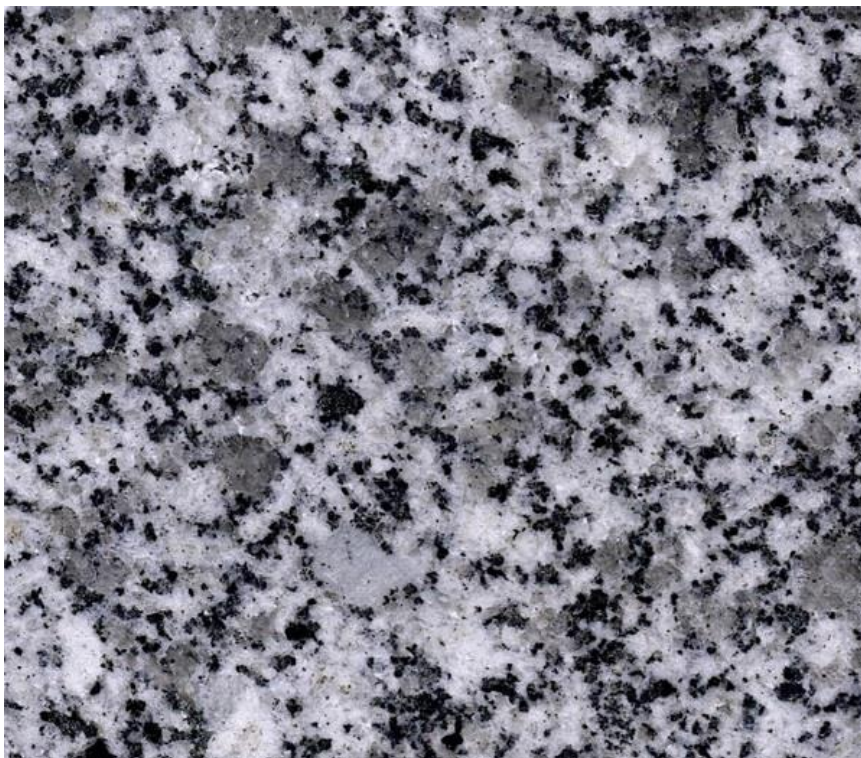


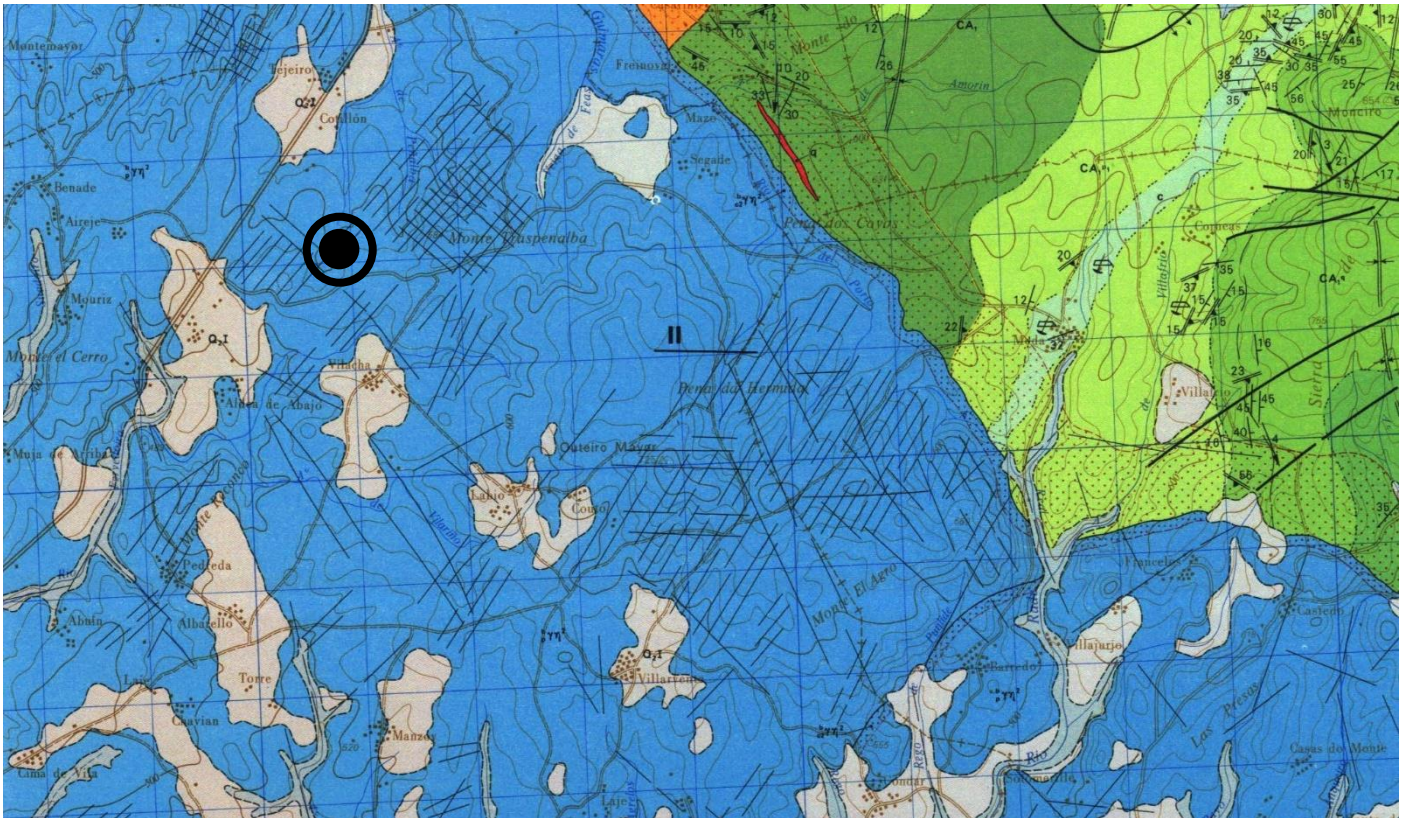
Perla Kaxigal



Short description: Biotitic granite of medium to coarse grain (2.5-3.5 mm), additionally some of the feldspars reach 35 mm.

Commodity (vocabulary)	Lithology (vocabulary)	Typical colour (code list)	Place of origin			
			Country	County / District / Province	Municipality / Community	Place/town / Village
biotitic granite	granite	grey	Spain	Lugo	Lugo	Lugo

Geological setting



Geology: The Lugo Massif is located to the N of the town of Lugo forming a body of a great extension. It is a massif that intrudes with clear contacts in Precambrian rocks of the Vilalba Series and in the Paleozoic rocks of the Cándana Group. It is made up of coarse grained porphyritic biotitic granodiorites. The Lugo massif has a leucocratic character and the presence of biotite. Two facies have been identified within these massifs based on the presence or absence of microcline megacrystals:

- Central facies, defined by the presence of quartz porfiroblasts and K-feldspar.
- Border facies, which surrounds the previous one forming a ring of up to 1 km. wide, characterized by its coarse grain without megacrystals and an allotriomorphic texture.

It is affected by a subvertical fracture that favors the alteration and presents enclaves of the schists in which they intrude, especially in the border facies. The intrusion of the granite bodies causes an aura of contact metamorphism that overlaps the regional metamorphism that appears in the area.

