

Client: **Holcim Lightweight Aggregates I Utelite Plant**
 Project: **ASTM C88 Testing**
 Contact: **Ken Nunley**
 Date Reported: **March 15, 2024**

CTLGroup Project No: **201412**
 CTLGroup Project Manager: **P. Vaddey**
 Technician: **T. Hercules**
 Approved: **J. Rose**

ASTM C88 — Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate

Client Sample ID	Coarse Aggregate
CTLGroup Sample ID	5725901
Sample Source	Holcim Lightweight Aggregates I Utelite Plant
Aggregate Type	Coarse Aggregate
Test Solution	Magnesium Sulfate

Size	Grading of Original Sample, %	Weight of Test Fractions Before Test, g	Passing Designated Sieve After Test, g	Percentage Passing Designated Sieve After Test ^{Note 5}	Weightened Loss, %
1½" - ¾"	0.0	--	--	--	--
		--	--	--	
¾" - ⅜"	26.7	668	660	0.0	0.0
		329	315	0.0	
⅜" - No. 4	60.4	303	301	0.7	0.5
No. 4 - Pan	12.9	--	--	0.7	
Total	100.0				0

Qualitative Examination of Coarse Sizes

	Splitting	Crumbling	Cracking	Flaking	Total Before Test
2½ to 1½ in.	--	--	--	--	--
1½ to ¾	--	--	--	--	--

Notes:

1. This report may not be reproduced except in its entirety.
2. The results refer specifically to the submitted sample.
3. The test sample was received on February, 20, 2024.
4. Testing conducted from February 23, 2024 to March 4, 2024.
5. As required by the method, for sizes containing less than 5% of the sample, values of the next larger or the next smaller size were used.

Client: **Holcim Lightweight Aggregates I Utelite Plant**
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ASTM C88 — Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate

Client Sample ID	Coarse Aggregate
CTLGroup Sample ID	5725901
Sample Source	Holcim Lightweight Aggregates I Utelite Plant
Aggregate Type	Coarse Aggregate
Test Solution	Sodium Sulfate

Size	Grading of Original Sample, %	Weight of Test Fractions Before Test, g	Passing Designated Sieve After Test, g	Percentage Passing Designated Sieve After Test ^{Note 5}	Weightened Loss, %
1½" - ¾"	0.0	--	--	--	--
		--	--	--	
¾" - ⅜"	26.7	665	660	0.0	0.0
		331	320	0.0	
⅜" - No. 4	60.4	305	304	0.5	0.4
No. 4 - Pan	12.9	--	--	0.5	
Total	100.0				0

Qualitative Examination of Coarse Sizes

	Splitting	Crumbling	Cracking	Flaking	Total Before Test
2½ to 1½ in.	--	--	--	--	--
1½ to ¾	--	--	--	--	--

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Client: **Holcim Lightweight Aggregates I Utelite Plant**
 Project: **ASTM C88 Testing**
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 Date Reported: **March 18, 2024**

CTLGroup Project No: **201412**
 CTLGroup Project Manager: **P. Vaddey**
 Technician: **T. Hercules**
 Approved: **J. Rose**

ASTM C88 — Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate

Client Sample ID	Pump Blend Aggregate
CTLGroup Sample ID	5725902
Sample Source	Holcim Lightweight Aggregates I Utelite Plant
Aggregate Type	Combined Coarse and Fine
Test Solution	Magnesium Sulfate

Size	Grading of Original Sample, % retained	Weight of Test Fractions Before Test, g	Passing Designated Sieve After Test, g	Percentage Passing Designated Sieve After Test	Weightened Loss, %
No. 30 - No. 50	9	100	91	9.1	0.8
No. 16 - No 30	14	100	92	8.2	1.2
No. 8 - No. 16	19	100	90	9.7	1.8
No. 4 - No. 8	21	100	97	2.6	0.5
3/8" - No. 4	25	100	98	2.0	0.5
Totals	88				5

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3. The test sample was received on February, 20, 2024.
4. Testing was conducted from March 8, 2024 to March 18, 2024.

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ASTM C88 — Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate

Client Sample ID	Pump Blend Aggregate
CTLGroup Sample ID	5725902
Sample Source	Holcim Lightweight Aggregates I Utelite Plant
Aggregate Type	Combined Coarse and Fine
Test Solution	Sodium Sulfate

Size	Grading of Original Sample, % retained	Weight of Test Fractions Before Test, g	Passing Designated Sieve After Test, g	Percentage Passing Designated Sieve After Test	Weightened Loss, %
No. 30 - No. 50	9	100	93	6.6	0.6
No. 16 - No 30	14	100	93	7.4	1.1
No. 8 - No. 16	19	100	92	7.9	1.5
No. 4 - No. 8	21	100	98	2.0	0.4
3/8" - No. 4	25	100	99	1.0	0.2
Totals	88				4

Notes:

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