NELSON TESTING LABORATORIES®

EXPERIENCED | INNOVATIVE | AUTHENTIC

Material Evaluation

for

Alternative Terra Cotta

Concrete Terra Cotta

Alternative Terra Cotta LLC
9836 Franklin
Franklin Park, Illinois 60031

October 14, 2021

717 INDUSTRIAL DRIVE | ELMHURST, ILLINOIS 60126 USA | PHONE: (630) 501-0230
WWW.NELSONTESTING.COM

NELSON TESTING LABORATORIES®

EXPERIENCED | INNOVATIVE | AUTHENTIC

October 14, 2021

Alternative Terra Cotta
9836 Franklin
Franklin Park, Illinois 60031

REPORT OF TESTS

SUBJECT:	**Physical Analysis of Terra Cotta Material**
PROJECT:	Alternative Terra Cotta - Concrete Terra Cotta
TEST METHODS:	AIA File No. 9, Part III, "Standard Methods of Sampling and Testing Ceramic Veneer" (Test 6 – Crazing Test)
	ASTM C67, "Test Methods for Sampling and Testing Brick and Structural Clay Tile"
MATERIALS:	(28) specimens delivered to NTL on May 14, 2021
NTL PROJECT #:	21-1169
PAGE:	1 of 7

TEST DATA

Project:	Concrete Terra Cotta
Nominal Size:	2.5 x 3 x 8-in
Test Dates:	May through October 2021

TEST RESULTS

AIA File No 9 (Part III – Section 6) – Crazing Test

Specimens:	Concrete Terra Cotta
Test Dates:	May 2021
Test Description:	Three 4 x 4 x 2.5-in specimens subjected to autoclave exposure at 75 psi per Part III – Section 6. After the exposure, the specimens were examined for any surface changes or failures.

Test Results:

Examination After Exposure

Specimen 1	No crazing or other surface failure
Specimen 2	No crazing or other surface failure
Specimen 3	No crazing or other surface failure
AVERAGE	No crazing or other surface failure

TEST RESULTS

ASTM C67 (8) – Absorption and Saturation Coefficient

Specimens: Concrete Terra Cotta (cut down to length for testing)
Test Dates: July 2021

Test Description: Five specimens were cut down to size for testing.

Test Results:

Absorption After 24-hour Immersion

Specimen 1	1.8%
Specimen 2	2.7%
Specimen 3	2.0%
Specimen 4	2.0%
Specimen 5	2.4%
AVERAGE	2.2%

Absorption After 5-hour Boil

Specimen 1	13.7%
Specimen 2	15.8%
Specimen 3	13.9%
Specimen 4	14.3%
Specimen 5	15.2%
AVERAGE	14.6%

Saturation Coefficient

Specimen 1	0.13
Specimen 2	0.17
Specimen 3	0.15
Specimen 4	0.20
Specimen 5	0.16
AVERAGE	0.16

TEST RESULTS

ASTM C67 (9) – Freeze-Thaw Resistance

Specimens: Concrete Terra Cotta (cut down to length for testing)
Test Dates: May through October 2021

Test Description: Five specimens were cut down to size then tested for freeze-thaw resistance. The specimens were subjected to 100 freeze-thaw cycles.

Test Results:

Weight Loss (Observations) After 50 Cycles

Specimen 1	0.0% (no visible change)
Specimen 2	0.0% (no visible change)
Specimen 3	0.0% (no visible change)
Specimen 4	0.0% (no visible change)
Specimen 5	0.0% (no visible change)
AVERAGE	0.0%

Weight Loss After 100 Cycles

Specimen 1	0.0% (no visible change)
Specimen 2	0.0% (no visible change)
Specimen 3	0.0% (no visible change)
Specimen 4	0.0% (no visible change)
Specimen 5	0.0% (no visible change)
AVERAGE	0.0%

TEST RESULTS

ASTM C67 (22) – Impervious Test

Specimens: Concrete Terra Cotta
Test Date: July 2021

Test Description: Five specimens were evaluated for staining after applying black ink and then cleaning.

Test Results:

Staining Area

Specimen 1	0%
Specimen 2	0%
Specimen 3	0%
Specimen 4	0%
Specimen 5	0%
AVERAGE	0%

PICTURE (As Received)

Respectfully submitted,

NELSON TESTING LABORATORIES

Mark R. Nelson
President

Notes: The results listed within this report relate only to the materials submitted for testing. This report shall not be reproduced, except in full, without written approval of this laboratory. The test materials not consumed in this testing will be discarded 14 days from the date of this report unless we receive written notification requesting otherwise.

NELSON TESTING LABORATORIES®

EXPERIENCED | INNOVATIVE | AUTHENTIC

August 26, 2021

Alternative Terra Cotta
9836 Franklin
Franklin Park, Illinois 60031

REPORT OF TESTS

SUBJECT:	**Physical Analysis of Terracotta Material**
PROJECT:	Alternative Terracotta Material
TEST METHODS:	ASTM C39, "Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens"
	ASTM C143, "Standard Test Method for Slump of Hydraulic-Cement Concrete"
	ASTM C231, "Standard Test Method for Air Content of Freshly Mixed Concrete by the Pressure Method"
MATERIALS:	Delivered to NTL on July 15, 2021
NTL PROJECT #:	21-1226
PAGE:	1 of 4

TEST DATA

Project:	Alternative Terracotta Material
Cast Date:	July 19, 2021

TEST RESULTS

ASTM C39 – Compressive Strength

Material: Alternative Terracotta Material
Cast Date: July 19, 2021

Specimens: Average of three 4 x 8-in cylindrical specimens moist cured until testing.

Test Results:

Compressive Strength @ 1 day

Specimen 1	4,010 psi
Specimen 2	3,740 psi
Specimen 3	3,880 psi
AVERAGE	3,880 psi

Compressive Strength @ 7 days

Specimen 1	5,000 psi
Specimen 2	5,260 psi
Specimen 3	4,920 psi
AVERAGE	5,060 psi

Compressive Strength @ 28 days

Specimen 1	6,460 psi
Specimen 2	6,130 psi
Specimen 3	6,130 psi
AVERAGE	6,240 psi

TEST RESULTS

ASTM C138 – Unit Weight

Material: Alternative Terracotta Material
Cast Date: July 19, 2021

Test Results:

Unit Weight	135.6 lbs/ft^3

ASTM C231 – Air Content

Material: Alternative Terracotta Material
Cast Date: July 19, 2021

Test Results:

Air Content	5.0%

NELSON TESTING LABORATORIES®

EXPERIENCED | INNOVATIVE | AUTHENTIC

Respectfully submitted,

NELSON TESTING LABORATORIES

Mark R. Nelson
President

Notes: The results listed within this report relate only to the materials submitted for testing. This report shall not be reproduced, except in full, without written approval of this laboratory. The test materials not consumed in this testing will be discarded 14 days from the date of this report unless we receive written notification requesting otherwise.