EXPORT COUNCIL
BUILDING, REFRACTORY & METALLURGY INDUSTRIES
المجلس التصديرى لمواد البناء والحراريات والصناعات المعدنية

Applications ,Surface Finishes ,Physical and Mechanical Properties and Recommended Treatment of The Egyptian Marble

MARBLE AND GRANITE TESTING LAB.

Egyptian Marble

Marble Type	Application						Surface Finishing					Physical and Mechanical Properties							Treatment	
	Cladding		Floors																	
	External	Internal	External	Internal	Heavy Traffic	Light Traffic	Honed	Brushed	Brush hammered	Acid wash	Polished	Minumum Thick.	Compressive Mpa	Tensile strength (MPa)	Abrasion resistance (Ha)	Density (gm/cm3)	Modulus of rupture (PSI)	Water absorption %	Need salt treatment	Chemical treatment
Alabaster	×	√	×	√	×	√	√	×	×	×	√	20m	104	18	N/A	2.73	21	0.12	×	**Cladding** -Polyester On a perfectly dried & Cleaned surface -Water repellent Siloxanes "Top" **External paving , Floors & Stairs**
Mareolla	√	√	√	√	×	√	√	√	√	√	√	10m	133	16	26.4	2.618	20	0.29	√	
Breccia sinai	√	√	√	√	x	√	√	√	√	√	√	10m	202	16	33.9	2.662	20	0.26	√	
Filetto Hassana	√	√	√	√	x	√	√	×	√	√	√	10m	167	12	31.6	2.675	17	0.17	√	
Galala	√	√	√	√	×	√	√	√	√	√	√	10m	176	12.5	31.6	2.675	18	0.17	√	
Golden cream	√	√	√	√	×	√	√	√	×	√	√	10m	103	12	40.1	2.561	17	1.42	√	
Golden sinai	√	√	√	√	x	√	√	√	√	√	√	10m	202	16	33.9	2.662	20	0.26	√	
Hashma	√	√	√	√	×	√	×	×	×	√	×	30m	102	11	21.3	2.156	12	7.39	×	
Khatmeya	√	√	√	√	x	√	√	√	√	√	√	10m	156	14	26.5	2.567	16	1.31	√	
Samaha	√	√	√	√	×	√	√	√	√	√	√	10m	213	20	38.1	2.627	26	0.12	√	
Silvia	√	√	√	√	×	√	√	√	√	√	√	20m	104	10	26.7	2.478	14	1.62	√	
Sinai Pearl	√	√	√	√	x	√	√	√	√	√	√	10m	156	14	26.5	2.567	16	1.31	√	
Sunny	√	√	√	√	×	√	√	√	√	√	√	10m	133	16	26.4	2.618	20	0.29	√	
Milliibrown	√	√	√	√	×	√	√	√	√	√	√	10 m	190	22	38.9	2.61	28	1.32	√	

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Applications ,Surface Finishes ,Physical and Mechanical Properties and Recommended Treatment of The Egyptian Granite

معمل اختبار الرخام والجرانيت
MARBLE AND GRANITE TESTING LAB.

Egyptian Granite

Granite Type	Application						Surface Finishing				Physical and Mechanical Properties						
	Cladding		Floors														
	External	Internal	External	Internal	Heavy Traffic	Light Traffic	Honed	Brushed	Flammed	Polished	Minumum Thick.	Compressive Mpa	Tensile strength (MPa)	Abrasion resistance (Ha)	Density (gm/cm3)	Modulus of rupture (MPa)	Water absorption %
Bianco Halayieb	√	√	√	√	√	√	√	√	√	√	10m	180	13.7	48.6	2.659	17.2	0.28
White Safaga	√	√	√	√	√	√	√	√	√	√	10m	147	14.9	38.1	2.627	17.9	0.12
Ghiandone Aswan	√	√	√	√	√	√	√	√	√	√	10m	148	12.8	45.5	2.634	16	0.09
Ghazal light	√	√	√	√	√	√	√	√	√	√	10m	165	12.8	40.1	2.645	16	0.07
Ghazal dark	√	√	√	√	√	√	√	√	√	√	10m	171	13.7	40.6	2.647	16.5	0.08
Verdi	√	√	√	√	√	√	√	√	√	√	10m	174	11.6	18.42	2.64	13.9	0.17
Red Royal	√	√	√	√	√	√	√	√	√	√	10m	140	10.9	43.8	\	13.7	0.13
Red Fersan	√	√	√	√	√	√	√	√	√	√	10m	150	12.8	43.5	2.634	16	0.08
Grey Stone	√	√	√	√	√	√	√	√	√	√	10m	147	14.9	38.1	2.627	17.9	0.12
Red Aswan	√	√	√	√	√	√	√	√	√	√	10m	217.7	28.7	16.23	2.628	34.6	0.8
Red Aswan (M)	√	√	√	√	√	√	√	√	√	√	10m	183	13.5	51.7	2.673	16.5	0.06
Rosa Al Nasr	√	√	√	√	√	√	√	√	√	√	10m	157	12.5	40.6	2.639	15.2	0.15
Sharm	√	√	√	√	√	√	√	√	√	√	10m	170	16.5	47.7	2.637	17.9	0.05
Karnak grey	√	√	√	√	√	√	√	√	√	√	10 m	147	16.5	38.1	2.627	17.9	0.12
Nero Aswan	√	√	√	√	√	√	√	√	√	√	10m	204	32.4	51.9	2.854	34.9	0.03
Red Nefertari	√	√	√	√	√	√	√	√	√	√	10m	150	13.3	43.5	2.634	16	0.08
Rosa Hodi Dark	√	√	√	√	√	√	√	√	√	√	10m	150	13.5	39.6	2.638	16.5	0.09
Rosa Hodi Light	√	√	√	√	√	√	√	√	√	√	10m	156	12.6	39.1	2.635	15.2	0.19
Rosa Kali	√	√	√	√	√	√	√	√	√	√	10m	163	13.3	45.2	2.616	16	0.09
Rosa Sinai	√	√	√	√	√	√	√	√	√	√	10m	157	12.7	40.6	2.639	15.2	0.15
Royal Red	√	√	√	√	√	√	√	√	√	√	10m	140	11.3	43.8	2.621	13.7	0.13
Quseir Brown	√	√	√	√	√	√	√	√	√	√	10m	162	13.6	43.1	2.674	16.5	0.04
Breccia Fawakhir	√	√	√	√	√	√	√	√	√	√	10m	197	14.3	53.1	2.808	17.2	0.02

