

TEST CERTIFICATE

Exova Ref No : ADC: 909814-1 Rev 0
Date Received : 18 November 2009
Date Reported : 29 November 2009
Order no : --

Description : Information Provided
Project : General
Project Owner : Various
Contractor : Various
Consultant : Various
Sample Description : Natural Stone – Tuff , Red, Dark Grey and Pale Yellow Colour
Client Reference : Natural Stone – Tuff (Delivered on 18/11/09)
Sample Source : ARMENIA
Sampled Date : Not Given
Sampled By : ARMENIA
Sample Location : Fujairah

ABSORPTION & DENSITY				Test Specification: ASTM C 97 - 02		
Mark No	Colour	Oven Dry Weight, g	Soaked & SSD Wt. in Air, g	Soaked Wt. in Water, g	Water Absorption%	Density Kg/m ³
84104	Red	113.1	132.09	60.30	16.8	1570
84105	Dark	122.2	137.97	66.73	12.9	1710
84106	Grey	117.4	131.74	64.91	12.2	1752
84107	Pale	80.2	101.16	35.78	26.1	1223
84108	Yellow	77.2	98.06	30.32	27.0	1137
				Average	19.0	1478

COMPRESSIVE STRENGTH			TEST SPECIFICATION: ASTM C – 170 Reap. 1999				
Mark No	Colour	Test Condition	Orientation to Rift	Compressive Strength, N/mm ²		Average	
84079	Dark Grey	Dry	Un known	17.3		13.5	14.9
84080	Red			19.7			
84081	Red			12.3			
84082	Pale Yellow			8.0			
84083	Pale Yellow			10.3			
84084	Dark Grey	Wet	Un known	21.4		16.3	
84085	Dark Grey			21.6			
84086	Red			16.2			
84087	Red			14.7			
84088	Pale Yellow			7.5			

TUFF

Client : ARMENIA FZE General Trading
Project : General

Exova Ref. No. : ADC 909814-1 Rev. 0
Date Reported : 29 November 2009

MODULUS OF RUPTURE				Test Specification: ASTM C 99 – 87 (Reap.2000)				
Mark No	Colour	Test Condition	Orientation	Size of specimen, mm			Modulus of Rupture N/mm ²	Average
				Length mm	Width mm	Height mm		
84099	Yellow	DRY	Un known	199	100	30	1.3	2.6
84100	Yellow			200	99	29	1.5	
84101	Black			199	100	32	3.9	
84102	Red			196	99	30	3.8	
84103	Red			197	97	30	2.3	
84099A	Yellow	WET	Un known	199	101	30	2.0	2.3
84099B	Yellow			199	100	30	1.2	
84099C	Black			198	100	30	2.8	
84099D	Black			201	99	29	3.0	
84099E	Red			197	98	29	2.7	

FLEXURAL STRENGTH				Test Specification: ASTM C 880 - 98				
Mark No	Colour	Test Condition	Orientation	Size of specimen, mm			Flexural Strength N/mm ²	Average
				Length	Width	Thickness		
84089	Red	DRY	Un known	273	101	30	2.9	4.3
84090	Black			204	103	32	3.6	
84091	Black			378	99	32	10.8	
84092	Yellow			383	98	30	2.2	
84093	Yellow			380	99	30	2.1	
84094	Red	WET	Un known	238	98	30	2.0	2.1
84095	Red			292	99	30	1.6	
84096	Black			201	103	31	3.6	
84097	Yellow			382	99	30	1.1	
84098	Yellow			378	100	30	2.1	

SUMMARY OF RESULTS				TEST SPECIFICATION: ASTM C 616-99			
Physical Property	Test Method	Average Results	Type I – Sand Stone				
Absorption by weight, %	ASTM C 97	19.0	Maximum 8				
Density, kg/m ³	ASTM C 97	1478	Minimum 2003				
Comp. Strength, MPa	ASTM C 170	14.9	Minimum 27.6				
Modulus of Rupture, MPa	ASTM C 99	2.5	Min 2.4				
Flexural Strength, MPa	ASTM C 880	3.2	Not Stated				

Certificate Comments: Water Absorption, Density and Compressive strength results fails to meet the requirements of Type I Sand Stone Classification of ASTM C 616-99 – Quartz Based Dimension Stone.

