



February 22, 2022

Utelite Corporation  
6375 Three Mile Canyon Road,  
Coalville, UT 84017

Attention: Mr. Jeff Barrick

**Subject: Qualifications Testing of Utelite Structural Coarse Lightweight Aggregate**

**Dear: Mr. Jeff Barrick**

Kleinfelder has performed testing, per your request, to verify the conformance of Utelite Structural Coarse Lightweight Aggregate with ASTM C330-17 "Standard Specification for Lightweight Aggregates for Structural Concrete".

Upon review of the results, the Utelite Structural Coarse Lightweight Aggregates meet C330-17 test requirements for the Calendar Year 2022.

See the following results.

Sincerely,



**Spencer Davis, PE**  
Principal Geotechnical Engineer

849 West Levoy Drive, Suite 200  
Salt Lake City, UT, 84123  
o| (1) 801.261.3336  
d| (1) 801.713.2870  
m| (1) 435.512.0580  
f| (1) 801.261.3306



## REPORT of AGGREGATE PHYSICAL PROPERTIES

**Project:** Utelite Aggregate Qualification Testing  
**Client:** Lafarge Holcim  
**Material Tested:** Coarse Aggregate  
**Source:** Utelite

**Lab No.:** 22-SLC-00035  
**Project No:** 20211829.001A  
**Sampled by:** Utelite  
**Tested by :** D. Aguirre  
**Reviewed by:** K. Lobato

**Report Date:** 2/22/2022  
**Test Date:** 1/10/2022

### Aggregate Physical Properties

SIEVE ANALYSIS		
ASTM C136	AASHTO T27	
Sieve Size	Accum. % Passing	Specifications
19 mm (3/4")	100	100
12.5 mm (1/2")	92	90-100
9.5 mm (3/8")	74	40-80
4.75mm (No. 4)	7	0-20
2.36 mm (No. 8)	0.8	0-10
2.00 mm (No. 10)	0.7	---
1.18mm (No.16)	0.7	---
0.600 mm (No.30)	0.7	---
0.425mm (No. 40)	0.7	---
0.300mm (No. 50)	0.6	---
0.150mm (No.100)	0.6	---
0.075mm (No. 200)	0.5	0-10

TEST RESULTS			
Standard	CHEMICAL and PHYSICAL PROPERTIES	Results	Specification
ASTM C40	Organic Impurities	Color Comparison=	<b>Lighter than Standard</b>
ASTM C641	Staining Index	Stain Index=	<b>20</b> Less than 60
ASTM C114	Loss on Ignition	Loss, %=	<b>0.39</b> Less Than 5 Percent
ASTM C142	Clay Lumps and Friable Particles	Fine Aggregate, %=	<b>0.41</b> Less than 2 Percent
ASTM C29	Bulk Density: Dry Loose Condition	Unit Weight, lbs./cu.ft.=	<b>49</b> 65 PCF Maximum
ASTM C29	Bulk Density: Saturated Loose Condition	Unit Weight, lbs./cu.ft.=	<b>58</b> No Requirement
ACI 211.2-98	Absorption of Lightweight Fine Aggregate	*Absorption, %=	<b>18.6</b> No Requirement
ACI 211.2-98	Relative Density of Fine Aggregate (SSD)	Relative Density, (SSD)=	<b>1.728</b> No Requirement
ASTM C88	Soundness of Aggregtes (Sodium Sulfate)	Soundness Loss, %=	<b>7.8</b> Less than 12 Percent
ASTM C88	Soundness of Aggregates (Magnesium)	Soundness Loss, %=	<b>7.2</b> Less than 18 Percent
ASTM C39	Compressive Strength	Average Strength, psi=	<b>4820</b> 4,000 PSI Minimum
ASTM C496	Splitting Tensile Strength	Average Strength, psi=	<b>420</b> 330 PSI Minimum
ASTM C567	Fresh Concrete Density	Density, lbs./cu.ft.=	<b>119</b> No Requirement
ASTM C567	Oven Dry Density	Density, lbs./cu.ft.=	<b>106.7</b> No Requirement
ASTM C567	Approximate Equilibrium Density	Density, lbs./cu.ft.=	<b>109.7</b> No Requirement
ASTM C157	Drying Shrinkage	Shrinkage, %=	<b>0.05</b> Less than 0.07
ASTM C151	Popouts	Popouts=	<b>No Popouts</b> No Popouts
ASTM C1260	Potential Alkali Reactivity of Aggregates	Reactivity, %=	<b>0.06</b> Less than 0.10

\*Absorption is calculated using a minimum soak time of 72-hours