Production: The Perla Kaxigal granite is pinkish gray with a medium grain size, exploited intermittently at the Traspenalba quarry.

Geological age: Pennsylvanian.

Geological unit: Lugo massif.

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
2660		0.39	118.5	10.9

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
		36.69	

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
				2132	

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		

Source of information: Quiroga, J.R., Casares, A., Míguez, V., Vidal, J.R. (1997): La Piedra de Galicia. Xunta de Galicia, 319 págs. ISBN: 84-453-2037-8.

Chemical properties

Main elements

SiO ₂ (%)	Al ₂ O ₃ (%)	Fe ₂ O ₃ (%)	TiO ₂ (%)	MgO (%)	CaO (%)	Na ₂ O (%)	K ₂ O (%)	MnO (%)	P ₂ O ₅ (%)	SO ₃ (%)	LOI (%)
74.46	13.28	1.5		0.14	0.7	3.03	5.53	0.02			0.77

Trace elements

V (ppm)	Cr (ppm)	Mn (ppm)	Co (ppm)	Ni (ppm)	Cu (ppm)	Zn (ppm)	As (ppm)
Sr (ppm)	Cd (ppm)	Ba (ppm)	Pb (ppm)	Be (ppm)	Rb (ppm)	Bi (ppm)	U (ppm)
Sc (ppm)	Y (ppm)	Th (ppm)	Sb (ppm)	Ta (ppm)	Nb (ppm)	Zr (ppm)	Sn (ppm)
Ag (ppm)	B (ppm)	Mo (ppm)	W (ppm)	Ga (ppm)	Ge (ppm)	Se (ppm)	Cs (ppm)
Tl (ppm)							

REE

La (ppm)	Ce (ppm)	Pr (ppm)	Nd (ppm)	Sm (ppm)	Eu (ppm)	Gd (ppm)	Tb (ppm)
Dy (ppm)	Ho (ppm)	Er (ppm)	Tm (ppm)	Yb (ppm)	Lu (ppm)		

Methods applied and source of information: http://www.igme.es/boletin/2005/116_4_2005/ART%205.pdf

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		
Scientific publication		
Other publication	Quiroga, J.R., Casares, A., Míguez, V., Vidal, J.R. (1997): La Piedra de Galicia. Xunta de Galicia, 319 págs. ISBN: 84-453-2037-8.	

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