Date Tested : 21/11/09-25/11/09

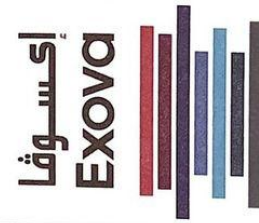
Tested By : Shakti/Suhail/Unni

For and on behalf of Exova Limited (Abu Dhabi) - Umm Al Naar Laboratory

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R. Saminathan
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TEST CERTIFICATE

Exova Ref No : ADC: 909814-2 Rev 0
Date Received : 18 November 2009

Date Reported : 29 November 2009
Order no : --

Description : Information Provided
Project : General
Project Owner : Various
Contractor : Various
Consultant : Various
Sample Description : Natural Stone – Felsite
Client Reference : Natural Stone – Felsite (Delivered on 18/11/09)
Sample Source : ARMENIA
Sampled Date : Not Given
Sampled By : ARMENIA
Sample Location : Fujairah

ABSORPTION & DENSITY Test Specification: ASTM C 97 - 02						
Mark No	Colour	Oven Dry Weight, g	Soaked & SSD Wt. in Air, g	Soaked Wt. in Water, g	Water Absorption%	Density Kg/m ³
84139	Yellow	144.3	159.70	84.78	10.7	1920
84140	Yellow	139.2	154.16	81.12	10.7	1900
84141	Yellow	132.5	146.89	77.25	10.9	1897
84142	Yellow	140.5	154.98	82.49	10.3	1932
84143	Yellow	134.4	149.64	78.83	11.3	1892
Average					10.6	1908

COMPRESSIVE STRENGTH			TEST SPECIFICATION: ASTM C – 170 Reap. 1999		
Mark No	Colour	Test Condition	Orientation to Rift	Compressive Strength, N/mm ²	Average
84109	--	Dry	Un known	31.4	39.5
84110	--			50.1	
84111	--			34.9	
84112	--			36.5	
84113	--			44.4	
84114	--	Wet	Un known	15.9	21.5
84115	--			14.2	
84116	--			24.8	
84117	--			31.2	
84118	--			21.4	

FELSITE

Client : ARMENIA FZE General Trading
Project : General

Exova Ref. No. : ADC 909814-2 Rev. 0
Date Reported : 29 November 2009

MODULUS OF RUPTURE							Test Specification: ASTM C 99 – 87 (Reap.2000)	
Mark No	Colour	Test Condition	Orientation	Size of specimen, mm			Modulus of Rupture N/mm ²	Average
				Length mm	Width mm	Height mm		
84129	--	DRY	Un known	202	98	33	8.5	8.8
84130	--			200	101	32	8.9	
84131	--			202	99	33	8.4	
84132	--			201	100	32	9.2	
84133	--			201	100	32	8.5	
84134	--	Wet	Un known	202	99	32	5.3	5.1
84135	--			202	100	33	4.9	
84136	--			200	100	32	5.3	
84137	--			202	100	32	5.1	
84138	--			199	100	32	4.9	

FLEXURAL STRENGTH							Test Specification: ASTM C 880 - 98	
Mark No	Colour	Test Condition	Orientation	Size of specimen, mm			Flexural Strength N/mm ²	Average
				Length	Width	Thickness		
84119	--	DRY	Un known	382	100	31	8.4	7.6
84120	--			383	100	31	7.3	
84121	--			381	100	32	7.0	
84122	--			381	100	32	8.1	
84123	--			381	100	31	7.2	
84124	--	WET	Un known	382	100	31	5.6	4.8
84125	--			381	100	32	4.4	
84126	--			382	100	32	4.5	
84127	--			381	100	31	5.2	
84128	--			382	100	31	4.3	

SUMMARY OF RESULTS			TEST SPECIFICATION: ASTM C 616-99		
Physical Property	Test Method	Average Results	Table 1 Limit		
			Type I Sand Stone	Type II Quartzitic Sandstone	Type III Quartzite
Absorption by weight, %	ASTM C 97	10.6	Maximum 8	Maximum 3	Maximum 1
Density, kg/m ³	ASTM C 97	1908	Minimum 2003	Minimum 2400	Minimum 2560
Comp. Strength, MPa	ASTM C 170	30.5	Minimum 27.6	Minimum 68.9	Minimum 137.9
Modulus of Rupture, MPa	ASTM C 99	7.0	Minimum 2.4	Minimum 6.9	Minimum 13.9
Flexural Strength, MPa	ASTM C 880	6.2	Not Stated	Not Stated	Not Stated

Certificate Comments: Water Absorption, Density results fails to meet the requirements of Type I, II & III Classification and compressive strength result fails to meet the requirement of Type II & III Classification of ASTM C 616-99 – Quartz Based Dimension Stone.

