

PT:	Project:	2011 Production Average		Date:
Sieve	% Passing	% Passing	% Passing	% Passing
LG Everist, Inc.	Ortonville Plant	Ortonville Plant	Dell Rapids, SD	8/5/11
	1/2" x #4	Man. Sand	3/8" x #8	
	% Passing	% Passing	% Passing	
21/2"				
2"				
1 1/2"				
1"				
3/4"				
1/2"	100		100	
3/8"	99	100	99	
1/4"				
#4	12	99	37	
#8	0.8	84	3.1	
#16		55	1.2	
#30		33	0.9	
#50		13	0.7	
#100		3.8	0.5	
#200		1.0	0.3	

Remarks:  
 The above gradations are base on 2011 production averages.  
 The actual gradations may vary from what is listed above.

# MIDWEST TESTING LABORATORY

4102 - 7th Ave. N. / P.O. Box:3042 / Fargo, North Dakota 58106  
Phone (701) 282-8633 / Fax (701) 282-8635

## REPORT OF: TESTS OF COARSE AGGREGATE

**PROJECT:** Plant Tests 2011, Ortonville Quarry  
**REPORTED TO:** Attn: Jeff Damer  
 L.G. Everist, Inc.  
 P.O. Box 6828  
 Sioux Falls, SD 57117-5829  
**PROJECT NO.:** M1111001

**SAMPLE SOURCE:** Ortonville Stone Company, Ortonville, Minnesota, Big Stone County,  
 Township 121, Range 46 West, Section 26  
 1<sup>st</sup> Quarry Rock  
 January 5, 2011

**SAMPLE DESCRIPTION:**

**DATE SUBMITTED:**

**TEST RESULTS:**

Clay Lumps & Fines Particles (AASHTO T 112)

1" - 3/4"	(10)
3/4" - 3/8"	(73)
3/8" - #4"	(16)

Composite Blend

Lightweight Particles (AASHTO T 113)  
 Using 2.0 Sp. Gr. Zinc Chloride Solution

Coal and Lignite (ASTM C 33)

Materials Finer than 75-µm (No. 200 Sieve) (ASTM C 117)

Magnesium Sulfate Soundness (ASTM C88)

1" - 3/4"	(10)
3/4" - 3/8"	(73)
3/8" - #4"	(17)

Composite Blend

Los Angeles Abrasion Loss of Large-Size Coarse Aggregate (ASTM C 535)

Grading 2 (2"-1")	20%
Grading 3 (1 1/2"-3/4")	33%

Los Angeles Abrasion Loss of Small-Size Coarse Aggregate (ASTM C 131)

Grading B (3/4"-3/8")	32%
Grading C (3/8"-#4)	34%
Grading D (#4-#8)	30%

Flat or Elongated Particles (ASTM D 4791)

Total Flat or Elongated (3:1 ratio)(%)

5.2

FAA-P-501 Specification  
8.0 Max. (6:1)

Bulk Density ("Unit Weight") and Voids in Aggregate (ASTM C 29)

Loose Oven-Dry Bulk Density

88.5 lbs./M<sup>3</sup>

Loose Oven-Dry Void Content

39.1%

Rodded Oven-Dry Bulk Density

97.5 lbs./M<sup>3</sup>

Rodded Oven-Dry Void Content

32.9%

Relative Density (Specific Gravity), & Absorption of Coarse Aggregate (ASTM C 127)

Bulk Oven-Dry Relative Density

2.633

Saturated Surface-Dry Relative Density

2.643

Apparent Relative Density

2.660

Absorption

0.38%

Scratch Hardness of Coarse Aggregate Particles (ASTM C 851-78)

1" - 3/8"

0.0%

3/8" - #4

0.0%

**REMARKS:** The above samples were prepared and submitted by L.G. Everist, Inc. Percent of original gradation based on pit average gradations provided by L.G. Everist.

