

NBK

Number of pages in this package:30

CLIENT INFORMATION	
Company Name	GoNano Inc
Address	10915 rue de la topaze Mirabel QC J7N 0T6 CANADA

AUDIT INFORMATION:		
<input checked="" type="checkbox"/> Description of Tests "Standard Test Method For Wind-Resistance Of Steep Slope Roofing Products (Fan-Induced Method)"	Per Standard No. ASTM D3161/D3161M-20	Edition (2020-05-01) (Revised Date)
<input checked="" type="checkbox"/> Tests Conducted by+	See Data Sheets	
	Printed name	Signature
<input type="checkbox"/> UL Staff witnessing testing (WTDP only)		
	Printed name	Signature
Reviewed and accepted by qualified Project Handler	Aileen Dobersztyn	
	Printed Name	Signature

TESTS TO BE CONDUCTED:			
Test No.	Done	Test Name	<input type="checkbox"/> Comments/Parameters <input type="checkbox"/> Tests Conducted by ++
	12	Roofing Wind Test	

Instructions -

+ - When all tests are conducted by one person, printed name and signature can be inserted here instead of including printed name and signature on each page containing data. Must indicate number of pages in the data package.

++ - When test conducted by more than one person, printed name and signature of person conducting the test can be inserted next to the test name instead of including printed name and signature on each page containing data. Must indicate number of pages in the data package.

[X] Unless specified otherwise in the individual Methods, the tests shall be conducted under the following ambient conditions. Confirmation of these conditions shall be recorded at the time the test is conducted.

Ambient Temperature, °F 75 ± 5 Relative Humidity, % N/A Barometric Pressure, mBar N/A

[] No general environmental conditions are specified in the Standard(s) or have been identified that could affect the test results or measurements.

RISK ANALYSIS RELATED TO TESTING PERFORMANCE:

The following types of risks have been identified. Take necessary precautions. This list is not all inclusive.

<input type="checkbox"/> Electric shock	<input type="checkbox"/> Radiation
<input type="checkbox"/> Energy related hazards	<input type="checkbox"/> Chemical hazards
<input type="checkbox"/> Fire	<input type="checkbox"/> Noise
<input type="checkbox"/> Heat related hazards	<input type="checkbox"/> Vibration
<input type="checkbox"/> Mechanical	<input type="checkbox"/> Other (Specify) <u> </u>

TEST LOCATION: (To be completed by Staff Conducting the Testing)					
<input checked="" type="checkbox"/> UL or Affiliate	<input type="checkbox"/> WTDP	<input type="checkbox"/> CTDp	<input type="checkbox"/> TPTDP	<input type="checkbox"/> TCP	<input type="checkbox"/> PPP
	<input type="checkbox"/> WMT	<input type="checkbox"/> TMP	<input type="checkbox"/> SMT		
Company Name: <u>UL LLC</u>					
Address: <u>333 Pfingsten Road, Northbrook, Illinois, 60062</u>					

TEST EQUIPMENT INFORMATION

☒ UL test equipment information is recorded on Meter Use in UL's Laboratory Project Management (LPM) database.

[] UL test equipment information is recorded on Dept. 3019's electronic equipment database tracking system (ShrCal) - See the attached sheet(s) "Department 3019FPD Instrument Calibration Tracking".

TEST EQUIPMENT INFORMATION

Inst. ID No.	Instrument Type	Test Number +, Test Title or Conditioning	Function /Range	Last Cal. Date	Next Cal. Date

+ - If Test Number is used, the Test Number must be identified on the data sheet pages or on the Data Sheet Package cover page.

The following additional information is required when using client's or rented equipment, or when a UL ID Number for an instrument number is not used. The Inst. ID No. below corresponds to the Inst. ID No. above.

Inst. ID No.	Make/Model/Serial Number/Asset No.

TEST SAMPLE IDENTIFICATION:

The table below is provided to provide correlation of sample numbers to specific product related information. Refer to this table when a test identifies a test sample by "Sample No." only.

Sample Card No.	Date Received	<input type="checkbox"/> Test No.	Sample No.	Manufacturer, Product Identification and Ratings

+ - If Test Number is used, the Test Number or Numbers the sample was used in must be identified on the data sheet pages or on the Data Sheet Package cover page.

☐ Sampling Procedure -

☐ This document contains data using color and if printed, should be printed in color to retain legibility and the information represented by the color.

Wind Test Sample Summary

Test code	System	Wind Speed	Test Duration	Pass/ Fail	Sample Description
03012302	1	110	120	Pass	Shingle A - 1 treatment
03012303	1	110	120	Pass	Shingle A - 1 treatment
03022302	1	90	120	Pass	Shingle A - 1 treatment
03062303	2	110	120	Pass	Shingle A - 2 treatments
03072303	2	90	120	Pass	Shingle A - 2 treatments

WIND RESISTANCE TEST OF PREPARED ROOFCOVERING MATERIAL

Project: 4790686520

File: SV32011

Test Code: 03012302

Tested by: BRIAN PATERAS

Engineer: Aileen Dobersztyn

Date: 2023/03/01

TEST METHOD: The test was conducted in accordance with ASTM D3161/D3161M -20 "Tests
Standard Test Method For Wind-Resistance Of Steep Slope Roofing
Products (Fan-Induced Method)"

The test sample was assembled in accordance with paragraph 7.

The ambient room temperature during construction of the sample was maintained between
65 and 95 °F.

The panel conditioning was maintained at the required temperature of 135-140 °F for
16 continuous hours.

The ambient room temperature was maintained between 70 and 80 °F during the test.

Test Number: 1	Standard Test Air Velocity (MPH): 110 ±5		
Client Name: GoNano Inc			
Plant Location: N/A			
Sample Description: Cements and Coatings			
Rack #: 609	Conditioning Start: 2023/02/28	Conditioning End: 2023/03/01	
SYS: 1	Time: 12:30 PM	Time: 5:30 AM	

Detailed Sample Description:

Underlayment: One ply GAF "Shingle-Mate Roof Deck Protection" - mechanically fastened

Prepared Roof Covering: Shingle A with 1 treatment - mechanically fastened according
to manufacturer's installation instructions

Test

Notes:

Test Time	Observations
00:00:48	Half tabs on course 8 and 11 are lifting up
00:20:00	No Change
00:40:00	No Change
01:00:00	No Change
01:25:20	No Change
01:40:00	No Change
01:55:00	No Change

Test Duration 120
(minutes):

Actual Average Test Velocity (MPH): 103

Summary of Results:

The test velocity was not maintained at 110 mph ±5 mph at the orifice during the
test.

For this test panel during the exposure to the 110 mph wind:

The adhesive of a self-sealing shingle did restrain any full shingle tab from
lifting.

There was no evidence of permanent damage (such as creasing, tearing, cracking, or
splitting) during the post-test examination of the shingle assembly.

