



February 13, 2020

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

Attention: Mr. Jeff Barrick

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

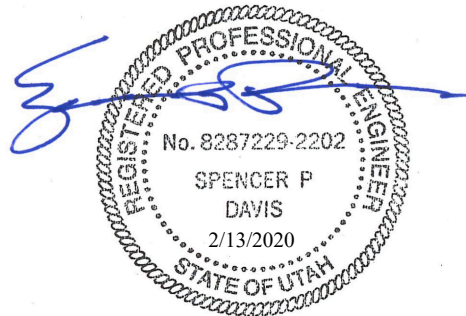
**Dear: Mr. Jeff Barrick**

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 2020.

See the following results.

Sincerely,



**Spencer Davis, PE**  
Principal Geotechnical Engineer

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## Coarse Aggregates

SIEVE ANALYSIS		
ASTM C136	AASHTO T27	
Sieve Size	Accum. % Passing	Specifications
19.0 mm (3/4")	100	100
12.5 mm (1/2")	91	90-100
9.5 mm (3/8")	63	40-80
4.75mm (No. 4)	5	0-20
2.36 mm (No. 8)	1	0-10
2.00 mm (No. 10)	1	---
1.18mm (No.16)	1	---
0.600 mm (No.30)	1	---
0.425mm (No. 40)	1	---
0.300mm (No. 50)	1	---
0.150mm (No.100)	1	---
0.075mm (No. 200)	0.3	0-10

TEST RESULTS				
Standard	CHEMICAL and PHYSICAL PROPERTIES		Results	Specification
ASTM C40	Organic Impurities	Color Comparison=	<b>Lighter than Standard</b>	Lighter than Standard
ASTM C641	Staining Index	Stain Index=	<b>20</b>	Less than 60
ASTM C114	Loss on Ignition	Loss, %=	<b>0.37</b>	Less Than 5 Percent
ASTM C142	Clay Lumps and Friable Particles	Fine Aggregate, %=	<b>0.30</b>	Less than 2 Percent
ASTM C29	Bulk Density: Dry Loose Condition	Unit Weight, lbs./cu.ft=	<b>50.1</b>	55 PCF Maximum
ASTM C29	Bulk Density: Saturated Loose Condition	Unit Weight, lbs./cu.ft=	<b>56.8</b>	No Requirement
ASTM C1761	Absorption of Lightweight Fine Aggregate	*Absorption, %=	<b>13.5</b>	No Requirement
ASTM C127/128	Relative Density of Fine Aggregate (SSD)	Relative Density, (SSD)=	<b>1.780</b>	No Requirement
ASTM C88	Soundness of Aggregtes (Sodium Sulfate)	Soundness Loss, %=	<b>7.3</b>	Less than 12 Percent
ASTM C88	Soundness of Aggregates (Magnesium)	Soundness Loss, %=	<b>1.9</b>	Less than 18 Percent
ASTM C39	Compressive Strength	Average Strength, psi=	<b>5040</b>	4,000 PSI Minimum
ASTM C496	Splitting Tensile Strength	Average Strength, psi=	<b>425</b>	330 PSI Minimum
ASTM C567	Fresh Concrete Density	Density, lbs./cu.ft=	<b>118.9</b>	No Requirement
ASTM C567	Oven Dry Density	Density, lbs./cu.ft=	<b>109.7</b>	No Requirement
ASTM C567	Approximate Equilibrium Density	Density, lbs./cu.ft=	<b>112.7</b>	No Requirement
ASTM C157	Drying Shrinkage	Shrinkage, %=	<b>0.04</b>	Less than 0.07
ASTM C151	Popouts	Popouts=	<b>None</b>	No Popouts
ASTM C1260	Potential Alkali Reactivity of Aggregates	Reactivity, %=	<b>0.05</b>	Less than 0.10

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