Date Tested : 21/11/09-25/11/09

Tested By : Shakti/Suhail

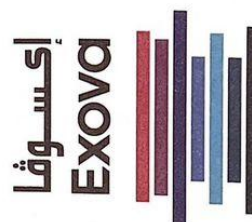
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TEST CERTIFICATE

Exova Ref No : ADC: 909814-3 Rev 0
Date Received : 18 November 2009
Date Reported : 29 November 2009
Order no : --

Description : Information Provided
Project : General
Project Owner : Various
Contractor : Various
Consultant : Various
Sample Description : Natural Stone – Basalt – Black Granite
Client Reference : Natural Stone – Basalt (Delivered on 18/11/09)
Sample Source : ARMENIA
Sampled Date : Not Given
Sampled By : ARMENIA
Sample Location : Fujairah

ABSORPTION & DENSITY				Test Specification: ASTM C 97 - 02		
Mark No	Colour	Oven Dry Weight, g	Soaked & SSD Wt. in Air, g	Soaked Wt. in Water, g	Water Absorption%	Density Kg/m ³
84174	Black	206.31	207.11	132.05	0.4	2749
84175	Black	202.04	202.49	130.24	0.2	2796
84176	Black	202.83	203.16	130.22	0.2	2781
84177	Black	206.92	207.68	133.49	0.4	2789
84178	Black	204.91	205.69	132.01	0.4	2781
				Average	0.3	2779

COMPRESSIVE STRENGTH			TEST SPECIFICATION: ASTM C – 170 Reap. 1999			
Mark No	Colour	Test Condition	Orientation to Rift	Compressive Strength, N/mm ²	Average	
84144	--	Dry	Un known	138.0	135.8	133.1
84145	--			148.9		
84146	--			148.5		
84147	--			113.1		
84148	--			130.4		
84149	--	Wet	Un known	134.4	130.4	
84150	--			123.0		
84151	--			126.3		
84152	--			133.2		
84153	--			135.0		

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BASALT

Client : ARMENIA FZE General Trading
Project : General

Exova Ref. No. : ADC 909814-3 Rev. 0
Date Reported : 29 November 2009

MODULUS OF RUPTURE				Test Specification: ASTM C 99 – 87 (Reap.2000)				
Mark No	Colour	Test Condition	Orientation	Size of specimen, mm			Modulus of Rupture N/mm ²	Average
				Length mm	Width mm	Height mm		
84164	--	DRY	Un known	198	101	32	9.7	12.5
84165	--			200	104	31	12.6	
84166	--			202	102	31	13.6	
84167	--			202	101	32	9.7	
84168	--			201	103	31	17.1	
84169	--	WET	Un known	201	103	32	13.3	10.1
84170	--			199	101	32	12.7	
84171	--			200	101	31	13.4	
84172	--			201	101	31	11.0	

FLEXURAL STRENGTH				Test Specification: ASTM C 880 - 98				
Mark No	Colour	Test Condition	Orientation	Size of specimen, mm			Flexural Strength N/mm ²	Average
				Length	Width	Thickness		
84154	--	DRY	Un known	381	100	31	14.1	14.0
84155	--			380	100	31	15.9	
84156	--			381	99	31	13.7	
84157	--			381	100	31	12.7	
84158	--			380	100	31	13.6	
84159	--	WET	Un known	381	100	31	14.8	14.6
84160	--			381	100	31	17.3	
84161	--			380	99	30	12.3	
84162	--			381	101	31	14.0	
84163	--			380	100	30	14.5	

SUMMARY OF RESULTS				TEST SPECIFICATION: ASTM C615-99			
Physical Property	Test Method	Average Results	Table 1 Limit				
Absorption by weight, %	ASTM C 97	0.3	Maximum 0.4				
Density, kg/m ³	ASTM C 97	2779	Minimum 2560				
Comp. Strength, MPa	ASTM C 170	133.1	Minimum 131				
Modulus of Rupture, MPa	ASTM C 99	11.3	Minimum 10.34				
Flexural Strength, MPa	ASTM C 880	14.3	Minimum 8.27				

Certificate Comments: The above results meet the requirements of table 1 of ASTM C615-99.