Some physico-mechanical parameters of Egyptian limestones

Stone Name	Compressive Strength (PSI)	Tensile Strength (PSI)	Abrasion Resistance (Ha)	Density (Kg/m^3)	Water Absorption%	Modulus of Rupture (PSI)
Golden Cream	10300	1200	40.1	2.561	1.42%	1700
Sunny Dark	13300	1600	26.4	2.618	0.29%	2000
Sunny Light	13300	1600	26.4	2.618	0.29%	2000
Perlato	20200	1600	33.9	2.662	0.26%	2000
Sinai Pearl (Triesta) Light	15600	1400	26.5	2.567	1.31%	1600
Sinai Pearl Dark	19800	1900	38.8	2.628	0.89%	1900
Khatmeya	15600	1400	26.5	2.567	1.31%	1600
Rosa Cream	20200	1600	33.9	2.662	0.26%	2000
Galala	17600	1250	31.6	2.675	0.17%	1800
Galala Classic	18300	1300	34.8	2.627	0.12%	1800
Galala Extra	16900	1400	29.8	2.581	0.12%	1800
Silvia	10400	1000	26.7	2.478	1.62%	1400
Golden Sinai	20200	1600	33.9	2.662	0.26%	2000
Imperial Brown	19800	2200	35.2	2.156	0.06%	2200
Imperial Grey	20200	2300	33.9	2.662	0.05%	2000
Imperial Beige	22580	2880	45.5	2.156	0.01%	2000
Imperial Bronze	21300	2000	38.1	2.627	0.08%	2600
Aquanile	15650	2900	29.8	2.581	0.12%	2000

Some physico-mechanical parameters of Egyptian granites

Rock Name	Compressive Strength (PSI)	Tensile Strength (PSI)	Abrasion Resistance (Ha)	Density (Kg/m^3)	Water Absorption%	Modulus of Rupture (PSI)
Gandonna	21500	2400	45.5	2.634	0.09%	2300
Verdi Ghazal Light	23900	2000	40.1	2.645	0.07%	2300
Verdi Ghazal Dark	24800	2200	40.6	2.649	0.08%	2400
Red Hurghada	22300	2200	43.8	2.621	0.13%	2000
Grey Stone (Sherka)	21300	2000	38.1	2.627	0.12%	2600
Karnak Grey	21300	2000	38.1	2.627	0.12%	2600
Nero Aswan	29600	4700	51.9	2.854	0.03%	4500
Red Aswan Light	26500	2200	51.7	2.673	0.06%	2400
Red Aswan Dark	21500	22	43.5	2.634	0.08%	2300
Houdy Dark	21700	2100	39.6	2.638	0.09%	2400
Houdy Light	22600	1900	39.1	2.635	0.19%	2200
Imperial Rose	23700	2200	45.2	2.616	0.09%	2300
Imperial Red	20300	1900	43.8	2.621	0.13%	2000
Sahara Brown	23500	2300	43.1	2.674	0.04%	2400
Bianca Halayeb	26100	2300	48.6	2.659	0.28%	2500
Red Royal	20300	1900	43.8	2.621	0.13%	2000

Compressive Strength: (ASTM C170)

Flexural Strength: (ASTM C880)

Abrasion Resistance Hardness: (ASTM C241/C1353)

Density: (ASTM C97)

Water Absorption %: (ASTM C97)

Modulus of Rupture: (ASTM C99)