SIGNED





# MIDWEST TESTING LABORATORY

4102 - 7th Ave. N. / P.O. Box 3042 / Fargo, North Dakota 58108  
Phone (701) 282-6633 / Fax (701) 282-9635

## REPORT OF: TESTS OF FINE AGGREGATE

**PROJECT:** Plant Tests 2011, Ortonville Quarry  
**DATE:** February 24, 2011

**REPORTED TO:** Attn: Jeff Damer  
L.G. Everist, Inc.  
Sioux Falls, SD 57117-5829

COPIES: 2

**PROJECT NO:** M1111001

### SAMPLE SOURCE:

Ortonville Stone Company, Ortonville, Minnesota, Big Stone County  
Township 121, Range 46 West, Section 26  
Manufactured Sand

### SAMPLE DESCRIPTION:

January 5, 2011

### DATE SUBMITTED:

### TEST RESULTS:

ASTM C 33  
SPECIFICATIONS

Clay Lumps & Friable Particles (AASHTO T 112)  
#4-#8  
#8-#16

0.0%

Lightweight Particles (AASHTO T 113)  
Using 2.0 Sp. Gr. Zinc Chloride Solution

0.0%

Coal and Lignite (ASTM C 33)

0.0%

Materials Finer than 75-µm (No. 200 Sieve) (ASTM C 117)

0.8%

Magnesium Sulfate Soundness (ASTM C88)  
3/8-#4 (1)  
#4-#8 (29)  
#8-#16 (25)  
#18-#30 (19)  
#30-#50 (16)

15.4%

15.4%

10.6%

6.0%

8.7%

9.5%

15.0 Max

Bulk Density ("Unit Weight" and Voids in Aggregate (ASTM C 29)  
Loose Over-Dry Bulk Density  
Loose Over-Dry Void Content  
Rodded Over-Dry Bulk Density  
Rodded Over-Dry Void Content

89.8 lbs./ft.<sup>3</sup>

45.5%

96.5 lbs./ft.<sup>3</sup>

41.3%

Relative Density, (Specific Gravity) & Absorption of Fine Aggregate (ASTM C 128)  
Bulk Over-Dry Relative Density  
Saturated-Surface Dry Relative Density

2.633

2.842

2.655

0.31%

Uncompacted Void Content (Fine Aggregate Angularity)(ASTM C 1252)  
Test Method A - Standard Gradation

48.6%

**REMARKS:** The above samples were prepared and submitted by L.G. Everist, Inc.

a). Percent of original gradation based on quarry average gradations provided by L.G. Everist

SIGNED

# MIDWEST TESTING LABORATORY

4102 - 7th Ave. N. / P.O. Box 3042 / Fargo, North Dakota 58108  
 Phone (701) 282-8633 / Fax (701) 282-8635

## REPORT OF: TESTS OF COARSE AGGREGATE

**PROJECT:** Plant Tests 2010-2011, West Quarry  
 Dell Rapids, South Dakota

**REPORTED TO:** Attn: Jeff Darner - email  
 L.G. Everest, Inc.  
 PO Box 5829  
 Sioux Falls, SD 57117-5829

**PROJECT NO.:** 15730

**SAMPLE SOURCE:** West Quarry, Dell Rapids, South Dakota, Minnehaha County  
 Northwest 1/4, Section 18, Township 104 North, Range 49 West.  
 1-#4 Quarry Aggregate, Tracking #77149

**DATE SUBMITTED:** September 27, 2010

**2010 KOMMB CONCRETE MATERIAL SPECIFICATION**  
 KDOT Special Provision 07-04001

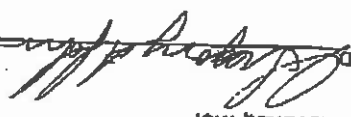
## TEST RESULTS:

TEST RESULTS:	DATE SUBMITTED:	SAMPLE DESCRIPTION:	SAMPLE SOURCE:
Soundness of Aggregates by Freezing & Thawing (ASTM T 103) Procedure A - Total Immersion, 50 cycles 1 1/2" - 1/2" 1/2" - 3/8" 3/8" - #4			
Relative Density, (Specific Gravity) & Absorption of Coarse Aggregate (ASTM C 127) Bulk Over-Dry Relative Density Saturated Surface-Dry Relative Density Apparent Relative Density Absorption	2.632 2.639 2.651 0.28%		
Lightweight Particles (ASTM C 123) Using 2.0 Sp. Gr. Zinc Chloride Solution	0.0%		0.5% Max.
Clay Lumps & Friable Particles (ASTM C 142) 1/2"-3/8" 3/8"-#4	0.0%		0.5% Max.
Coal and Lignite (ASTM C 33)	0.0%		0.3% Max.
Materials Finer than 75-µm (No. 200 Sieve) (ASTM C 117) Sum of all Deleterious	0.2%		0.3% Max.
Magnesium Sulfate Soundness (ASTM C88) 1 1/2" - 1/2" 1/2" - 3/8" 3/8" - #4	0.08% 0.29% 0.17%		1.0% Max.
Los Angeles Abrasion Loss of Small-Size Coarse Aggregate (ASTM C 131) Grading B (3/4"-3/8") Flat or Elongated Particles (ASTM D 4791) 3:1 Ratio	20.7% 12.8%		4.0% Max.
Bulk Density ("Unit Weight") and Voids in Aggregate (ASTM C 29) Bulk Density Loose Over-Dry Bulk Density Loose Over-Dry Void Content Rotted Over-Dry Bulk Density Rotted Over-Dry Void Content	86.6 lbs./ft. <sup>3</sup> 47.3% 84.4 lbs./ft. <sup>3</sup> 42.5%		28% Max.

