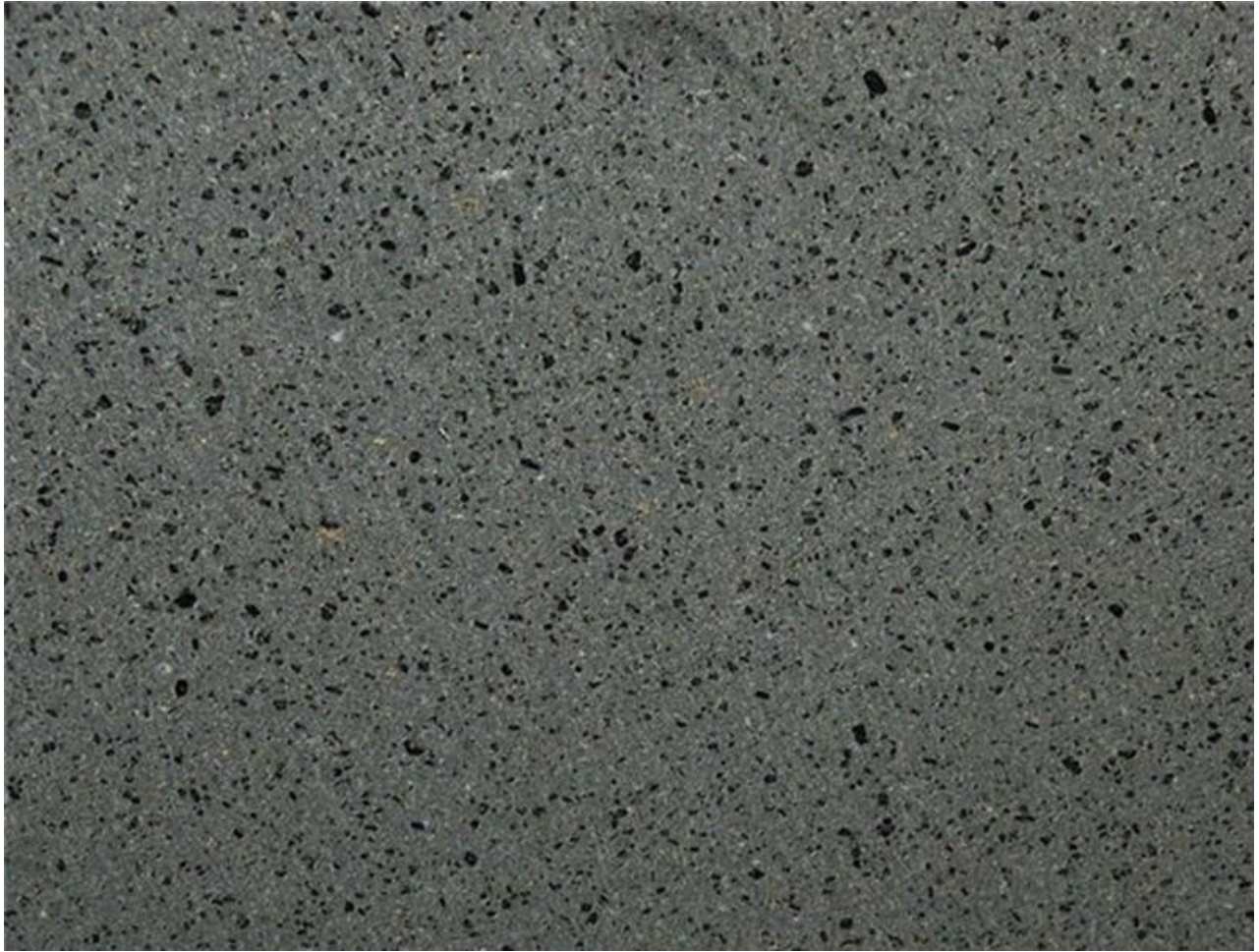


Basaltina

8 centimeters



Massive or flow lineated grey lava containing some leucite crystals.

Commodity (vocabulary)	Lithology (vocabulary)	Typical colour (code list)	Place of origin			
			Country	Province	Municipality	Village
Commercial Basalt	Tephrite	Dark-grey	Italy	Viterbo (Latium)	Bagnoregio	Bagnoregio

Geological setting



3 kilometers

Geology: The hilly-ravine featured area of Bagnoregio is mostly composed of clayey and clayey-sandy deposits (Lower Pleistocene; yellow in the map) covered by a tuffaceous complex (Pleistocene; light and dark brown in the map) intercalated by tephritic lava flows (red in the map). These latter constitute the exploited geological unit.

Production: Quarries excavated southwards with respect to Bagnoregio town supply a limited but appreciated production of this stone.

