Terjola Region Village Godogani. Quarry "Godogani Limestone"

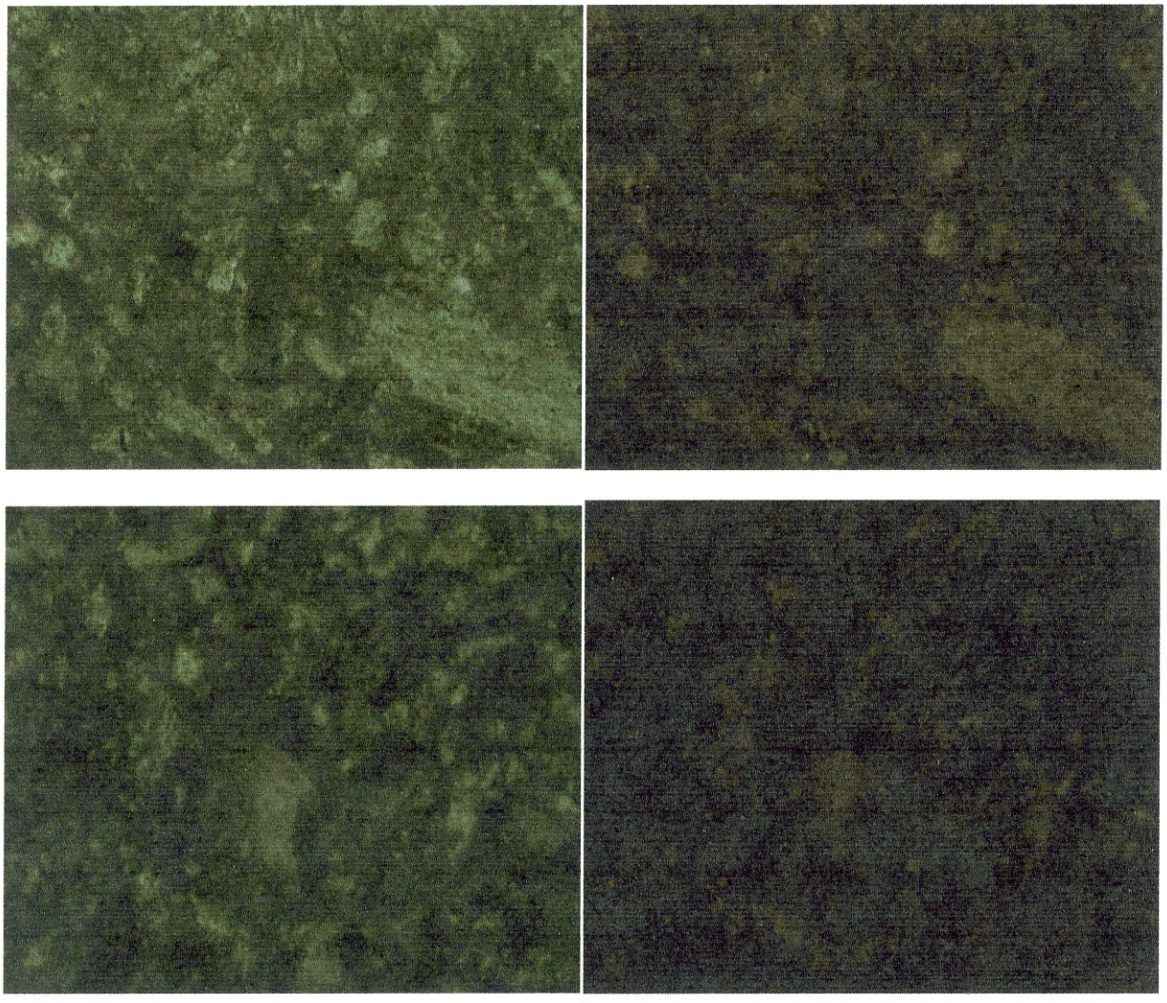
№№	Sample no	Depth, m	Water Absorption, **WAW** %	Bulk Specific Gravity, **BSG**	Bulk Density, **ρ** g/sm^3	Compressive Strength		Modulus of Rupture		Soil Description
						Dry condition, **σ** მპა	Saturated, **σ^W** მპა	Dry condition, **R** მპა	Saturated, **R^W** მპა	
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**
1	1	0.0	**8.3**	**2.14**	**2.41**	**35**	**28**	**5.7**	**5.3**	Limestone

Petrographic Description

Sample № 1 Limestone (mixed with clay)

Macroscopically the rock is white, fine grained; it has an active reaction on hydrochloric acid.