Date Tested : 21/11/09-25/11/09

Tested By : Shakti/Suhail

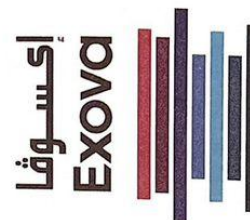
For and on behalf of Exova Limited (Abu Dhabi) - Umm Al Naar Laboratory

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TEST CERTIFICATE

Exova Ref No : ADC: 909814-4 Rev 0
Date Received : 18 November 2009

Date Reported : 29 November 2009
Order no : --

Description : Information Provided
Project : General
Project Owner : Various
Contractor : Various
Consultant : Various
Sample Description : Natural Stone – Travertine
Client Reference : Natural Stone – Travertine (Delivered on 18/11/09)
Sample Source : ARMENIA
Sampled Date : Not Given
Sampled By : ARMENIA
Sample Location : Fujairah

ABSORPTION & DENSITY				Test Specification: ASTM C 97 - 02		
Mark No	Colour	Oven Dry Weight, g	Soaked & SSD Wt. in Air, g	Soaked Wt. in Water, g	Water Absorption%	Density Kg/m ³
84209	Light Yellow	178.9	181.07	109.87	1.2	2505
84210	Light Yellow	185.7	187.58	114.23	1.0	2524
84211	Light Yellow	192.7	195.44	118.74	1.4	2505
84212	Light Yellow	184.7	185.36	112.54	0.4	2529
84213	Light Yellow	186.7	188.84	114.05	1.1	2489
				Average	1.0	2510

COMPRESSIVE STRENGTH			TEST SPECIFICATION: ASTM C – 170 Reap. 1999		
Mark No	Colour	Test Condition	Orientation to Rift	Compressive Strength, N/mm ²	Average
84179	--	Dry	Un known	69.6	66.3
84180	--			79.0	
84181	--			73.0	
84182	--			66.6	
84183	--			43.1	
84184	--	Wet	Un known	58.8	64.3
84185	--			36.0	
84186	--			82.1	
84187	--			42.4	
84188	--			102.1	

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TRAVERTINE

Client : ARMENIA FZE General Trading
Project : General

Exova Ref. No. : ADC 909814-4 Rev. 0
Date Reported : 29 November 2009

MODULUS OF RUPTURE				Test Specification: ASTM C 99 – 87 (Reap.2000)					
Mark No	Colour	Test Condition	Orientation	Size of specimen, mm			Modulus of Rupture N/mm ²	Average	
				Length mm	Width mm	Height mm			
84199	--	DRY	Un known	198	100	31	13.3	11.3	12.3
84200	--			201	101	32	13.4		
84201	--			200	100	31	13.3		
84202	--			200	101	31	13.3		
84203	--			200	104	32	9.3		
84204	--	WET	Un known	199	102	32	13.0	13.2	
84205	--			200	101	32	12.6		
84206	--			201	106	32	13.8		
84207	--			200	103	32	15.2		
84208	--			198	104	32	11.4		

FLEXURAL STRENGTH				Test Specification: ASTM C 880 - 98					
Mark No	Colour	Test Condition	Orientation	Size of specimen, mm			Flexural Strength N/mm ²	Average	
				Length	Width	Thickness			
84189	--	DRY	Un known	378	101	32	8.9	9.7	10.4
84190	--			381	104	32	10.6		
84191	--			379	103	33	9.1		
84192	--			378	101	32	10.2		
84193	--			380	101	33	9.5		
84194	--	WET	Un known	381	101	31	9.5	11.1	
84195	--			378	101	32	12.4		
84196	--			379	101	32	12.1		
84197	--			381	101	31	11.2		
84198	--			378	101	33	10.2		

SUMMARY OF RESULTS		TEST SPECIFICATION: ASTM C503-99	
Physical Property	Test Method	Average Results	Classification Type IV – Limit
Absorption by weight, %	ASTM C 97	1.0	Maximum 0.2
Density, kg/m ³	ASTM C 97	2510	Minimum 2305
Comp. Strength, MPa	ASTM C 170	65.3	Minimum 52
Modulus of Rupture, MPa	ASTM C 99	12.3	Minimum 7
Flexural Strength, MPa	ASTM C 880	10.4	Minimum 7

Certificate Comments: The above results meet the requirements of Type IV limits of table 1 of ASTM C503-99 except Water Absorption.

Date Tested : 21/11/09-25/11/09

Tested By : Shakti/Suhail

For and on behalf of Exova Limited (Abu Dhabi) - Umm Al Naar Laboratory

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