Pass/Fail: Pass (Class F)

Comments:

None



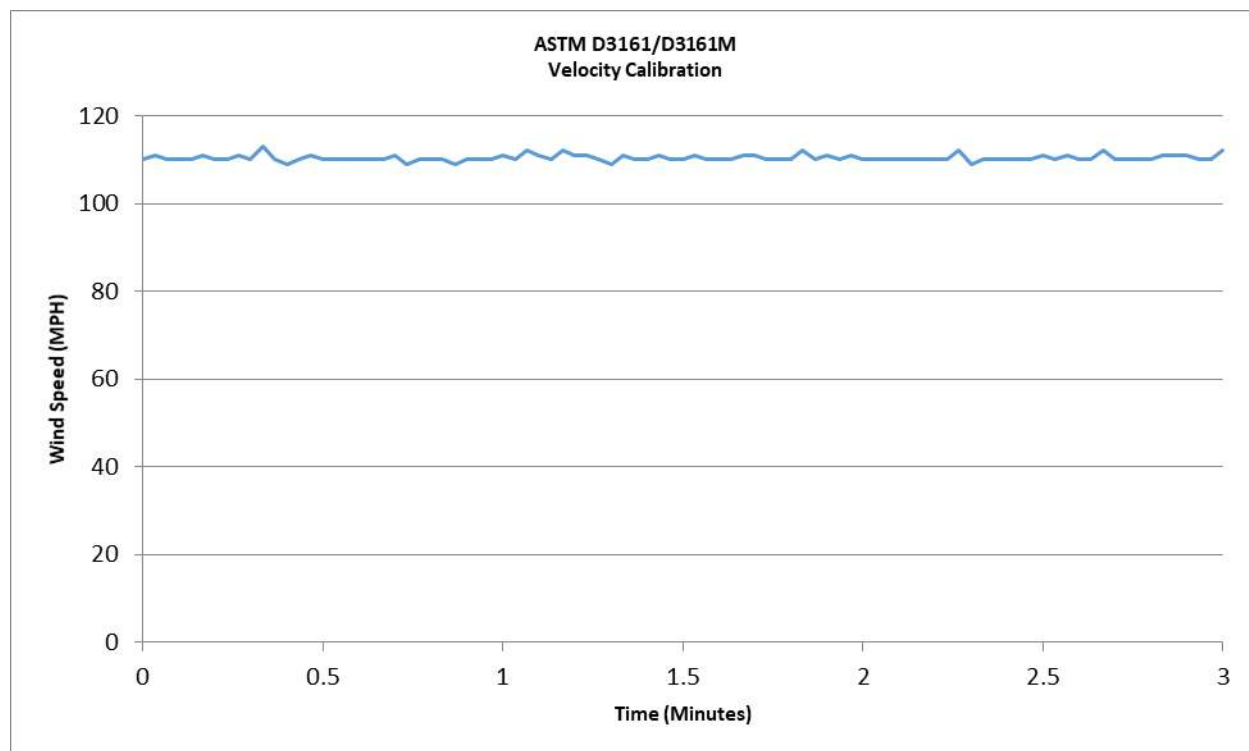
03012302

ASTM D3161/D3161M TEST VELOCITY CALIBRATION

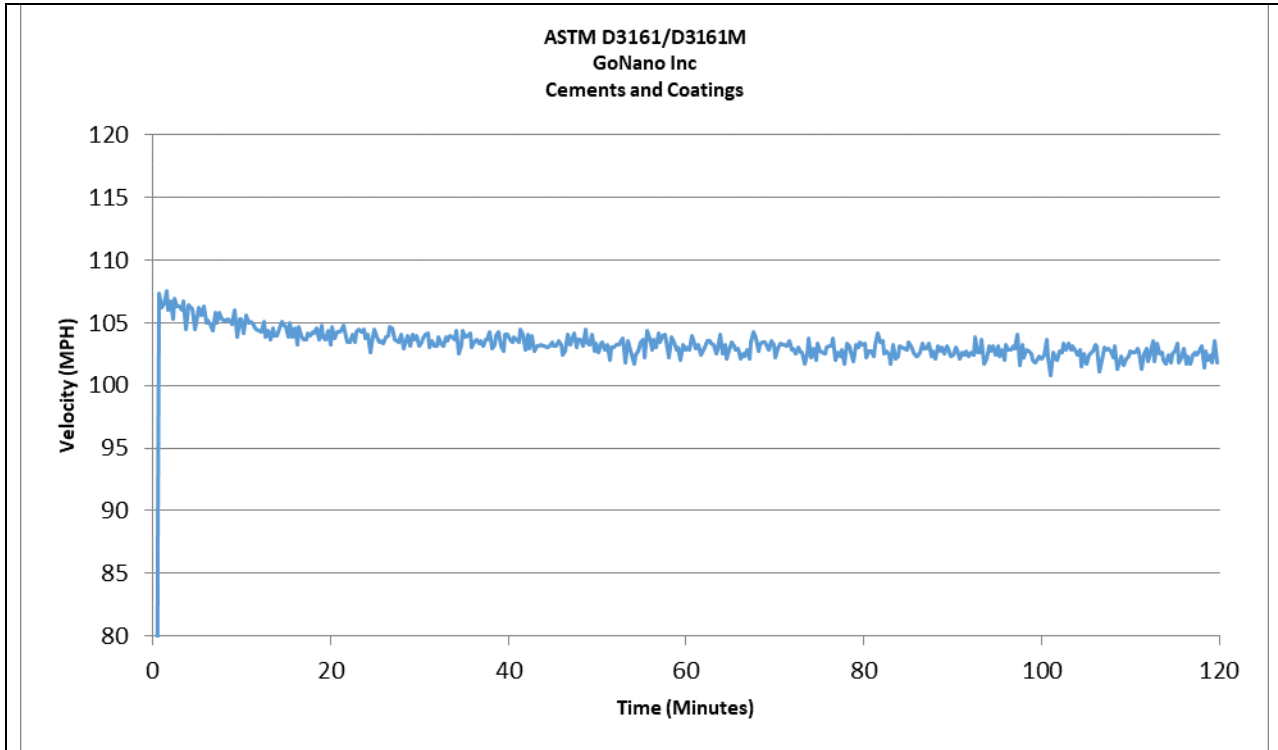
Calibration measurements were made using a bare panel (without shingles) as described in paragraph 7.1 and positioned as described in paragraph 9.1 (ASTM D3161/D3161M).

The velocity was measured using pitot tubes at three evenly spaced locations across the duct orifice.

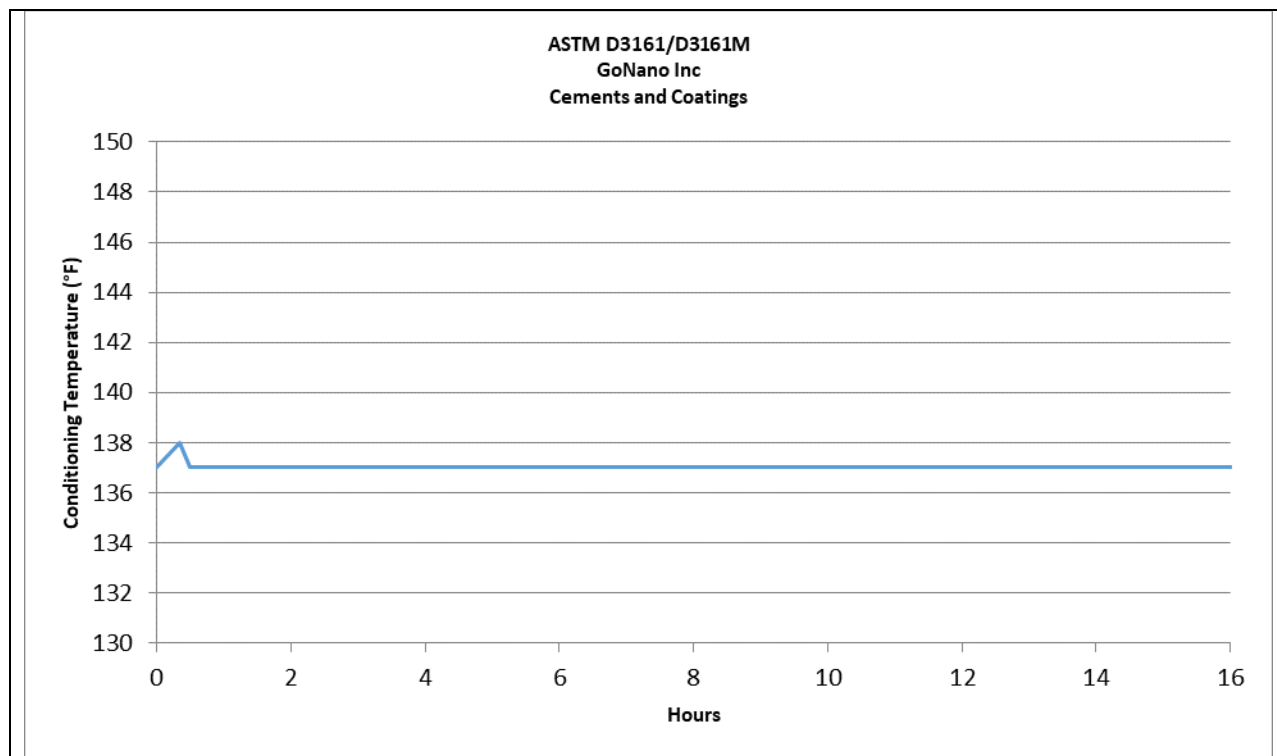
Test Code:	03012301
Date:	2023/03/01
Location:	Wind Room
Conducted By:	BRIAN PATERAS
Target Velocity (MPH)	110
Average Measured Velocity (MPH)	110.3