## REMARKS:

The material for the above samples was submitted by L.G. Everest, Inc.

SIGNED




# MIDWEST TESTING LABORATORY

4102 - 7th Ave. N. / P.O. Box 3042 / Fargo, North Dakota 58108  
Phone (701) 282-9633 / Fax (701) 282-9635

## REPORT OF: TESTS OF COARSE AGGREGATE

PROJECT:

Plant Tests 2011, West Quarry  
Dell Rapids, South Dakota

REPORTED TO:

Attn: Jeff Damer  
L.G. Everist, Inc.  
PO Box 5829  
Sioux Falls, SD 57117-5829

PROJECT NO: M1111001

SAMPLE SOURCE:

West Quarry, Dell Rapids, South Dakota, Minnehaha County  
Northwest 1/4, Section 16, Township 104 North, Range 49 West  
3/8" - #8 Quarry Aggregate

SAMPLE DESCRIPTION:

DATE SUBMITTED:

January 5, 2011

TEST RESULTS:

Lightweight Particles (AASHTO T 113)  
Using 2.0 Sp. Gr. Zinc Chloride Solution

0.0%

Bulk Density ("Unit Weight") and Voids in Aggregate (ASTM C 29)

82.4 lbs./ft.<sup>3</sup>

49.7%

91.7 lbs./ft.<sup>3</sup>

44.1%

Relative Density, (Specific Gravity) & Absorption of Coarse Aggregate (ASTM C 127)

2.627

2.837

2.653

0.37%

Bulk Density (Unit Weight) and Voids in Aggregate (ASTM C 29)  
Loose Over-Dry Bulk Density  
Loose Over-Dry Void Content  
Rodded Over-Dry Bulk Density  
Rodded Over-Dry Void Content

Relative Density, (Specific Gravity) & Absorption of Coarse Aggregate (ASTM C 127)  
Bulk Over-Dry Relative Density  
Saturated-Surface Dry Relative Density  
Apparent Relative Density  
Absorption

REMARKS: The above samples were prepared and submitted by L.G. Everist, Inc.

SIGNED





Producers of Architectural and Landscape Aggregates

Seven horizontal lines for writing a message.

MESSAGE

NO. OF PAGES INCLUDING COVER SHEET 5

FROM JOHN METER

TO JOHN STADIG

DATE 8/5

FAX COVER SHEET

101 S. WEBER AVE.  
STRAITFORD, WI 54484  
PHONE: 800/862-7415  
FAX: 715/807-2395

KAFKA  
GRANITE, LLC



Aug. 5. 2011 3:34PM

Reissued  
January 16, 1997  
TEC 197102

The major alkali feldspar is moderate red perthite, which controls the color of the granite and is estimated to constitute 57 percent of the volumetric proportions of the rock. It occurs as subhedral prisms and tablets in sizes up to  $\frac{1}{32}$  inch. The perthite consists of intergrown microcline and albite. The microcline has characteristic tartan plaid twinning, and the albite has characteristic albite twinning. The feldspar is slightly kaolinized as evidenced by kaolinite along edges of some of the feldspar crystals.

Plagioclase feldspars (albite/oligoclase) occurs as lath shaped units and is estimated to constitute 8 percent of the rock.

Quartz is clear and has a volumetric concentration estimated to be 30 percent of the rock. It occurs as anhedral particles up to  $\frac{3}{16}$  inch in size.