In microscope the rock represents limestone, fine grained. The whole background is non-transparent, mixed with clayey material. Numerous finest grains of carbonate are observed on its background, only bigger size sheets of carbonate are rarely observed.



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DETERMINATION OF THE DENSITY
(Linear Measurement Method)

Job ref. Terjola Region Village Godogani. Quarry "Godogani Limestone"

TEST METHOD: **BS 1377 : Part 2 : 1990 : 7.2/Prrocedure 3.** Preparation Method: **BS 1377 : Part 1 : 1990 : 8.4**

No.	Sample no.	Borehole no.	Depth, m	Shape of specimens	Specimens dimensions, mm			Area, A_0 mm^2	Volume, V mm^3	Mass of specimen, m g	Density of specimen, ρ g/sm^3	Note
					width	length	height					
1	2	3	4	5	6	7	8	9	10	11	12	13
1	1 D¹	1	0.0	Cube	50.0	50.0	50.0	2500	125000	303.8	2.43	as received
2	1 D²	1	0.0	Cube	50.0	50.0	50.0	2500	125000	303.6	2.43	as received
3	1 D³	1	0.0	Cube	50.0	50.0	50.0	2500	125000	303.0	2.42	as received
4	1 D⁴	1	0.0	Cube	50.0	50.0	50.0	2500	125000	298.2	2.39	as received
5	1 D⁵	1	0.0	Cube	47.0	45.0	45.0	2115	95175	226.5	2.38	as received
6												
7												
8												
9												
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23												
24												

Operator	Checked	Approved
Kokolashvili	**Khatiashvili**	**Natsvlishvili**

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Modulus of Rupture of Dimension Stone

Location: Quarry "Godogani Limestone"				Job ref.	Terjola Region Village Godogani		
Soil Location: Limestone				Borehole no.	-		
				Sample no.	1 D		
				Depth, m			
Test nMethod:		ASTM C 99-87(2006)		Date	12/12/2014		

Specimen initially details

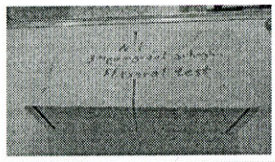
Specimens no.			1 D¹	1 D²				
Specimens shapes			Cube	Cube				
Specimens dimensions, mm:	width,	b	100.0	100.0				
	length,	a	200.0	200.0				
	thickness,	d	57.0	55.0				

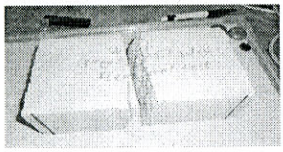
Compression Test Results

Test condition	Dry Condition					
Length of span, l mm	177.9					
Breaking load, W (N)	6500	6800				
Modulus of Rupture, $R = 3Wl/2bd^2$ (MPa)	5.3	6.0				
Average of Modulus of Rupture , R (MPa)	5.7					

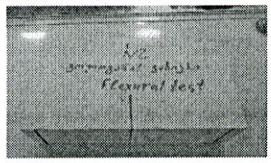
Photo of the specimens after test

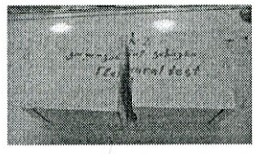
Specimen no. 1 D¹





Specimen no. 1 D²





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Modulus of Rupture of Dimension Stone

