



# SMITH-EMERY LABORATORIES

An Independent Commercial Testing Laboratory, Established 1904

781 E. Washington Boulevard Los Angeles, California 90021 ♦ (213) 749-3411 ♦ Fax (213) 741-8626

Project/Job No : 35562-1  
Laboratory No : T-07-045

April 13, 2007

Client : GREG FILLO  
**BEDROSIAN'S TILE & MARBLE**  
1515 E. WINSTON ROAD  
ANAHEIM, CA 92805

Subject: 19-3/4" x 19-3/4" x 3/8" Thick Actual Size, TCR NUV50B Beige Ceramic Tiles, Made in China  
Specification: ASTM C 1028-96  
Source: Submitted to Smith-Emery Laboratories by Client on March 7, 2007.

### STATIC COEFFICIENT OF FRICTION (ASTM C 1028-96)

A block of wood with a 3" x 3" x 1/8" section of standard neolite sole liner attached, was placed on the surface to be tested. on top of this assembly. a 50 pound (22kg) weight was placed. Using dynamometer. the force in pounds required to cause the test assembly to slip parallel to the test surface was measured. Four measurements were taken on each of three test surfaces, each measurement perpendicular to the previous one. The twelve measurements were averaged to obtain the coefficient of friction for each test condition

#### A. As Received:

Test Condition	Tile No.	N	E	S	W	Average	Individual	S.C.O.F
							Coefficient of Friction (fc)	After Neolite Correction Factor
Dry Neolite	1	47	48	46	47	47.00	(0.92)	0.73
	2	47	48	46	47			
	3	46	47	47	48			
Wet Neolite	1	41	39	40	39	39.67	(0.77)	0.71
	2	40	39	40	39			
	3	41	40	39	39			

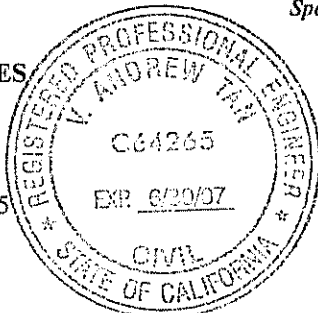
#### B After Cleaning with Hillyards Renovator. (ASTM C 1028 Standard Cleaner)

Dry Neolite	1	47	46	47	47	46.83	(0.91)	0.72
	2	46	48	47	47			
	3	47	47	46	47			
Wet Neolite	1	40	40	39	40	39.75	(0.78)	0.72
	2	39	40	39	40			
	3	39	40	40	41			

Respectfully Submitted,  
SMITH - EMERY LABORATORIES

V. Andrew Tan  
Registered Civil Engineer No.: C64265  
Registration Expires: 06-30-07

mc



Specification: Department of Justice ADA Title III Regulation 28 CFR Part 36, Section A4.5.1; Recommends minimum of 0.60 SCOF for horizontal surfaces and 0.80 SCOF on ramps

- Materials Tested Comply With Specifications.
  - Horizontal;  Ramps or Incline
- Materials Tested Did Not Comply With Specifications.
- No Established Criteria for Acceptable Limits.
- For Information Only.

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Subject: 20" x 20" (19-3/4" x 19-3/4" x 3/8" Thick Actual Size) TCR NUV50B Beige Ceramic Tiles, Made in China  
Specification: ASTM C 373  
Source: Submitted to Smith-Emery Laboratories by Client on March 7, 2007.

## REPORT OF TEST

### Water Absorption Test (ASTM C 373)

Samples were dried to a constant weight in an oven at 150 °C, then cooled and weighed. Then were immersed in distilled water (boiling vigorously for 5 hours before cooling gradually to a total elapsed time of 29 hours). Samples were removed from water, wiped dry and immediately reweighed.

Sample No.	Dry Wt. (grams)	Wet Wt. (grams)	Percent Water Absorption	Average
1	395.36	397.15	0.45%	
2	390.13	392.08	0.50%	
3	389.66	391.56	0.49%	<u>0.49%</u>
4	391.61	393.59	0.51%	
5	394.35	396.25	0.48%	

**Requirements:** ANSI A 137.1 (General) - When tested as described in ASTM C 373, the tile in the sample shall be impervious for porcelain paver tile and shall be impervious, vitreous or semi-vitreous for natural clay paver tile.

Impervious Tile (0.5% or less Wtr. Abs.)

Vitreous Tile (0.5%-3.0% Wtr. Abs.)

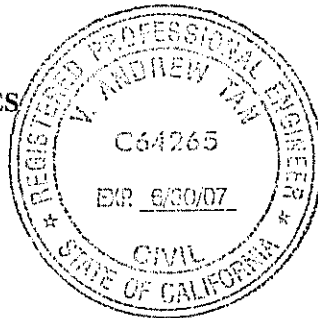
Semi-Vitreous Tile (3.0%-7.0% Wtr. Abs.)