Test Wind Velocity
4790686520 / SV32011
03012302



Sample Conditioning Temperature
4790686520 / SV32011
03012302



WIND RESISTANCE TEST OF PREPARED ROOFCOVERING MATERIAL

Project: 4790686520 File: SV32011 Test Code: 03012303
Tested by: BRIAN PATERAS Engineer: Aileen Dobersztyn Date: 2023/03/01

TEST METHOD: The test was conducted in accordance with ASTM D3161/D3161M -20 "Tests
Standard Test Method For Wind-Resistance Of Steep Slope Roofing
Products (Fan-Induced Method)"
The test sample was assembled in accordance with paragraph 7.

The ambient room temperature during construction of the sample was maintained between
65 and 95 °F.
The panel conditioning was maintained at the required temperature of 135-140 °F for
16 continuous hours.
The ambient room temperature was maintained between 70 and 80 °F during the test.

Test Number: 2	Standard Test Air Velocity (MPH): 110 ±5		
Client Name: GoNano Inc			
Plant Location: N/A			
Sample Description: Cements and Coatings			
Rack #: 609	Conditioning Start: 2023/02/28	Conditioning End: 2023/03/01	
SYS: 1	Time: 12:30 PM	Time: 5:30 AM	

Detailed Sample Description:

Underlayment: One ply GAF "Shingle-Mate Roof Deck Protection" - mechanically fastened
Prepared Roof Covering: Shingle A with 1 treatment- mechanically fastened according
to manufacturer's installation instructions

Test
Notes:

Test Time	Observations
00:01:02	All tabs still restrained in place by the self-sealing adhesive
00:20:00	No Change
00:40:00	No Change
01:00:00	No Change
01:20:00	No Change
01:40:00	No Change
01:51:09	No Change

Test Duration 120 Actual Average Test Velocity (MPH): 101
(minutes):

Summary of Results:

The test velocity was not maintained at 110 mph ±5 mph at the orifice during the test.
For this test panel during the exposure to the 110 mph wind:
The adhesive of a self-sealing shingle did restrain any full shingle tab from
lifting.

There was no evidence of permanent damage (such as creasing, tearing, cracking, or
splitting) during the post-test examination of the shingle assembly.

Pass/Fail: Pass (Class F)

Comments:

None



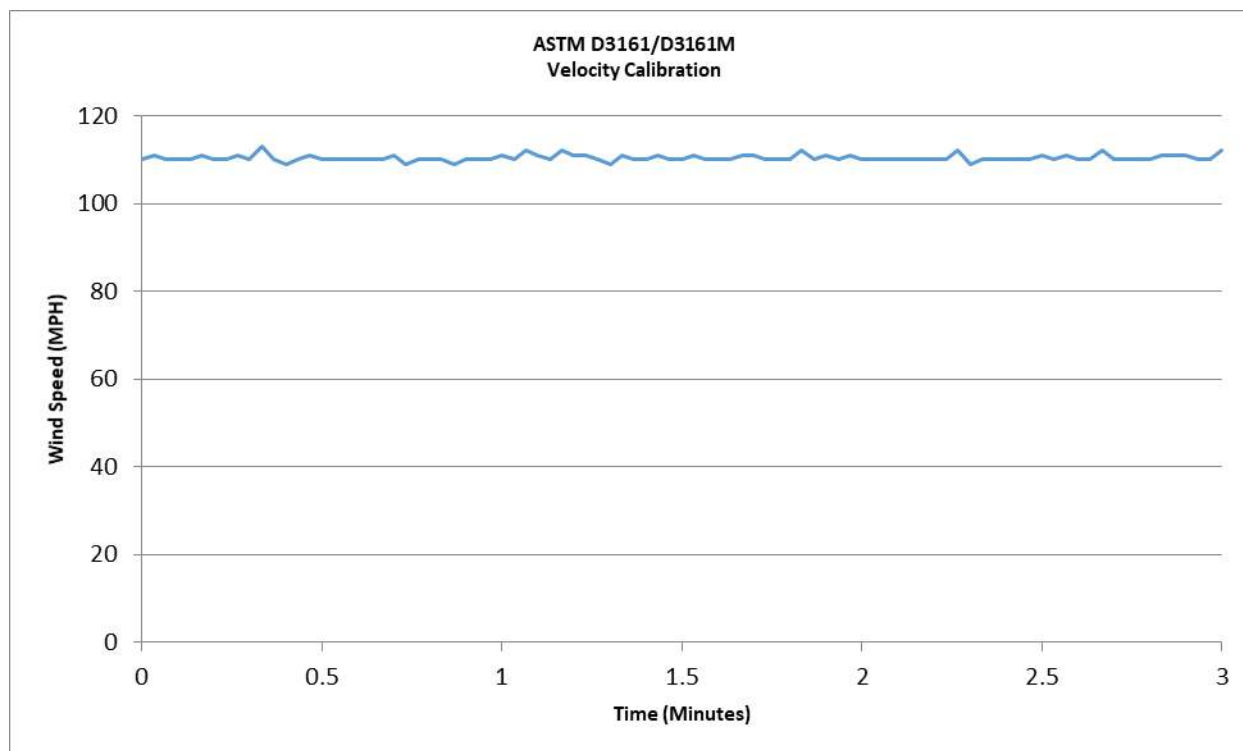
03012303

ASTM D3161/D3161M TEST VELOCITY CALIBRATION

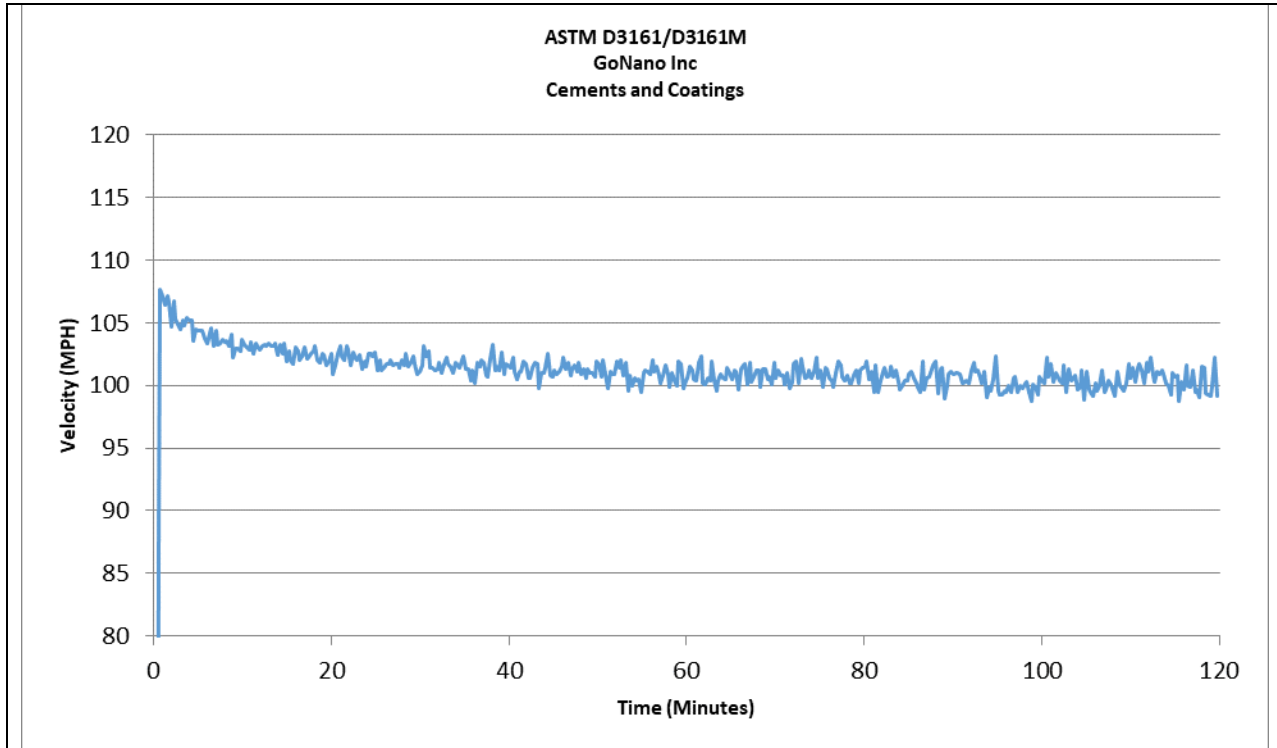
Calibration measurements were made using a bare panel (without shingles) as described in paragraph 7.1 and positioned as described in paragraph 9.1 (ASTM D3161/D3161M).

The velocity was measured using pitot tubes at three evenly spaced locations across the duct orifice.

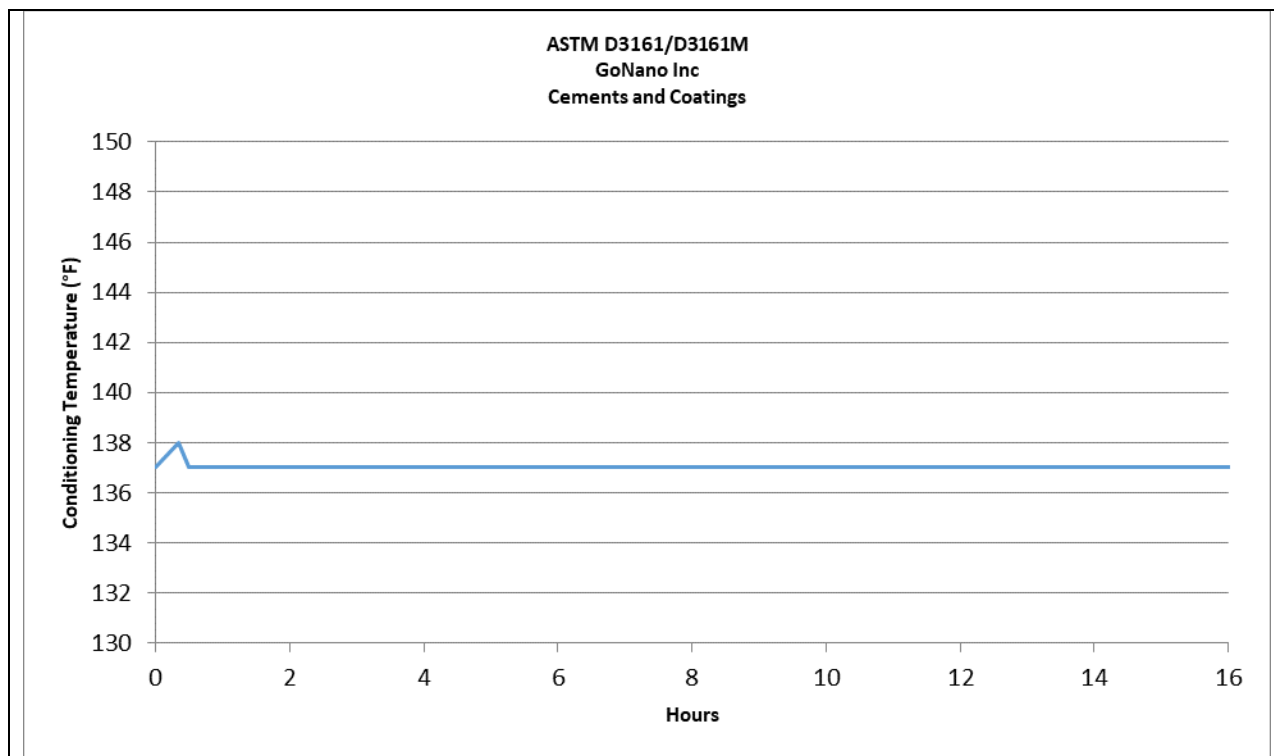
Test Code:	03012301
Date:	2023/03/01
Location:	Wind Room
Conducted By:	BRIAN PATERAS
Target Velocity (MPH)	110
Average Measured Velocity (MPH)	110.3



Test Wind Velocity
4790686520 / SV32011
03012303



Sample Conditioning Temperature
4790686520 / SV32011
03012303



WIND RESISTANCE TEST OF PREPARED ROOFCOVERING MATERIAL

Project: 4790686520

File: SV32011

Test Code: 03022302

Tested by:

Engineer: Aileen Dobersztyn

Date: 2023/03/02

TEST METHOD: The test was conducted in accordance with ASTM D3161/D3161M -20 "Tests Standard Test Method For Wind-Resistance Of Steep Slope Roofing Products (Fan-Induced Method)"

The test sample was assembled in accordance with paragraph 7.

The ambient room temperature during construction of the sample was maintained between 65 and 95 °F.

The panel conditioning was maintained at the required temperature of 135-140 °F for 16 continuous hours.

The ambient room temperature was maintained between 70 and 80 °F during the test.

Test Number: 3	Standard Test Air Velocity (MPH): 90 ±5	
Client Name: GoNano Inc		
Plant Location: N/A		
Sample Description: Cements and Coatings		
Rack #: 609	Conditioning Start: 2023/02/28	Conditioning End: 2023/03/01
SYS: 1	Time: 12:30 PM	Time: 5:30 AM

Detailed Sample Description:

Underlayment: One ply GAF "Shingle-Mate Roof Deck Protection" - mechanically fastened
Prepared Roof Covering: Shingle A with 1 treatment- mechanically fastened according to manufacturer's installation instructions

Test
Notes:

Test Time	Observations
00:00:53	All tabs still restrained in place by the self-sealing adhesive
00:20:00	All tabs still restrained in place by the self-sealing adhesive
00:40:00	All tabs still restrained in place by the self-sealing adhesive
01:00:00	All tabs still restrained in place by the self-sealing adhesive
01:20:00	All tabs still restrained in place by the self-sealing adhesive
01:40:00	All tabs still restrained in place by the self-sealing adhesive
02:00:00	All tabs still restrained in place by the self-sealing adhesive

Test Duration 120 Actual Average Test Velocity (MPH): 87
(minutes):

Summary of Results:

The test velocity was maintained at 90 mph ±5 mph at the orifice during the test.
For this test panel during the exposure to the 90 mph wind:

The adhesive of a self-sealing shingle did restrain any full shingle tab from lifting.