Geological age: Pleistocene

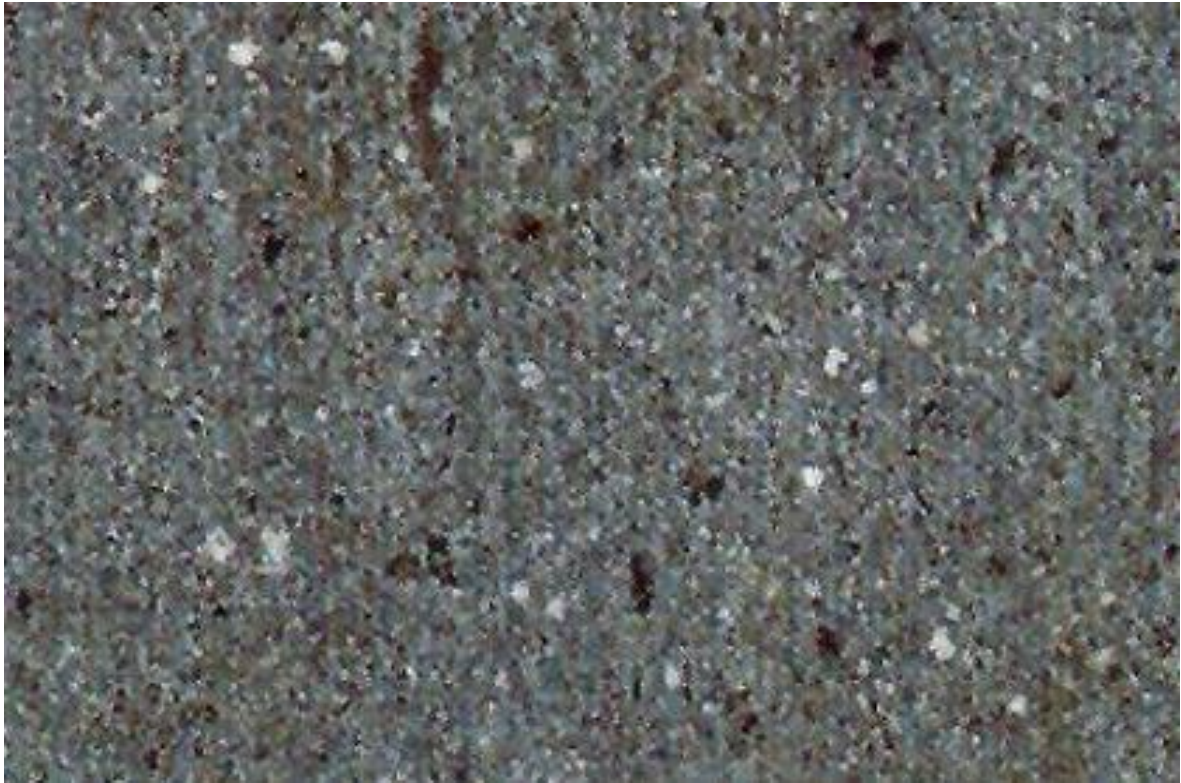
Geological unit: Tephritic lavas

Application, use and heritage



Basaltina is used for many purposes (e.g. facade cladding, indoor floors, table tops, stairs and monuments). The classic Basaltina is dark-grey in colour. In this picture, a detail of a building in Seoul City (South Korea) made of this stone.

Petrography



4 centimeters

Description: Detailed photo in natural light of a cutting surface of Basaltina, showing the appearance of this lava having a hypocrySTALLINE porphyritic texture and containing egirinaugite, leucite, plagioclase and biotite phenocrysts within a microcrystalline groundmass.

Source of information: Geological Survey of Italy, Geological map of Italy 1:100.000 scale, Viterbo Sheet, http://sgi.isprambiente.it/geologia100k/mostra_foglio.aspx?numero_foglio=137

Geological Science Department - University Roma Tre, Italithos 2000, <http://www.italithos.uniroma3.it/>

Mineral composition

Pyroxene (%)	Plagioclase (%)	Leucite (%)	Biotite (%)	Groundmass (%)		
4	3	3	1	89		

MM=main minerals, SM = Subordinate minerals, AM=accessory minerals

Source of information: Geological Science Department - University Roma Tre, Italithos 2000,

<http://www.italithos.uniroma3.it/>

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
2229		0.3	83	13.8

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	
		87	48	

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
		58			

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: Geological Science Department - University Roma Tre, Italithos 2000,
<http://www.italithos.uniroma3.it/>.

Chemical properties

Main elements

SiO ₂ (%)	TiO ₂ (%)	Al ₂ O ₃ (%)	Fe ₂ O ₃ (%)	FeO (%)	MgO (%)	MnO (%)	Na ₂ O (%)	K ₂ O (%)	CaO (%)	P ₂ O ₅ (%)	LOI (%)
55.68	0.12	17.85	2.34	0.14	2.57	3.60	2.64	7.83	5.40	1.15	0.40

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: Geological Science Department - University Roma Tre, Italithos 2000, <http://www.italithos.uniroma3.it/>

Sources of more information

Type of information	Name of provider	URL
This data sheet	Geological Survey of Italy -ISPRA	http://sgi.isprambiente.it/geologia100k/mostra_foglio.aspx?numero_foglio=137
Non-commercial directory	Geological Science Department - University Roma Tre, Italithos 2000	http://www.italithos.uniroma3.it/
Commercial directory	Basaltina S.r.l.	https://basaltina.it
Scientific publication		
Other publication		

Compiled by:	Geological survey of Italy – ISPRA website http://portalesgi.isprambiente.it/	 
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