NELSON TESTING LABORATORIES

EXPERIENCED | INNOVATIVE | AUTHENTIC

ANSI A118.15 Evaluation

for

US MIX Co.

AMX 485 Ultimate Bond Stone Veneer Mortar

US MIX Co.
112 South Santa Fe Drive
Denver, CO 80223

December 7, 2019

NELSON TESTING LABORATORIES

EXPERIENCED | INNOVATIVE | AUTHENTIC

December 7, 2019

US MIX Co.
112 South Santa Fe Drive
Denver, Colorado 80223

REPORT OF TESTS

SUBJECT:	**Physical Analysis of Stone Veneer Mortar**
PROJECT:	**US Mix – AMX 485 Ultimate Bond Stone Veneer Mortar**
SPECIFICATION:	A118.15, "American National Standard Specifications for Improved Modified Dry-Set Cement Mortar"
MATERIALS:	Delivered by US Mix to NTL in September 2019
NTL PROJECT #:	19-1320
PAGE:	1 of 9

TEST DATA

Material:	US Mix – AMX 485 Ultimate Bond Stone Veneer Mortar
Water Addition Rate:	1.5 gallons of water per 50 lbs. of material

TEST RESULTS

A118.15 – Section 5.3 – Open Time

Material:	AMX 485 Ultimate Bond Stone Veneer Mortar
Cast Date:	October 2019
Specimens:	Material applied over concrete, left open for 20 minutes, then bonded with four Type B tile specimens. The specimens were then cured 28 days at 73 deg F. until testing.

Test Results: **PASS** (*Specification – 75 psi minimum*)

Specimen A	251 psi
Specimen B	361 psi
Specimen C	445 psi
Specimen D	384 psi
AVERAGE	**360 psi**

A118.15 – Section 6.0 – Sag

Material:	AMX 485 Ultimate Bond Stone Veneer Mortar
Test Date:	October 2019
Specimens:	Material applied over four Type E tile specimens
Test Duration:	20 minutes

Test Results: **PASS** (*Specification – less than 0.02-in*)

Specimen A	0.00-in
Specimen B	0.00-in
Specimen C	0.00-in
Specimen D	0.00-in
AVERAGE	**0.00-in**

TEST RESULTS

A118.15 – Section 7.1 – Shear Strength to Glazed Wall Tile

Material:	AMX 485 Ultimate Bond Stone Veneer Mortar
Cast Date:	October 2019
Specimens:	Material applied over four Type A-1 tile specimens

7.1.2 – Seven-Day Shear Strength

Curing: 7 days at 73 deg F. before testing

Test Results: **PASS** (*Specification – 450 psi minimum*)

Specimen A	499 psi
Specimen B	467 psi
Specimen C	432 psi
Specimen D	431 psi
AVERAGE	**457 psi**

7.1.3 – Seven-Day Water Immersion Shear Strength

Curing: 7 days at 73 deg F. then 7 days immersed in water before testing

Test Results: **PASS** (*Specification – 250 psi minimum*)

Specimen A	237 psi
Specimen B	249 psi
Specimen C	338 psi
Specimen D	291 psi
AVERAGE	**279 psi**

TEST RESULTS

A118.15 – Section 7.1 – Shear Strength to Glazed Wall Tile (continued)

Material:	AMX 485 Ultimate Bond Stone Veneer Mortar
Cast Date:	October 2019
Specimens:	Material applied over four Type A-1 tile specimens

7.1.4 – Twenty-Eight Day Heat Aging Shear Strength

Curing:	14 days at 73 deg F., then 14 days at 158 F. before testing
Test Results:	**PASS** (*Specification – 450 psi minimum*)

Specimen A	699 psi
Specimen B	828 psi
Specimen C	814 psi
Specimen D	701 psi
AVERAGE	**761 psi**

TEST RESULTS

A118.15 – Section 7.2 – Shear Strength to Porcelain Mosaic Tile

Material:	AMX 485 Ultimate Bond Stone Veneer Mortar
Cast Date:	October 2019
Specimens:	Material applied over four Type C tile specimens

7.2.2 – One-Day Shear Strength

Curing: 1 day at 73 deg F. before testing

Test Results: **PASS** (*Specification – 100 psi minimum*)

Specimen A	163 psi
Specimen B	183 psi
Specimen C	147 psi
Specimen D	201 psi
AVERAGE	**174 psi**

7.2.3 – Seven-Day Shear Strength

Curing: 7 days at 73 deg F. before testing

Test Results: **PASS** (*Specification – 300 psi minimum*)

Specimen A	264 psi
Specimen B	358 psi
Specimen C	303 psi
Specimen D	364 psi
AVERAGE	**322 psi**

TEST RESULTS

A118.15 – Section 7.2 – Shear Strength to Porcelain Mosaic Tile (continued)

Material:	AMX 485 Ultimate Bond Stone Veneer Mortar
Cast Date:	October 2019
Specimens:	Material applied over four Type C tile specimens

7.2.4 – Seven-Day Water Immersion Shear Strength

Curing: 7 days at 73 deg F. then 7 days immersed in water before testing

Test Results: **PASS** (*Specification – 200 psi minimum*)

Specimen A	207 psi
Specimen B	189 psi
Specimen C	210 psi
Specimen D	226 psi
AVERAGE	**208 psi**

7.2.5 – Four-Week Shear Strength

Curing: 28 days at 73 deg F. before testing

Test Results: **PASS** (*Specification – 400 psi minimum*)

Specimen A	324 psi
Specimen B	488 psi
Specimen C	431 psi
Specimen D	458 psi
AVERAGE	**426 psi**

TEST RESULTS

A118.15 – Section 7.2 – Shear Strength to Porcelain Mosaic Tile (continued)

Material:	AMX 485 Ultimate Bond Stone Veneer Mortar
Cast Dates:	October 2019
Specimens:	Material applied over four Type C tile specimens

7.2.6 – Four-Week Freeze-Thaw Shear Strength

Curing: 28 days at 73 deg F. then 20 cycles of freeze-thaw before testing

Test Results: **PASS** (*Specification – 250 psi minimum*)

Specimen A	358 psi
Specimen B	290 psi
Specimen C	322 psi
Specimen D	295 psi
AVERAGE	**316 psi**

7.2.7 – Twenty-Eight Day Heat Aging Shear Strength

Curing: 14 days at 73 deg F., then 14 days at 158 F before testing

Test Results: **PASS** (*Specification – 400 psi minimum*)

Specimen A	407 psi
Specimen B	371 psi
Specimen C	402 psi
Specimen D	447 psi
AVERAGE	**407 psi**

TEST RESULTS

A118.15 – Section 7.3 – Shear Strength to Quarry Tile

Material:	AMX 485 Ultimate Bond Stone Veneer Mortar
Cast Date:	October 2019
Specimens:	Material applied over four Type D tile specimens

7.3.2 – Four-Week Shear Strength

Curing: 28 days at 73 deg F. before testing

Test Results: **PASS** (*Specification – 150 psi minimum*)

Specimen A	441 psi
Specimen B	317 psi
Specimen C	378 psi
Specimen D	282 psi
AVERAGE	**355 psi**

7.3.3 – Four-Week Freeze-Thaw Shear Strength

Curing: 28 days at 73 deg F. then 20 cycles of freeze-thaw before testing

Test Results: **PASS** (*Specification – 100 psi minimum*)

Specimen A	223 psi
Specimen B	302 psi
Specimen C	184 psi
Specimen D	175 psi
AVERAGE	**221 psi**

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.