Most quartz particles have undulatory extinction because of slight strain. Biotite is dark green and is estimated to constitute 5 percent of the rock.

It appears as booklets in interstices between the major minerals. Some of the biotite has been partially or completely replaced by chlorite. Mineralogical and textural characteristics of the granite are indicative of minor deuterial alteration. However, the granite is hard, sound, and has not been affected by weathering.

Particles retained on the No. 30 sieve are essentially granite rock particles; particles smaller than the No. 50 sieve are single minerals of quartz, feldspar, and biotite resulting from breakdown of the granite.

A summary of the characteristics of the aggregate is given in Table 2.

**Starlite Black** - The aggregate is crushed, dark gray gabbro that consists primarily of plagioclase feldspars, augite, and hornblende, minor amounts of biotite, and trace amount of quartz, chlorite, sericite, uranite, and mag-



netite. The rock has a granular texture that consists of interlocking intermediate sized plagioclase feldspars and pyroxene.

An estimated 65 percent of the rock consists of the plagioclase feldspars labradorite and bytownite. The feldspars are euhedral to subhedral, have tabular shapes, and particle sizes up to  $1/2 \times 1/8$  inch. The feldspars have perfect cleavage surfaces, which reflect light when particles are rotated. Many particles are partially altered to sericite.

The augite and hornblende are dark gray and the color-controlling components of the rock. They are estimated to constitute 30 percent of the volume of the rock. These mafic minerals have subhedral configurations, and particles are up to  $1/8$  inch in size. The augite and hornblende are interlocked with the larger plagioclase crystals, which gives the rock a subophitic texture. Some of the augite has been altered along edges by secondary minerals, which include chlorite, uranite and magnetite.

There is also present dark brown biotite that constitutes about 5 percent of the rock, and trace amounts of clear quartz.

The presence of chlorite, sericite, and uranite indicate that there has been some deuterial alteration of the rock. However, particles are hard and sound, and there is no evidence of weathering.

Particles composed of single minerals, derived from crushing of the rock, dominate particles retained on the Nos. 30 and 50 sieves. As a consequence, these particles are primarily plagioclase, quartz, and mafic minerals. The quartz content increases in the minus No. 100 sieve material.

A summary of the petrographic data for the aggregate is given in Table 2.

Reissued  
 January 16, 1997  
 TBC 197102

Reissued  
January 16, 1997  
TEC 197102

Aug. 5, 2011 3:34PM  
THE ERLIN COMPANY - MATERIALS AND CONSTRUCTION CONSULTANTS

Table 3 - Water-soluble chloride contents  
for the aggregates.

Aggregate	Water-Soluble Chloride % by Weight of Aggregate
Starlite Black	0.005
Starlite Orange	0.004

Reissued  
 January 16, 1997  
 TEC 197102

Table 2 - Summary of petrographic data for the aggregates. The mineralogical composition is based upon estimated volumetric proportions.

Sample	Rib Mount	Starlite Black	Dynamite Orange
Rock Type	granite	gabro	granite
Color	moderate red	dark grey	pale red
Texture	granitic	granular	granitic
Quartz	30	trace	20
Feldspar	57	--	--
Perthite	--	--	--
Microcline	8	65	15
Plagioclase	5	5	10
Biotite	trace	--	--
Biotite/Chlorite <sup>(1)</sup>	--	30	--
Pyroxene/Hornblende	7	--	--
Chlorite/Uralite <sup>(2)</sup>	kaolinite	sericite	magnetite
Trace Minerals	apatite	magnetite	magnetite
	zircon		zircon

(1) Secondary chlorite from the alteration of biotite.  
 (2) Secondary chlorite and uraltite from the alteration of pyroxene.



Producers of Architectural and Landscape Aggregates

SPECIFIC GRAVITY: 2.73  
ABSORPTION: .15 max.

Sieve Size	% Retained	% Passing
3/8"	<1	100
US 4	<1	99
US 8	22	77
US 16	28	49
US 30	19	30
US 50	12	18
US 100	8	10
US 200	5	5
PAN	5	

Material Analyzed: Starlite Black Granite 3/16" to pan  
Date: 8.8.11

## REPORT OF ANALYSIS OF AGGREGATE

101 S. WEBER AVE.  
STRATFORD, WI 54484  
LOCAL: 716/687-2423  
TOLL FREE: 800/852-7415  
FAX: 716/687-2395

