



SGS U.S. Testing Company Inc.

Sample: "Cottonwood Limestone"

**TEST RESULTS:**

**ASTM C 170 – Compressive Strength**

<u>Specimen</u>	<u>Width (in)</u>	<u>Length (in)</u>	<u>Ultimate Load (lbs)</u>	<u>Compressive Strength (Psi)</u>
1	2.527	2.595	39500	6024
2	2.532	2.602	38300	5814
3	2.526	2.599	47700	7269
4	2.522	2.605	47100	7172
5	2.527	2.607	51900	7880
Average	-	-	-	6832 Psi
Average	-	-	-	47.10 MPa

**MINIMUM REQUIREMENTS:**

**Compressive Strength (MIN)**

<b>ASTM C615-96</b> Granite		19000	Psi
<b>ASTM C503-97</b> Marble	(Class I, Calcite) (Class II, Dolomite) (Class III, Serpentine) (Class IV, Travertine)	7500 7500 7500 7500	
<b>ASTM C568-96</b> Limestone	(Low Density) (Medium Density) (High Density)	1800 4000 8000	
<b>ASTM C616-97</b> Quartz Based	(Sandstone) (Quartzitic Sandstone) (Quartzite)	4000 10000 20000	

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End of Report

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**TEST RESULTS:**

**Sample:** "Cottonwood Limestone"

**ASTM C 99 – Modulus of Rupture**

<u>Specimen</u>	<u>Width, in.</u>	<u>Thickness, in.</u>	<u>Ultimate Load, lbs.</u>	<u>Modulus of Rupture, psi</u>
1	4.032	2.255	1665	853
2	4.035	2.248	1630	840
3	4.037	2.217	2135	1130
4	4.036	2.202	1747	937
5	4.052	2.189	1799	973
Average (English)	4.038	2.222		947 Psi
Average (metric)	-	-		6.53 MPa

**Minimum Requirements:**

**Modulus of Rupture (MIN)**

<b>ASTM C568-96</b>	Limestone (low-density)	400 Psi
	Limestone (med-density)	500
	Limestone (high-density)	1000
<b>ASTM C616-97</b>	Sandstone	350
	Quartzitic Sandstone	1000
	Quartzite	2000
<b>ASTM C 503-97</b>	Marble (Class I, II, III, IV)	1000
<b>ASTM C 615-96</b>	Granite	1500

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**TEST RESULTS**

**Samples:** "Cottonwood Limestone"

**ASTM C 97 – Absorption and Specific Gravity**

<u>Specimen</u>	<u>Wet Weight (g)</u>	<u>Dry Weight (g)</u>	<u>Volume (cm<sup>3</sup>)</u>	<u>Density (lb/ft<sup>3</sup>)</u>	<u>Specific Gravity</u>	<u>Absorption (%)</u>
1	341.10	328.03	140.83	145.35	2.329	3.98
2	342.95	327.64	142.91	143.06	2.293	4.67
3	354.11	343.33	141.96	150.91	2.418	3.14
Average	-	-	-	146.44	2.347	3.93

**Minimum Requirements:**

**Absorption, max.      Density, min.**

<b>ASTM C 503-97</b>	Marble	(Class I, Calcite)	<b>0.20</b>	<b>162</b>
		(Class II, Dolomite)	<b>0.20</b>	<b>175</b>
		(Class III, Serpentine)	<b>0.20</b>	<b>168</b>
		(Class IV, Travertine)	<b>0.20</b>	<b>144</b>
<b>ASTM C 615-96</b>	Granite		<b>0.40</b>	<b>160 lb/ft<sup>3</sup></b>
<b>ASTM C 568-96</b>	Limestone	(Low Density)	<b>12.00</b>	<b>110</b>
		(Medium Density)	<b>7.50</b>	<b>135</b>
		(High Density)	<b>3.00</b>	<b>160</b>
<b>ASTM C 616-97</b>	Quartz Based	(Sandstone)	<b>8.00</b>	<b>125</b>
		(Quartzitic Sandstone)	<b>3.00</b>	<b>150</b>
		(Quartzite)	<b>1.00</b>	<b>160</b>

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End of Report



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**TEST RESULTS:**

**ASTM C 241- Abrasion Resistance:**

Samples: "Cottonwood Limestone"

<u>Specimen</u>	<u>Bulk Specific Gravity</u>	<u>Average Weight (g)</u>	<u>Weight Loss (g)</u>	<u>Abrasion Index (H<sub>a,b</sub>)</u>
1	2.285	138.80	3.297	7.45
2	2.290	137.22	2.904	8.48
3	2.350	147.44	2.922	8.66
Average	2.308			8.20

**Minimum Requirements:**

**Abrasion Resistance**

ASTM C 503-97	Marble (Class IV-Travertine)	10.0
ASTM C 615-96	Granite	25.0
ASTM C 616-97	Sandstone	2.0
ASTM C 616-97	Quartz Based Sandstone	8.0
ASTM C 568-96	Limestone (Low, Med., High)	10.0
ASTM C 629-97	Slate (Interior, Exterior)	8.0

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End of Report