



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 Mediums Lightweight Aggregate

Dear Mr. Barrick:

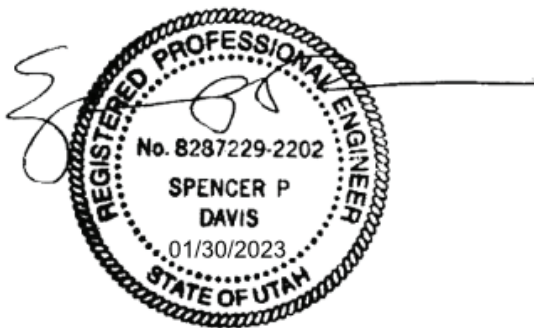
Kleinfelder has performed testing, per your request, to verify the conformance of Utelite Mediums Lightweight Aggregate with ASTM C330-17 "Standard Specification for Lightweight Aggregates for Structural Concrete".

Upon review of the results, the Utelite Mediums 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: Medium 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
12.5 mm (1/2")	100	100
9.5 mm (3/8")	96	80-100
4.75mm (No. 4)	19	5-40
2.36 mm (No. 8)	4	0-20
2.00 mm (No. 10)	3	---
1.18mm (No.16)	2	0-10
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)	0.7	0-10

TEST RESULTS			
Standard	CHEMICAL and PHYSICAL PROPERTIES	Results	Specification
ASTM C40	Organic Impurities	Color Comparison= Lighter than Standard	Lighter than Standard
ASTM C641	Staining Index	Stain Index= 20	Less than 60
ASTM C114	Loss on Ignition	Loss, %= 0.11	Less Than 5 Percent
ASTM C142	Clay Lumps and Friable Particles	Fine Aggregate, %= 0.19	Less than 2 Percent
ASTM C29	Bulk Density: Dry Loose Condition	Unit Weight, lbs./cu.ft.= 55	65 PCF Maximum
ASTM C29	Bulk Density: Saturated Loose Condition	Unit Weight, lbs./cu.ft.= 62	No Requirement
ACI 211.2-98	Absorption of Lightweight Fine Aggregate	*Absorption, %= 18.1	No Requirement
ACI 211.2-98	Relative Density of Fine Aggregate (SSD)	Relative Density, (SSD)= 1.692	No Requirement
ASTM C88	Soundness of Aggregates (Reagent Grade Sodium Sulfate)	Soundness Loss, %= 6	Less than 12 Percent
ASTM C88	Soundness of Aggregates (Reagent Grade Magnesium)	Soundness Loss, %= 6	Less than 18 Percent
ASTM C39	Compressive Strength	Average Strength, psi= 5230	4,000 PSI Minimum
ASTM C496	Splitting Tensile Strength	Average Strength, psi= 470	330 PSI Minimum
ASTM C567	Fresh Concrete Density	Density, lbs./cu.ft.= 118.2	No Requirement
ASTM C567	Oven Dry Density	Density, lbs./cu.ft.= 105.9	No Requirement
ASTM C567	Approximate Equilibrium Density	Density, lbs./cu.ft.= 109.0	No Requirement
ASTM C157	Drying Shrinkage	Shrinkage, %= 0.06	Less than 0.07
ASTM C151	Popouts	Popouts= No Popouts	No Popouts
ASTM C1260	Potential Alkali Reactivity of Aggregates	Reactivity, %= 0.08	Less than 0.10

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