

“Karystos” Schists Green

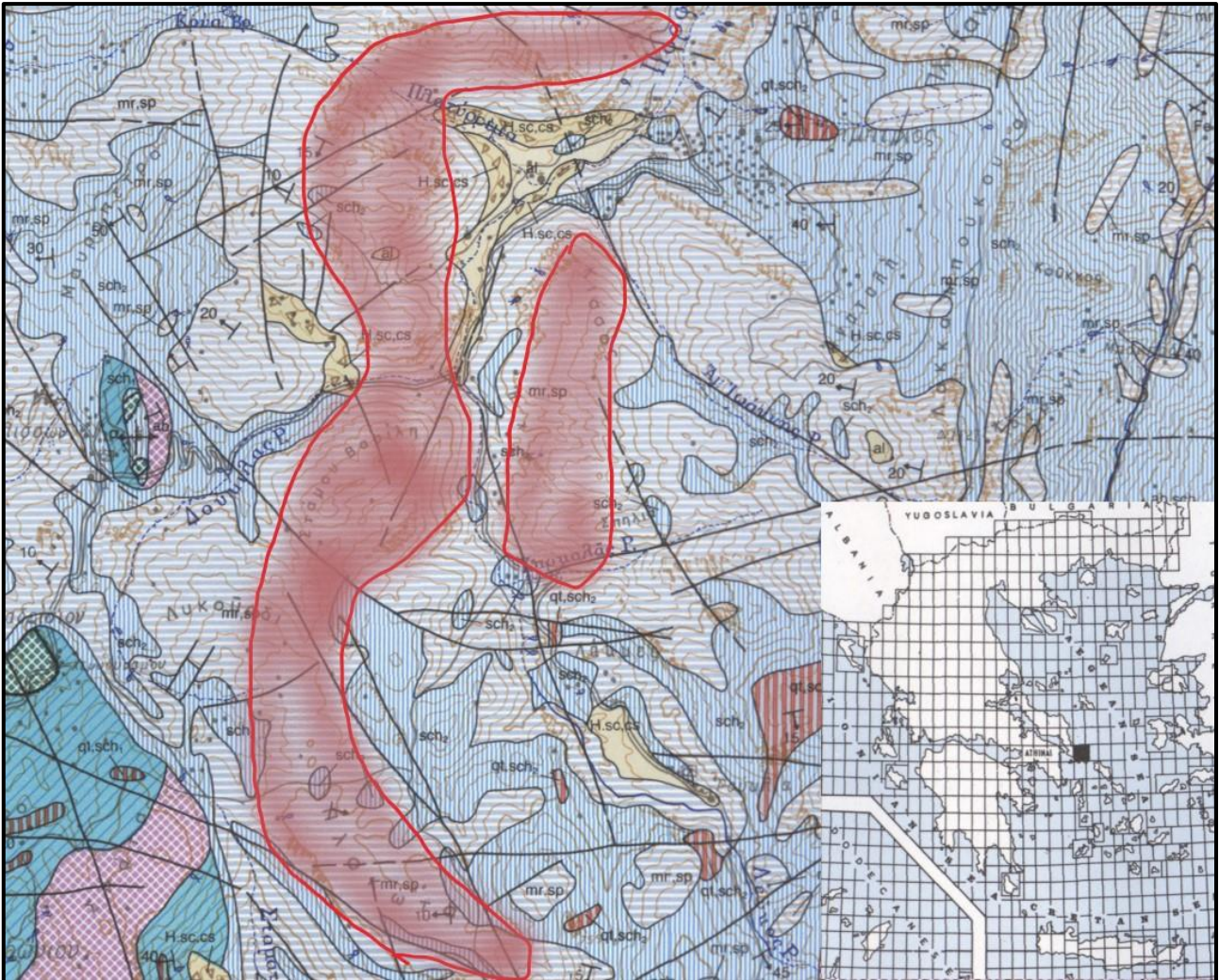


Scale 1:1

Short description: Coarse grained marble with green and off-green veins, classified as cipollino marble.

Commodity (vocabulary)	Lithology (vocabulary)	Typical colour (code list)	Place of origin			
			Country	County / District / Province	Municipality / Community	Place/town / Village
Marble	Cipollino marble	Green	Greece	Central Greece	Karystos	Agios Dimitrios Marmari Paradisi

Geological setting



Geology: Karistos Schists (red marking) belong to marbles and cipolins of Atticocycladic Massif. They are mainly thin-bedded and locally thick-bedded, to micro- to medium-crystalline marbles of grey, grey-black and black colours. Great participation of muscovite is often observed resulting in cipolins-marbles or / and cipolins. Chlorite also participates locally in significant proportion, turning them into green cipolins which have intensely exploited ever since the ancient times. The thin – bedded and even the medium bedded marbles and cipolins are highly exploited producing the well-known “Karistos plates”.

(Source: Geological Map of Greece 1:50000, Karistos-Platanistos Sheet)

