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C330 EVALUATION

CLIENT: NORLITE CORPORATION 628 SOUTH SARATOGA STREET COHOES, NY 12047	FILE NO.: S018417 REPORT NO.: 001 DATE: 10/24/18 PAGE NO.: 1 OF 3
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Samples of Norlite aggregate were delivered to this laboratory for material analyses in accordance with Specifications ASTM C330 and C331. The test results are as follows:

AGGREGATE ANALYSIS

Sieve Size	% Passing (Passing Specification)					
	3/4 Norlite	3/8 Norlite	Norlite Block Mix*	3/16 Norlite	4x0 Norlite	8x0 Norlite
1"	100.0 (100)	---	---	---	---	---
3/4"	100.0 (90-100)	---	---	---	---	---
1/2"	58.9	100.0 (100)	100.0	---	---	---
3/8"	18.7 (10-50)	93.1 (80-100)	100.0	100.0	100.0 (100)	100.0 (100)
#4	5.5 (0-15)	27.8 (5-40)	96.2	91.8	97.4 (85-100)	100.0 (85-100)
#8	3.7	8.9 (0-20)	68.6	24.9	66.9	93.0
#16	3.2	4.7 (0-10)	46.0	9.8	41.6 (40-80)	61.9 (40-80)
#30	2.9	3.6	32.2	6.9	25.8	36.6
#50	2.6	3.2	22.4	5.4	17.2 (10-35)	20.8 (10-35)
#100	2.2	2.8	15.0	4.3	12.7 (5-25)	14.0 (5-25)
#200	1.8 (0-10)	2.2 (0-10)	9.5	3.1	9.5	10.4

Fineness Modulus	7.03	5.56	4.11	4.57	3.39	2.74
Loose Unit Weight, Dry (pcf)	43.2 (55 maximum)	44.4 (55 maximum)	56.8 (65 maximum)	47.2 (70 maximum)	58.1 (70 maximum)	56.9 (70 maximum)
Loose Unit Weight, Damp (pcf)	47.1	45.6	58.7	51.9	59.3	56.7
Organic Impurities	---	---	Lighter than standard (Standard)	Lighter than standard (Standard)	Lighter than standard (Standard)	Lighter than standard (Standard)
% Loss, Sodium Sulfate Soundness (5 Cycles)	4.8	4.4	3.4	4.7	3.8	3.1
% Loss on Ignition (Dry Basis)	0.0 (5 maximum)	0.0 (5 maximum)	0.1 (5 maximum)	0.0 (5 maximum)	0.1 (5 maximum)	0.1 (5 maximum)
% Clay Lumps	0.1 (2 maximum)	0.1 (2 maximum)	0.3 (2 maximum)	0.1 (2 maximum)	0.4 (2 maximum)	0.3 (2 maximum)
Staining Index	0.0	0.0	0.0	0.0	0.0	0.0

*Meets the Suggested Total Aggregate Grading as Listed in ASTM C331

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Description	3/4 Norlite and Concrete Sand	3/8 Norlite and Concrete Sand
Concrete Mix Proportions (Mix Design)		
Cement Type 1 (lb)	564	564
American Sand, SSD (lb)	1,523	1,504
3/4 Norlite, Dry (lb)	750	---
3/8 Norlite, Dry (lb)	---	750
BASF Micro Air (oz/cwt)	0.50	0.40
Water (lb / gal)	297 / 35.7	276 / 33.1
Slump (in)	4.00	3.75
Air (%)	6.75	6.00
Oven-Dry Weight, ASTM C567 (pcf)	107.60	108.00
Approximate Equilibrium Weight, ASTM C567 (pcf)	110.60	111.00
Measured Equilibrium Weight, ASTM C567 (pcf)	111.10	112.30
Specification, Maximum, 28 Days (pcf)	115.00	115.00

Compressive Strength (psi)		
7-Day Test	2,814	3,646
7-Day Test	2,948	3,547
7-Day Test	2,778	3,514
Average of 3 Tests	2,847	3,569
28-Day Test	4,174	4,762
28-Day Test	4,273	4,804
28-Day Test	4,164	4,614
Average of 3 Tests (Specification, Minimum psi)	4,204 (4,000)	4,727 (4,000)
56-Day Test	4,612	5,185
56-Day Test	4,545	5,247
56-Day Test	4,581	5,243
Average of 3 Tests	4,579	5,225

Tensile Splitting Strength, ASTM C496 (psi)		
28-Day Test	316	516
28-Day Test	315	301
28-Day Test	325	514
28-Day Test	476	319
28-Day Test	306	306
28-Day Test	367	466
28-Day Test	313	316
28-Day Test	362	413
Average of 8 Tests (Specification, Minimum psi)	348 (330)	394 (330)

Modulus of Elasticity, ASTM C469		
Average of 2 Cylinders	2,726,000	2,764,000

Shrinkage, ASTM C330 (%)		
35 Days (Specification 0.07 Maximum)	- 0.028	- 0.039

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These test results meet ASTM C330 specifications for lightweight aggregates. If you have any questions, please feel free to contact our office.

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SOLAR TESTING LABORATORIES, INC.



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emm 3/21/19