There was no evidence of permanent damage (such as creasing, tearing, cracking, or splitting) during the post-test examination of the shingle assembly.

Pass/Fail: Pass (Class D)

Comments:

None



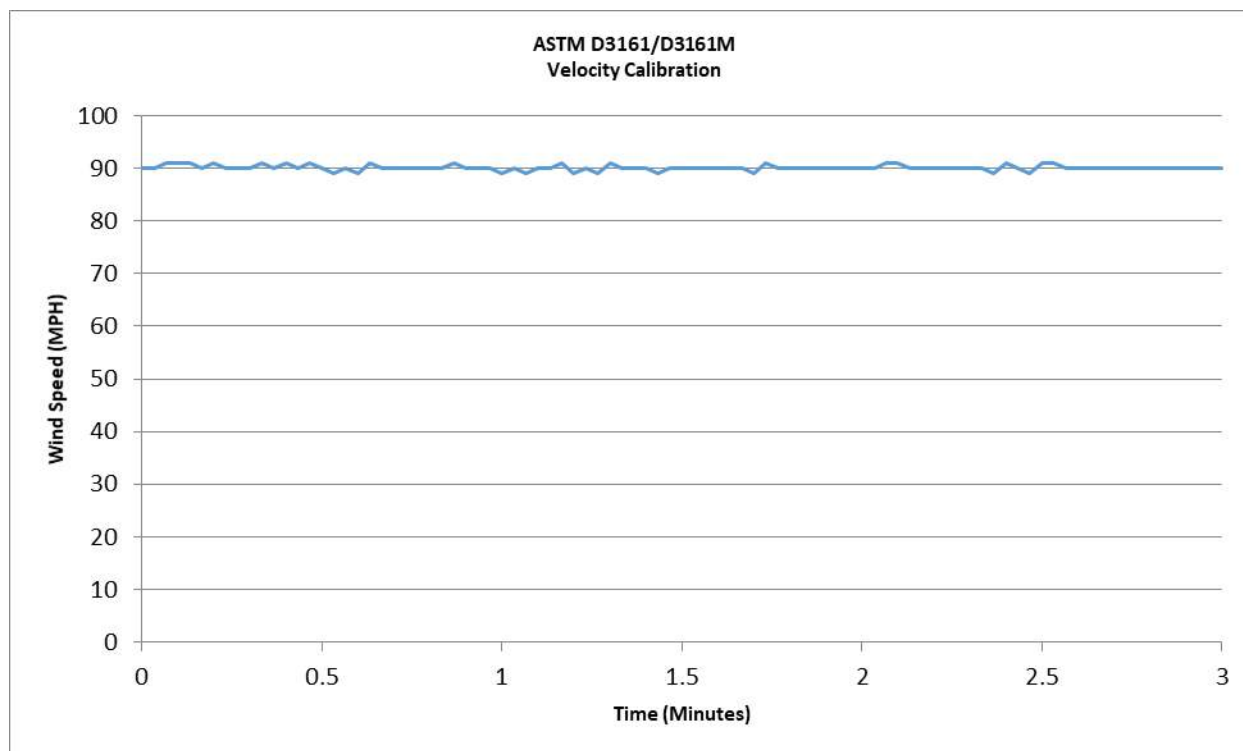
03022302

ASTM D3161/D3161M TEST VELOCITY CALIBRATION

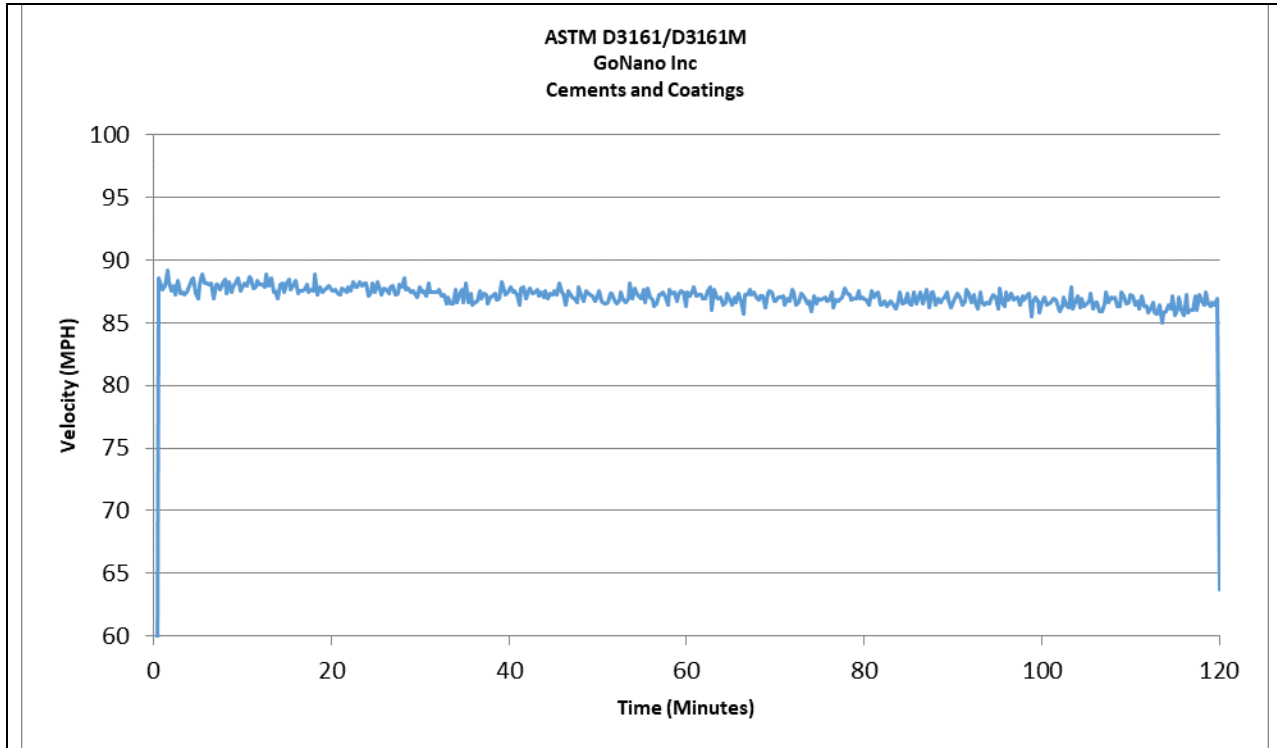
Calibration measurements were made using a bare panel (without shingles) as described in paragraph 7.1 and positioned as described in paragraph 9.1 (ASTM D3161/D3161M).

The velocity was measured using pitot tubes at three evenly spaced locations across the duct orifice.

