



January 30, 2023  
Kleinfelder Project No: 20233587.001A

Holcim Lightweight Aggregates - Utelite Plant  
6375 Three Mile Canyon Road  
Coalville, UT 84017

**ATTENTION: Mr. Jeff Barrick**

**SUBJECT: Qualifications Testing of Utelite Coarse Lightweight Aggregate**

Dear Mr. Barrick:

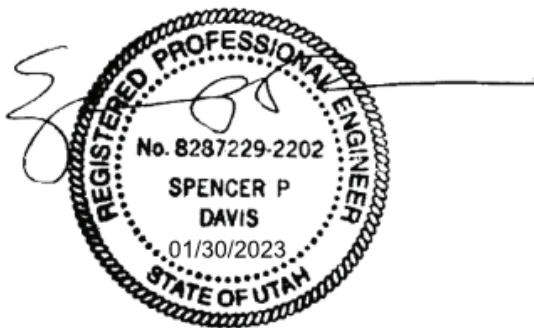
Kleinfelder has performed testing, per your request, to verify the conformance of Utelite Coarse Lightweight Aggregate with ASTM C330-17 "Standard Specification for Lightweight Aggregates for Structural Concrete".

Upon review of the results, the Utelite Coarse Lightweight Aggregates meet C330-17 test requirements for the Calendar Year 2023.

See the following results.

Respectfully Submitted,

**KLEINFELDER**



**Spencer Davis, PE**  
Principal Geotechnical Engineer

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## REPORT of AGGREGATE PHYSICAL PROPERTIES

**Project:** Holcim Lightweight Aggregates - Utelite Plant

**Project No:** 20233587.001A

**Report Date:** 1/27/2023

**Client:** Holcim -SWR, Inc.

**Sampled by:** Utelite Plant

**Material:** Coarse Aggregate

**Tested by :** B. Tripp

**Source:** Utelite Plant

**Reviewed by:** K. Lobato

### 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")	59	40-80
4.75mm (No. 4)	4	0-20
2.36 mm (No. 8)	2	0-10
2.00 mm (No. 10)	2	---
1.18mm (No.16)	2	---
0.600 mm (No.30)	2	---
0.425mm (No. 40)	2	---
0.300mm (No. 50)	1	---
0.150mm (No.100)	1	---
0.075mm (No. 200)	1.1	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>40</b> Less than 60
ASTM C114	Loss on Ignition	Loss, %=	<b>0.16</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>54</b> 65 PCF Maximum
ASTM C29	Bulk Density: Saturated Loose Condition	Unit Weight, lbs./cu.ft=	<b>62</b> No Requirement
ACI 211.2-98	Absorption of Lightweight Fine Aggregate	*Absorption, %=	<b>17.1</b> No Requirement
ACI 211.2-98	Relative Density of Fine Aggregate (SSD)	Relative Density, (SSD)=	<b>1.791</b> No Requirement
ASTM C88	Soundness of Aggregates (Reagent Grade Sodium Sulfate)	Soundness Loss, %=	<b>7</b> Less than 12 Percent
ASTM C88	Soundness of Aggregates (Reagent Grade Magnesium)	Soundness Loss, %=	<b>7</b> Less than 18 Percent
ASTM C39	Compressive Strength	Average Strength, psi=	<b>5310</b> 4,000 PSI Minimum
ASTM C496	Splitting Tensile Strength	Average Strength, psi=	<b>440</b> 330 PSI Minimum
ASTM C567	Fresh Concrete Density	Density, lbs./cu.ft=	<b>120</b> No Requirement
ASTM C567	Oven Dry Density	Density, lbs./cu.ft=	<b>106.1</b> No Requirement
ASTM C567	Approximate Equilibrium Density	Density, lbs./cu.ft=	<b>109.0</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>0.07</b> Less than 0.10

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