Location: Quarry "Godogani Limestone"		Job ref.	Terjola Region Village Godogani
Soil Location: Limestone		Borehole no.	-
		Sample no.	1 W
		Depth, m	
Test nMethod:	ASTM C 99-87(2006)	Date	12/12/2014

Specimen initially details

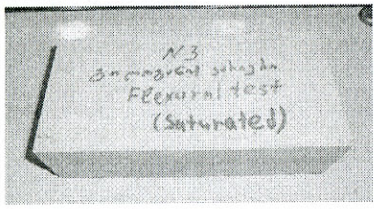
Specimens no.			1 W¹					
Specimens shapes			Cube					
Specimens dimensions, mm:	width,	b	100.0					
	length,	a	200.0					
	thickness,	d	57.0					

Compression Test Results

Test condition	**Wet Condition**					
Length of span, **l** mm	**177.9**					
Breaking load, **W** (N)	6400					
Modulus of Rupture, **R = 3Wl /2bd²** (MPa)	**5.3**					
Average of Modulus of Rupture , **R** (MPa)	**5.3**					

Photo of the specimens after test

Specimen no. 1 W¹



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Determine Level of Water Absorption and Bulk Specific Gravity

LOCATION: **Village Godogani**			Job ref.		**Terjola Region Village Godogani, "Godogani Limestone"**		
SOIL DESCRIPTION: **Limestone**			Borehole no.				
			Sample no.		1		
			Depth, m				
TEST METHOD: **ASTM C 97-02**			Date		12/12/2014		
Specimens no.		1^1	1^2	1^3	1^4	1^5	
Specimens shapes:		cube	cube	cube	cube	cube	
Specimens dimensions, mm:	width	48.0	47.0	47.0	46.0	47.0	
	length	48.0	46.0	48.0	48.0	48.0	
	height	47.0	47.0	46.0	46.0	47.0	
Surface area of specimens, S mm^2		13632	13066	13252	13064	13442	
Volume of specimens, V mm^3		108288	101614	103776	101568	106032	
Ratio of volume to surface area, K=V/S		7.9	7.8	7.8	7.8	7.9	
Weight of the dryed * specimen, (A) g							
12/12/2014 0:00		224.2	211.5	210.7	213.5	217.6	
12/13/2014 0:00		207.3	209.1	204.4	207.9	211.9	
Weight of the soaked ** and surface-dry specimen in air, (B) g							
12/13/2014 0:50		207.3	209.1	204.4	207.9	211.9	
12/15/2014 0:50		224.9	226.3	221.3	224.5	229.4	
Percentage water absorption by weight, % WAW=(B-A)/A*100		**8.49**	**8.23**	**8.27**	**7.98**	**8.26**	
Mean water absorption of sample, %		**8.25**					
Weight of the soaked specimen in water, (C) g							
12/15/2014 0:50		128.0	128.1	126.0	128.0	129.0	
Bulk Specific Gravity, BSG=A/(B-C)		**2.14**	**2.13**	**2.14**	**2.15**	**2.11**	
Mean Bulk Specific Gravity		**2.14**					
Note : * - Dryed at a temperature of 60±2°C; ** - Temperature of water 22±2°C.		Operator Khatiashvili		Checked Kokolashvili		Approved Natsvlishvili	