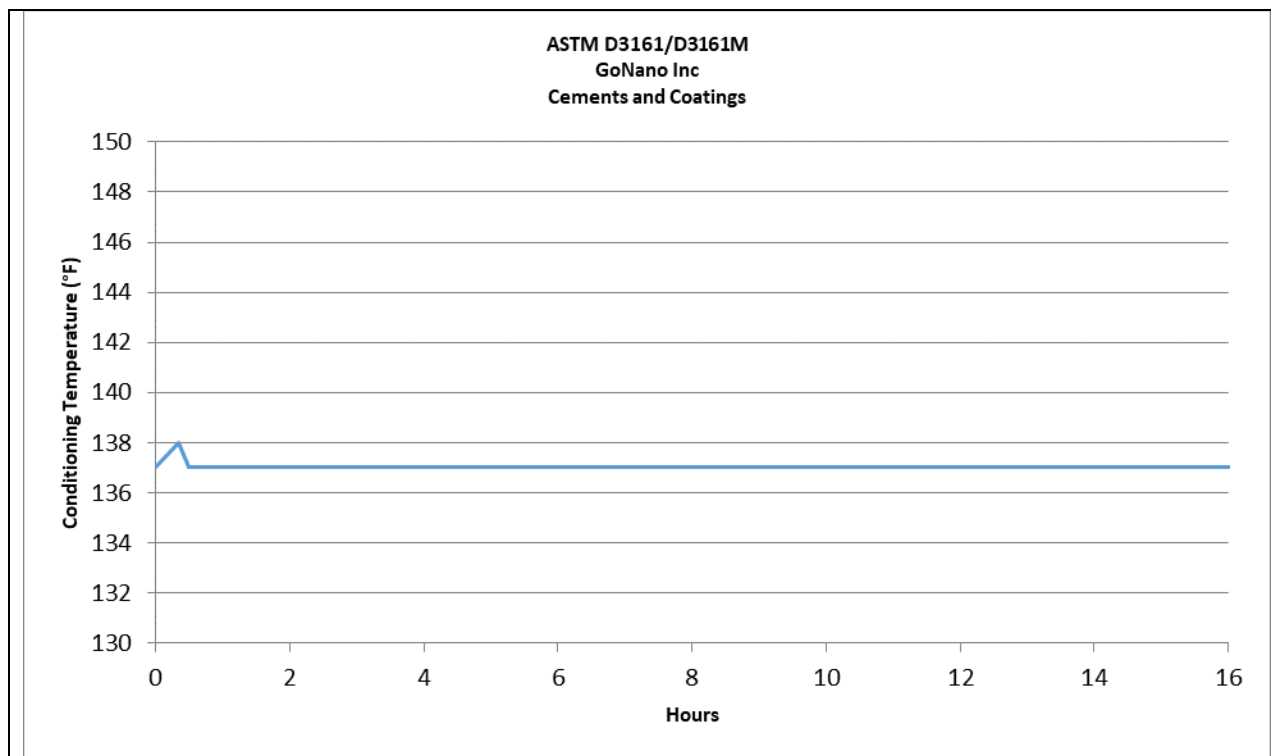
Test Code:	03022301
Date:	2023/03/02
Location:	Wind Room
Conducted By:	
Target Velocity (MPH)	90
Average Measured Velocity (MPH)	90.1



Test Wind Velocity
4790686520 / SV32011
03022302



Sample Conditioning Temperature
4790686520 / SV32011
03022302



WIND RESISTANCE TEST OF PREPARED ROOFCOVERING MATERIAL

Project: 4790686520 File: SV32011 Test Code: 03062303
Tested by: BRIAN PATERAS Engineer: Aileen Dobersztyn Date: 2023/03/06

TEST METHOD: The test was conducted in accordance with ASTM D3161/D3161M -20 "Tests
Standard Test Method For Wind-Resistance Of Steep Slope Roofing
Products (Fan-Induced Method)"
The test sample was assembled in accordance with paragraph 7.

The ambient room temperature during construction of the sample was maintained between
65 and 95 °F.

The panel conditioning was maintained at the required temperature of 135-140 °F for
16 continuous hours.

The ambient room temperature was maintained between 70 and 80 °F during the test.

Test Number: 1	Standard Test Air Velocity (MPH): 110 ±5		
Client Name: GoNano Inc			
Plant Location: N/A			
Sample Description: Prepared Roofing			
Rack #: 608	Conditioning Start: 2023/03/03	Conditioning End: 2023/03/04	
SYS: 2	Time: 5:10 PM	Time: 10:10 AM	

Detailed Sample Description:

Underlayment: One ply GAF "Shingle-Mate Roof Deck Protection" - mechanically fastened
Prepared Roof Covering: Shingle A with 2 treatments- mechanically fastened according
to manufacturer's installation instructions

Test
Notes:

Test Time	Observations
00:00:54	All tabs still restrained in place by the self-sealing adhesive
00:20:00	No change
00:40:00	No change
01:00:00	No change
01:20:00	No change
01:40:00	No change
01:51:35	No change

Test Duration 120 Actual Average Test Velocity (MPH): 107
(minutes):

Summary of Results:

The test velocity was maintained at 110 mph ±5 mph at the orifice during the test.
For this test panel during the exposure to the 110 mph wind:

The adhesive of a self-sealing shingle did restrain any full shingle tab from
lifting.

There was no evidence of permanent damage (such as creasing, tearing, cracking, or
splitting) during the post-test examination of the shingle assembly.

Pass/Fail: Pass (Class F)

Comments:

None



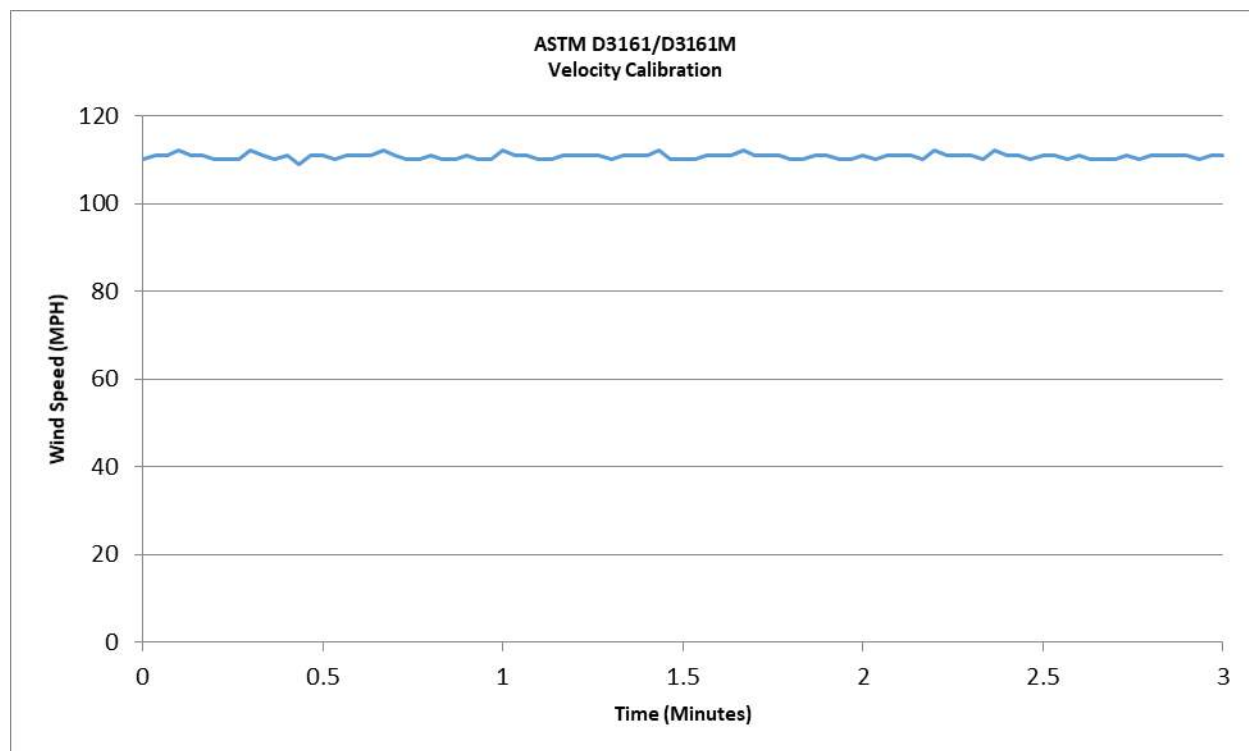
03062303

ASTM D3161/D3161M TEST VELOCITY CALIBRATION

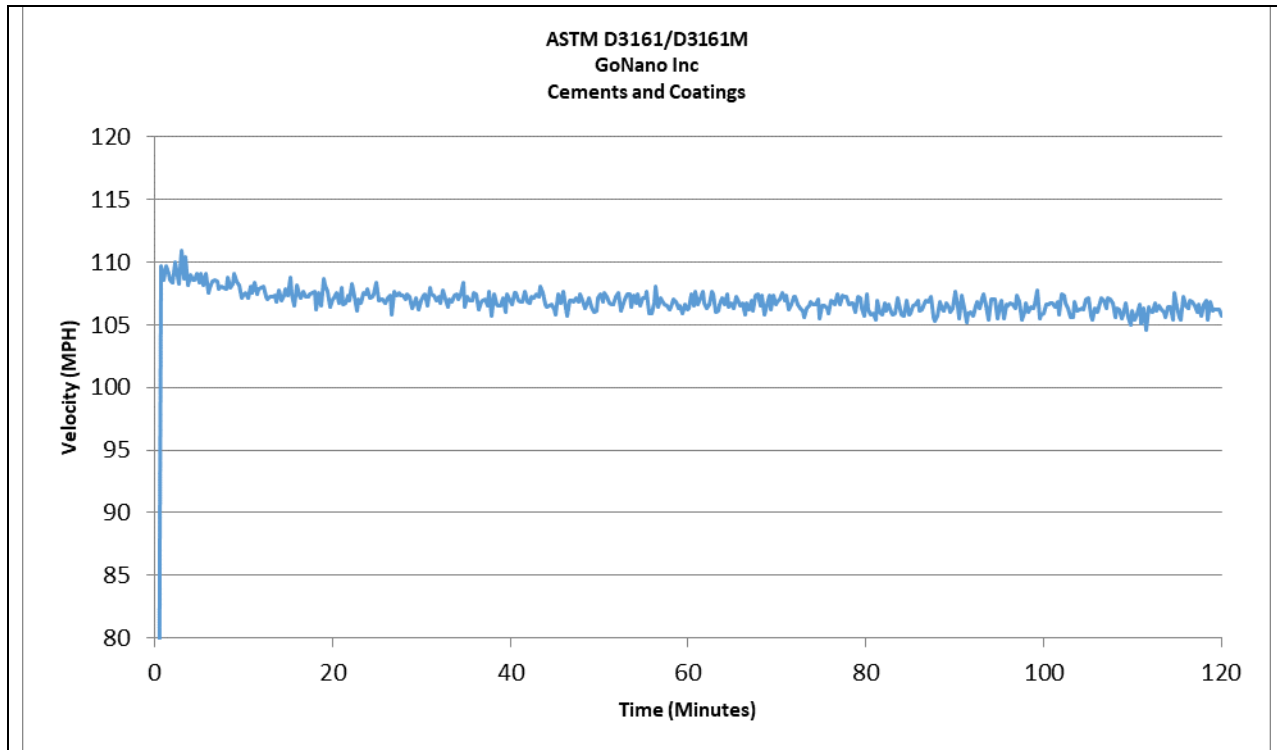
Calibration measurements were made using a bare panel (without shingles) as described in paragraph 7.1 and positioned as described in paragraph 9.1 (ASTM D3161/D3161M).

The velocity was measured using pitot tubes at three evenly spaced locations across the duct orifice.

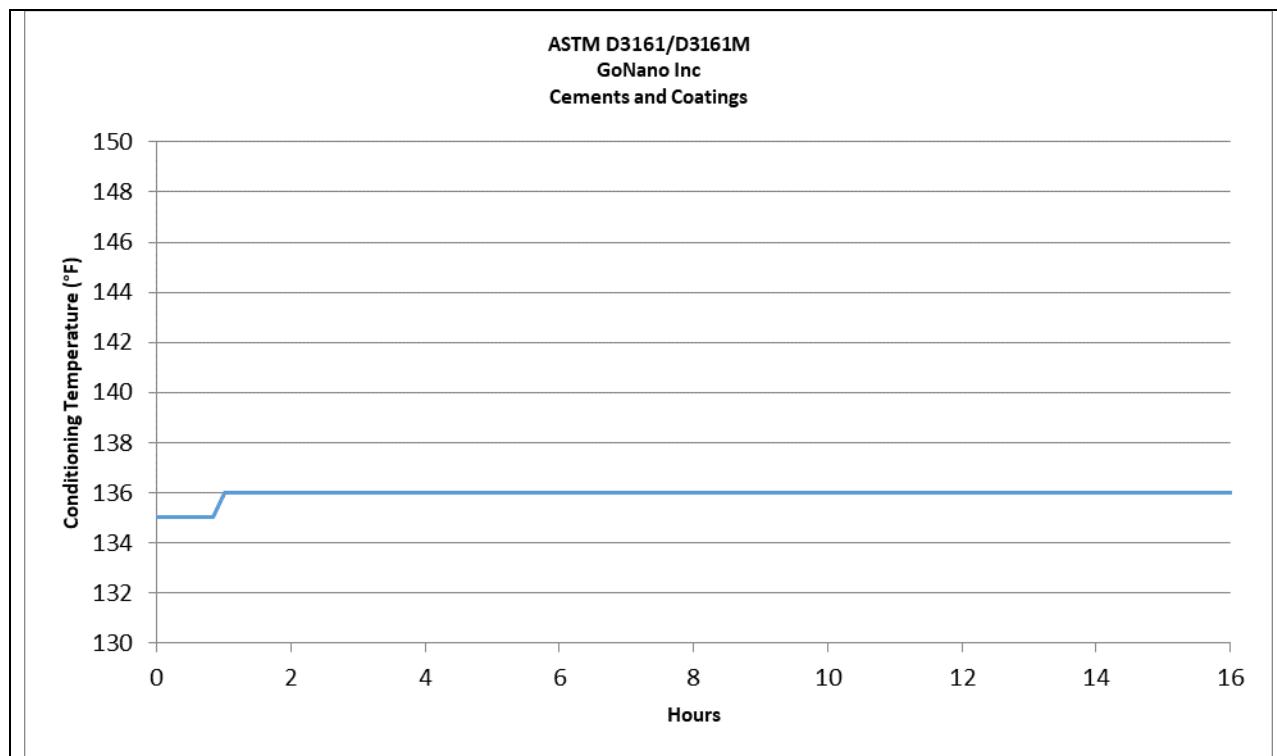
Test Code:	03062301
Date:	2023/03/06
Location:	Wind Room
Conducted By:	Bennett Baker
Target Velocity (MPH)	110
Average Measured Velocity (MPH)	110.7



Test Wind Velocity
4790686520 / SV32011
03062303



Sample Conditioning Temperature
4790686520 / SV32011
03062303



WIND RESISTANCE TEST OF PREPARED ROOFCOVERING MATERIAL

Project: 4790686520 File: SV32011 Test Code: 03072303
Tested by: Bennett Baker Engineer: Aileen Dobersztyn Date: 2023/03/07

TEST METHOD: The test was conducted in accordance with ASTM D3161/D3161M -20 "Tests
Standard Test Method For Wind-Resistance Of Steep Slope Roofing
Products (Fan-Induced Method)"
The test sample was assembled in accordance with paragraph 7.

The ambient room temperature during construction of the sample was maintained between
65 and 95 °F.
The panel conditioning was maintained at the required temperature of 135-140 °F for
16 continuous hours.
The ambient room temperature was maintained between 70 and 80 °F during the test.

