

American Engineering Testing, Inc. Wausau | Green Bay

Schofield, WI 54476 (715) 359-3534

4203 Schofield Ave, Ste 1 | 3194 Market St., Ste C Green Bay, WI 54304 (920) 347-1286

Toll Free: (800) 972-6364

www.amengtest.com Report No: MAT:16-07878-S3

**Material Test Report** 

Client: KAFKA GRANITE, LLC CC: Jeremy Bores

John Meyer

Project: 2016 CONSTRUCTION PROJECTS

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Date of Issue:

Reviewed By:

7/29/2016 Paul Michlig, CET Construction Manager

Issue No: 1

Sample Details

Job No:

Sample ID 16-07878-S3

Field Sample ID

7/12/2016 **Date Sampled** Source Kafka Granite Material Turquoise Marble

Specification None

12-02155

**Sampling Method** Sampled by Client Location Kafka Granite **Date Submitted** 7/13/2016

Test Results			
Description	Method	Result	Limits
Specific Gravity (OD)	ASTM C 127	2.71	
Specific Gravity (SSD)		2.75	
Apparent Specific Gravity		2.83	
Absorption (%)		1.6	
Density Determined Without First Drying?		No	
Additional Notes			
Date Tested		7/19/2016	

## Comments

N/A



July 29, 2016

CONSULTANTS

ENVIRONMENTAL

GEOTECHNICAL

MATERIALS

FORENSICS

Mr. Jeremy Bores Kafka Granite, LLC 550 East Highway 153 Mosinee, WI 54455

Re: Mohs Hardness Testing 2016 Construction Projects Schofield, WI AET Project No. 12-02155

Mr. Bores:

This report presents the results of our Mohs hardness testing of one sample of stone submitted by you on July 20, 2016. The stone is to be referred to as "#3 Turquoise Marble". Four stones were submitted to our laboratory and one was chosen for testing. The scope of our work in this report was confined to performing Mohs hardness testing on one stone sample.

## **Conclusions**

Based on our observations and analysis our opinions are as follows:

- 1. The overall hardness of the "#3 Turquoise Marble" stone is approximately 3 to 3.5 on the Mohs scale. The number is based upon testing values of the overall hardness of the rock using Mohs hardness picks.
- 2. The stone appeared to generally consist of a fine grained, sedimentary rock. A hardness value determination of the stone based upon the mineral assemblage was not conducted. Mohs picks with hardness 2 thru 6 were used on the stone. The Mohs hardness picks determined an approximate overall hardness of 3 to 3.5. This hardness is a more consistent result then using the mineral assemblage because the Mohs hardness picks were drawn directly across a freshly lapped surface of the stone.
- 3. In general, rocks are not homogeneous with regards to Mohs mineral hardness. The best effort was made to accomplish the hardness analysis at a representative area within the stone selected. Because rocks can consist of several different minerals with different quantities and different hardness, and the Mohs scale represents the hardness of individual minerals, the Mohs scale should only be used as an approximation when determining the overall hardness of a rock.

Mr. Jeremy Bores Sample ID: #3 Turquoise Marble AET Project No. 12-02155 July 29, 2016 Page 2 of 2

## **Procedures**

Our work was performed on July 26, 2016 and subsequent dates. The hardness testing was completed through the use of standard geologic Mohs hardness points and optical microscopy on a lapped hand sample. The review was performed in general accordance with Standard Operating Procedure 24-LAB-004, "Petrographic Examination of Aggregates for Concrete, ASTM C295." Observations were made using an Olympus SZX-12 stereo-zoom binocular microscope with magnification up to 160x.

Photographs are included to illustrate our work and conclusions.

## **Remarks**

The sample will be retained for a period of at least sixty days from the date of this report. Unless further instructions are received by that time, the sample may be discarded. The geologic services for this project have been conducted in a manner consistent with that level of care and skill exercised by members of the profession currently practicing in this area under similar budget and time constraints. The results relate only to the sample analyzed. No warranty, express or implied, is made.

It has been a pleasure to serve you on this project. Should you have any questions on this report, please do not hesitate to call.

Respectfully,

American Engineering Testing, Inc.

Christopher J. Braaten, PG Petrographer/Geologist MN License #48312 Phone: 651-659-1352

cbraaten@amengtest.com

Attachment: "Materials Test Report"

Reviewed by:

American Engineering Testing, Inc.

Gerard Moulzolf, PG

Vice President/Principal Retrographer

MN License #30023

Phone: 651-659-1346

gmoulzolf@amengtest.com

**AET PROJECT NO:** 12-02155

**PROJECT:** 2016 Construction Projects



PHOTO: 1



**SAMPLE ID:** 

#3 Turquoise Marble

**DESCRIPTION:** 

Overall view of the sample as received.

**DATE:** July 29, 2016



**SAMPLE ID:** 

#3 Turquoise Marble

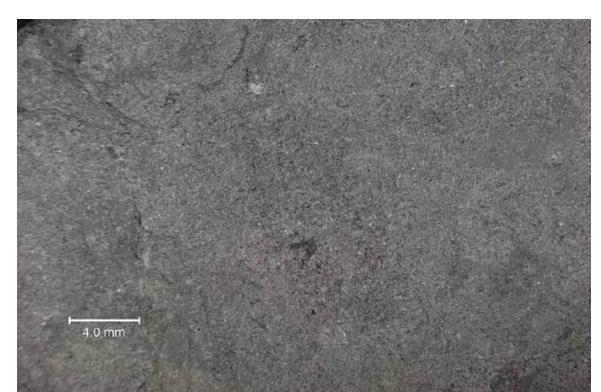
**DESCRIPTION:** 

View of the stone selected for hardness testing.

**AET PROJECT NO:** 12-02155 **DATE:** July 29, 2016 **PROJECT:** 

2016 Construction Projects

Scholfield, WI



РНОТО: 3

**SAMPLE ID:** MAG:

#3 Turquoise Marble 5x

**DESCRIPTION:** 

View of the lapped cross section of the stone.



РНОТО: 4



**SAMPLE ID:** MAG:

#3 Turquoise Marble 5x

**DESCRIPTION:** View of the lapped cross section of the stone after Mohs hardness testing. Note that hardness pick 2 did not scratch, hardness picks 3 and 4 scratched several minerals, and hardness picks 5 and 6 scratched all minerals. The general Mohs hardness would be approximately 3 to 3.5.