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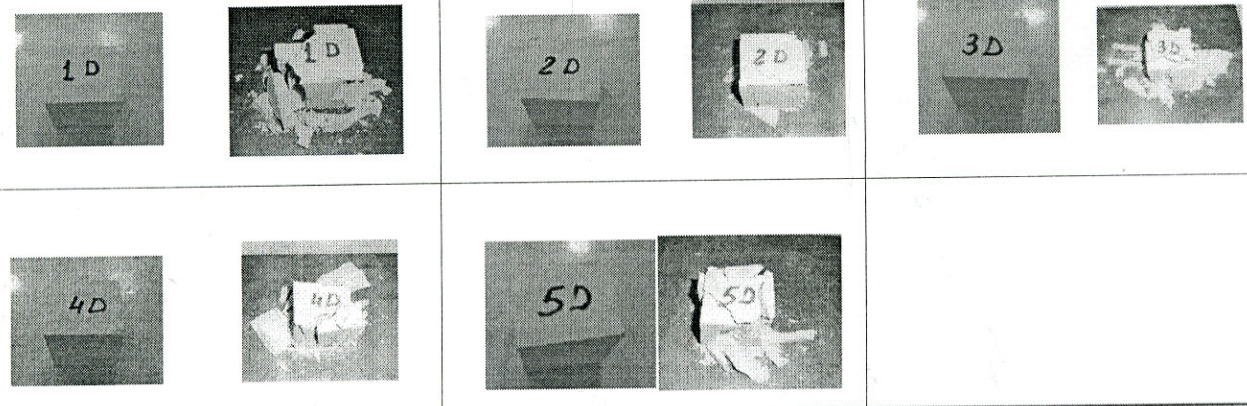
Compressive Strength of Dimention Stone

Location: Quarry "Godogani Limestone"	Job ref. Terjola Region Village Godogani
Specimen lithologic description: Limestone	Borehole no. -
	Sample no: 1 D
	Depth, m
	Date of sampling
	Date of testing 12.12.2014

Test method ASTM C 170-06 — **Prepation procedure in accordance with** ASTM D 4543

Specimen initially details		**1**	**2**	**3**	**4**	**5**
Specimens no.		1 D¹	1 D²	1 D³	1 D⁴	1 D⁵
Specimens shapes:		**Cube**				
Moisture Condition		oven dry at 105 °C				
Specimens dimensions, mm:	width	50.0	50.0	50.0	50.0	47.0
	length	50.0	50.0	50.0	50.0	45.0
	height	50.0	50.0	50.0	50.0	45.0
Area, A_0 (mm^2)		2500	2500	2500	2500	2115
Volume, V (mm^3)		125000.0	125000.0	125000.0	125000.0	95175.0
Scale Ratio, k		1.0	1.0	1.0	1.0	1.0
Moisture Content, % (from trimming)		-	-	-	-	-
Compression Test Results						
Total Load on the Specimen at Failure, W (N)		78100	87700	102100	79300	76800
Compressive Strength of the Specimen, σ (MPa) ($\sigma = W/A$)		**31**	**35**	**41**	**32**	**36**
Average of Compressive Strength of the Specimens, σ_{av} (MPa)		**35**				

Photo of the specimen after test



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Compressive Strength of Dimention Stone

Location: Quarry "Godogani Limestone"		Job ref.	Terjola Region Village Godogani			
Specimen lithologic description: Limestone		Borehole no.	-			
		Sample no:	1 W			
		Depth, m				
		Date of sampling				
		Date of testing	12.12.2014			
Test method	**ASTM C 170-06**	**Prepation procedure in accordance with**				**ASTM D 4543**
Specimen initially details		**1**	**2**	**3**	**4**	**5**
Specimens no.		1 W¹	1 W²	1 W³	1 W⁴	1 W⁵
Specimens shapes:		**Cube**				
Moisture Condition		saturated				
Specimens dimensions, mm:	width	57.0	49.0	49.0	48.0	48.0
	length	53.0	48.0	49.0	47.0	48.0
	height	53.0	46.0	48.0	48.0	48.0
Area, A_0 (mm^2)		3021	2352	2401	2256	2304
Volume, V (mm^3)		160113	108192	115248	108288	110592
Scale Ratio, k		0.9	0.9	1.0	1.0	1.0
Moisture Content, % (from trimming)		-	-	-	-	-
Compression Test Results						
Total Load on the Specimen at Failure, W (N)		110800	99400	41200	53400	52000
Compressive Strength of the Specimen, σ (MPa) ($\sigma = W/A$)		**37**	**42**	**17**	**24**	**23**
Average of Compressive Strength of the Specimens, σ_{av} (MPa)		**28**				

Photo of the specimen after test

	Operator	Checked	Approved
	Kokolashvili	**Khatiashvili**	**Natsvlishvili**