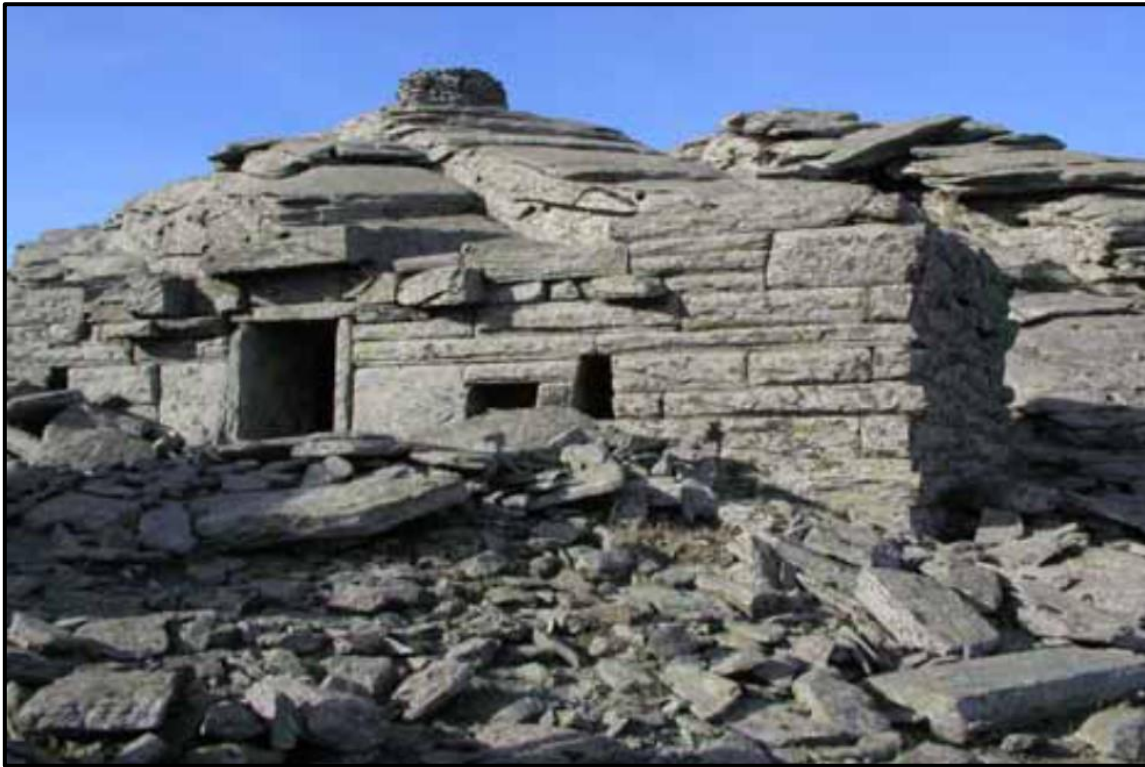
Production: The most important quarry area is near the villages of Agios Dimitrios, Marmari, Paradisi, in South Evia.

Geological age: Neogene – Middle – Upper Miocene

Geological unit: Atticocycladic Massif – Neohellenic Tectonic Nappe

Application, use and heritage

Description: Karystos schists are durable materials, ideal for paving of roads and footpaths, the construction of floors (indoor and especially outdoor). They are also used for the construction of stone houses, masonry, coverings of walls and roofs, etc.



The **dragon houses** are some large, ruined buildings found in the south of Evia Island in Greece. They are dated before 700 BC. They were built with massive stone blocks without mortar and large stone slabs for the roofs. The Dragon House on Mount Ochi, north of Karystos is the most famous and well preserved.

(Source: «ΚΑΡΥΣΤΙΑ ΛΙΘΟΣ» ΕΝΑ ΔΙΑΧΡΟΝΙΚΟ ΔΟΜΙΚΟ ΥΛΙΚΟ, Ελληνική Γεώσφαιρα, Περιοδική Έκδοση Ι.Γ.Μ.Ε., Απρίλιος 2009, Τεύχος 6)



Various applications of Karystos Schists

Petrography



Description: Crystalline marble with coloured veins of muscovite and quartz. It has a well-developed schistosity, consisting of alternating layers of hypidiomorphic calcite crystals. The predominant green colour is attributed to the relatively high amounts of muscovite, chlorite, epidote and titanite.

Source of information: Hellenic Survey of Geology and Mineral Exploration

Mineral composition

If no accurate number, use MM=main minerals, SM = Subordinate minerals, AM=accessory minerals

Calcite (%)	Muscovite (%)	Chlorite (%)	Albite (%)	Quartz (%)	Opaque minerals (%)	Titanite (%)
75	10	9	7	3	AM	AM

Source of information: Hellenic Survey of Geology and Mineral Exploration

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
2710	0,3	0,1	-	25,6

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	
24,4	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
20,5	-	-	-	-	-

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		
			5	-

Source of information: Hellenic Survey of Geology and Mineral Exploration

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 (%)
4,20	0,84	0,61	-	0,80	52,15	0,32	0,29	0,05	-	-	41,10

Trace elements

V (ppm)	Cr (ppm)	Mn (ppm)	Co (ppm)	Ni (ppm)	Cu (ppm)	Zn (ppm)	As (ppm)
6,0	26	425	4,5	26	40	28	1,5
Sr (ppm)	Cd (ppm)	Ba (ppm)	Pb (ppm)	Be (ppm)	Rb (ppm)	Bi (ppm)	U (ppm)
430	0,5	75	10	0,3	8,0	<0,1	<0,1
Sc (ppm)	Y (ppm)	Th (ppm)	Sb (ppm)	Ta (ppm)	Nb (ppm)	Zr (ppm)	Sn (ppm)
14	4,0	1,0	0,5	0,3	0,9		
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: Hellenic Survey of Geology and Mineral Exploration

Sources of more information

Type of information	Name of provider	URL
This data sheet	Hellenic Survey of Geology and Mineral Exploration	https://www.eagme.gr/
Non-commercial directory		
Commercial directory		
Scientific publication	Ελληνική Γεώσφαιρα Περιοδική Έκδοση Ι.Γ.Μ.Ε. Απρίλιος 2009 Τεύχος 6	https://www.igme.gr/images/igme/magazine/Elliniki_Geosphaera_No6.pdf
Other publication		

Compiled by:	Hellenic Survey of Geology and Mineral Exploration (H.S.G.M.E.) https://www.eagme.gr/	
--------------	--	---