Unglazed Quarry Tile (Max. 5.0% Wtr. Abs.)

**Remarks:** Samples tested qualify for Impervious Tile.

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- Materials Tested Did Not Comply With Specifications.
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Subject: 20" x 20" (19-3/4" x 19-3/4" x 3/8" Thick Actual Size) TCR NUV50B Beige Ceramic Tiles, Made in China  
Specification: ASTM C 648  
Source: Submitted to Smith-Emery Laboratories by Client on March 7, 2007

## REPORT OF TEST

### BREAKING STRENGTH (ASTM C 648)

The tile samples were placed on a test fixture having three (3) supports located in a circle three and fifteen-thirty-secondths (3-15/32) inches in diameter with the load applied at the center as per specifications. *Results are as follows*

<u>Sample Number</u>	<u>Breaking Load (Lbs.)</u>
1.	628
2.	568
3.	553
4.	538
5.	604
6.	588
7.	540
8.	562
9.	575
10.	568

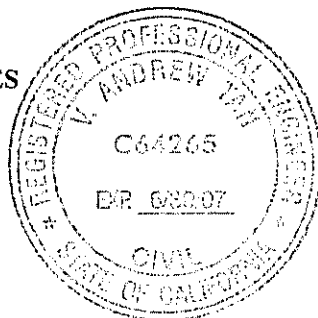
Average: 

572
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**Requirements:** ANSI A 137.1 (General) Breaking Strength. When tested as described in ASTM C-648, the average breaking strength shall be 250 pounds or greater.

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- The materials tested comply with specifications.
- The materials tested did not comply with specifications.
- No established criteria for acceptable limits.

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SUBJECT: 20" x 20" (19-3/4" x 19-3/4" x 3/8" Thick Actual Size) TCT NUV50B Beige Ceramic Tiles, Made in China  
Specification: MOHS Hardness Test (MOHS Scale)  
Source: Submitted to Smith-Emery Laboratories by Client on March 7, 2007.  
Date Tested: 3/13/07

## REPORT OF TEST

### SCRATCH HARDNESS OF SURFACE (MOHS SCALE)

A sharp angular mineral starting with hardness one (1) on the MOHS Scale is drawn while applying a uniform pressure across the surface of the tile. The highest hardness number with which no scratches visible to the naked eye occur shall be taken as the result of the test.

AREA	SAMPLE NUMBER	MOHS SCALE	MINERAL EQUIVALENT
	1	90	Corundum
	2	90	Corundum
Top Surface Only	3	90	Corundum
	4	90	Corundum
	5	90	Corundum

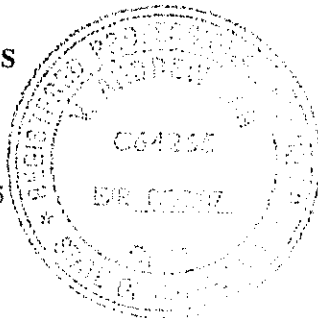
MOHS Table

Mohs #	Mineral	Mohs #	Mineral
1.0	Talc	6.0	Microcline
2.0	Selenite	7.0	Quartz
3.0	Calcite	8.0	Topaz
4.0	Fluorite	9.0	Corundum
5.0	Apatite	10.0	Diamond

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- Materials Tested Did Not Comply With Specifications.
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Subject: 20" x 20" (19-3/4" x 19-3/4" x 3/8" Thick Actual Size) TCR NUV50B Beige Ceramic Tiles, Made in China  
Specification: ASTM C-650 (Qualitative Observation Only)  
Source: Submitted to Smith-Emery Laboratories by Client on March 7, 2007.

## REPORT OF TEST

### CHEMICAL RESISTANCE OF CERAMIC TILE (ASTM C 650)

Exposure time : 24 hours

Room temperature : 75.5 °F

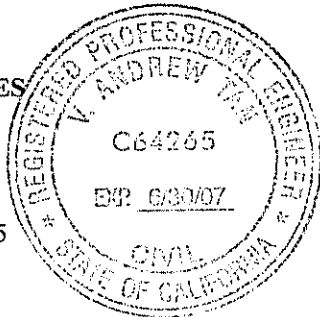
<u>Tile Number</u>	<u>Acid 10% HCL</u>	<u>Alkali 10% KOH</u>
1.	Unaffected	Unaffected
2.	Unaffected	Unaffected
3.	Unaffected	Unaffected
4.	Unaffected	Unaffected
5.	Unaffected	Unaffected
6	Unaffected	Unaffected

Requirements: No Requirement

Remarks : Sample Tested Shows no Physical Damage After Test

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- The materials tested comply with specifications.
- The materials tested did not comply with specifications.
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