz as the main minerals. As accessories there are remains of pyroxene included in amphibole, K-feldspar, zircon, sphene, apatite, opaque minerals, rutile, muscovite, and they can also appear as products of alteration of various phases, sericite, epidote, chlorite, carbonate, etc. Plagioclase (andesine, which at the borders can become calcium oligoclase), is the first phase to crystallize and shows idiomorphic forms, polysynthetic twinning and generally appear zoned. Amphibole and biotite often show complex relationships. In general, the former is transformed into biotite. More evident is the transformation of pyroxene, when it exists, into amphibole. The order of crystallization is: Clinopyroxene - plagioclase - hornblende - biotite - quartz – K-feldspar.

Source of information: <http://www.igme.es/>.

Physical properties

Apparent density (EN 1936) kg/m ³	Open porosity (EN 1936) % vol	Water absorption at atmospheric pressure (EN 13755) % wt	Uniaxial Compressive strength (EN 1926) MPa	Flexural strength under concentrated load (EN 12372) MPa
2790		0.11	101.6	11.96

Real density (EN 1936) kg/m ³	Total porosity (EN 1936) % vol	Water absorption coefficient by capillary (EN 1925) (g/m ² x s ^{0,5})	Flexural strength under constant moment (EN 13161) MPa

Frost resistance (EN 12371)				
Technological Test (Test A)				Identification Test (Test B): Number of cycles completed prior to stone failure
Flexural strength (EN 12372) after freeze-thaw cycling, MPa	Number of cycles	Uniaxial compressive strength (EN 1926) after freeze-thaw cycling, MPa	Number of cycles	

Resistance to ageing by thermal shock (EN 14066)			
Change in dynamic modulus of elasticity (increase: +; decrease: -) %	Change in open porosity (increase: +; decrease: -) %	Change in ultrasound pulse velocity (increase: +; decrease: -) %	Change in flexural strength under conc. load (increase: +; decrease: -) %

Abrasion resistance (EN 14157)			Resistance to salt crystallisation (EN 12370)	Breaking load at dowel hole (EN 13364)	
Method A - Wide Wheel Abrasion Test, mm	Method B - Böhme Abrasion Test, cm ³ / 50cm ²	Method C - Amsler Abrasion Test, mm	Change in mass (increase: +; decrease: -), %	Breaking load, N	Thickness of the test specimens, mm
15.4				3250	

Slip resistance by means of the pendulum tester (EN 14231 / CEN/TS 16165)			Rupture energy (EN 14158), Joule	Thermal Conductivity (EN 1745), W/m·K
Tested surface finish	Slip Resistance Value — SRV			
	Dry test condition	Wet test condition		
	88	11		

Source of information: Piedras Naturales de España. Anuario 1988, 2000/1, 2002, 2004, 2005, 2007. Roc Maquina. / <https://www.itrisa.com/PIEDRA/GRANITOS/GRANITOS-NACIONALES/289-NEGRO-SANTAOLALLA/> / <http://www.marmolesygranitos.biz/sec-negro-santaolalla-18.html>

Sources of more information

Type of information	Name of provider	URL
This data sheet	Instituto Geológico y Minero de España (IGME)	http://www.igme.es/
Non-commercial directory		
Commercial directory	Grupimar	https://grupimar.es/fw-portfolio/negro-tezal-4/
Scientific publication		
Other publication		

Compiled by:	Instituto Geológico y Minero de España (IGME) http://www.igme.es/	 Instituto Geológico y Minero de España
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