Test Number: 2	Standard Test Air Velocity (MPH): 90 ±5	
Client Name: GoNano Inc		
Plant Location: N/A		
Sample Description: Cements and Coatings		
Rack #: 608	Conditioning Start: 2023/03/03	Conditioning End: 2023/03/04
SYS: 2	Time: 5:11 PM	Time: 10:11 AM

Detailed Sample Description:

Underlayment: One ply GAF "Shingle-Mate Roof Deck Protection" - mechanically fastened
Prepared Roof Covering: Shingle A with 2 treatments- mechanically fastened according
to manufacturer's installation instructions

Test
Notes:

Test Time	Observations
00:00:16	All tabs still restrained in place by the self-sealing adhesive
00:20:00	No change
00:40:00	No change
01:00:00	No change
01:20:00	No change
01:40:00	No change
01:53:24	Course 6 corner uplift

Test Duration 120 Actual Average Test Velocity (MPH): 87
(minutes):

Summary of Results:

The test velocity was maintained at 90 mph ±5 mph at the orifice during the test.
For this test panel during the exposure to the 90 mph wind:
The adhesive of a self-sealing shingle did restrain any full shingle tab from
lifting.

There was no evidence of permanent damage (such as creasing, tearing, cracking, or
splitting) during the post-test examination of the shingle assembly.

Pass/Fail: Pass (Class D)

Comments:

None



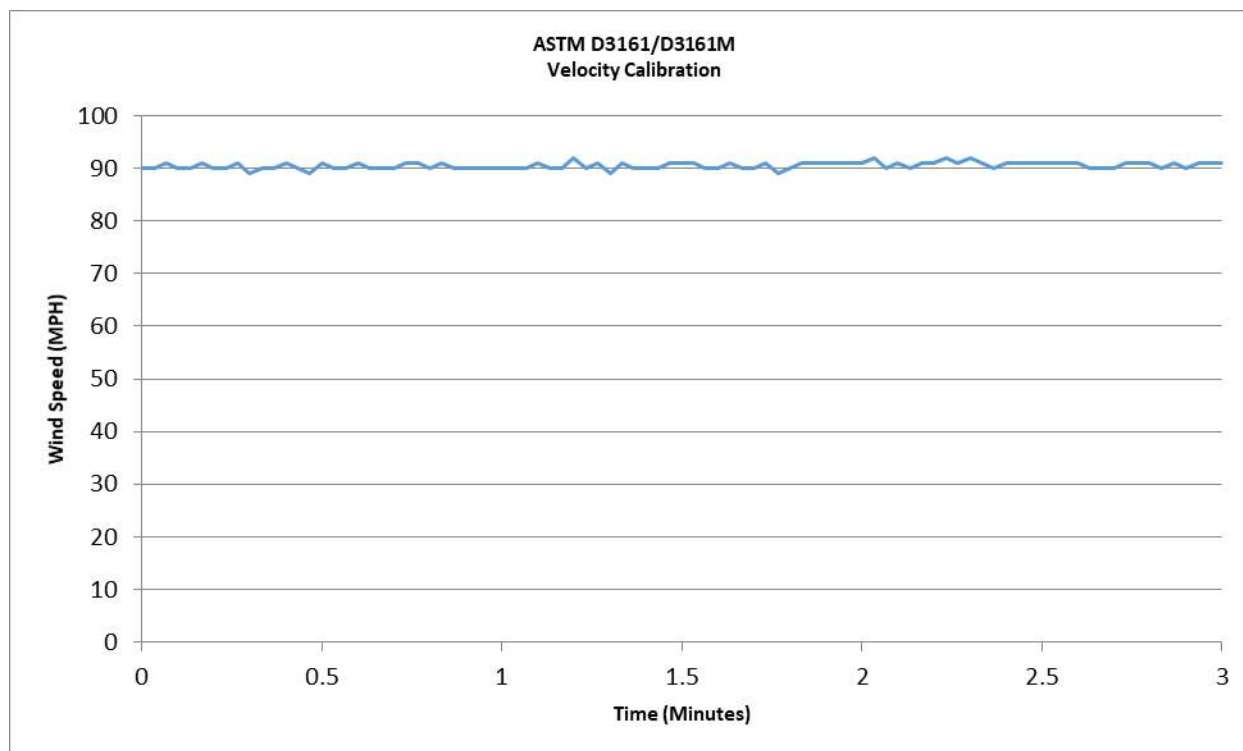
03072303

ASTM D3161/D3161M TEST VELOCITY CALIBRATION

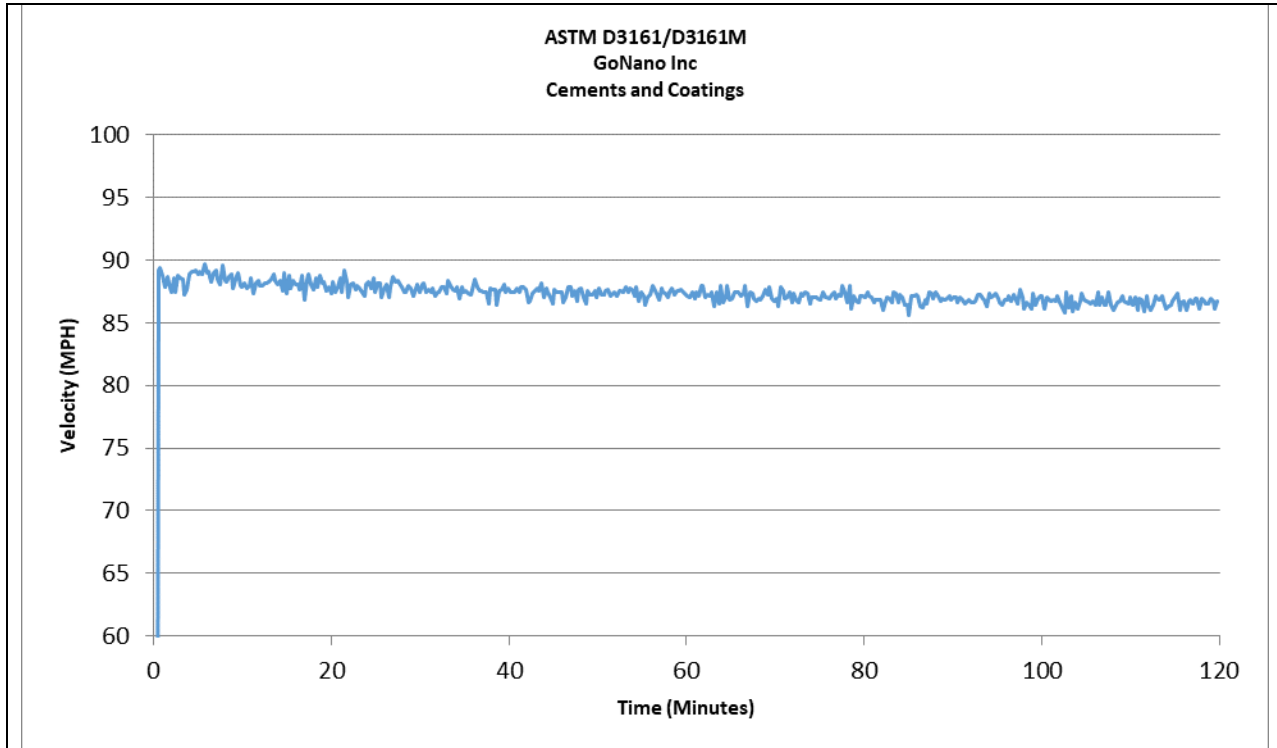
Calibration measurements were made using a bare panel (without shingles) as described in paragraph 7.1 and positioned as described in paragraph 9.1 (ASTM D3161/D3161M).

The velocity was measured using pitot tubes at three evenly spaced locations across the duct orifice.

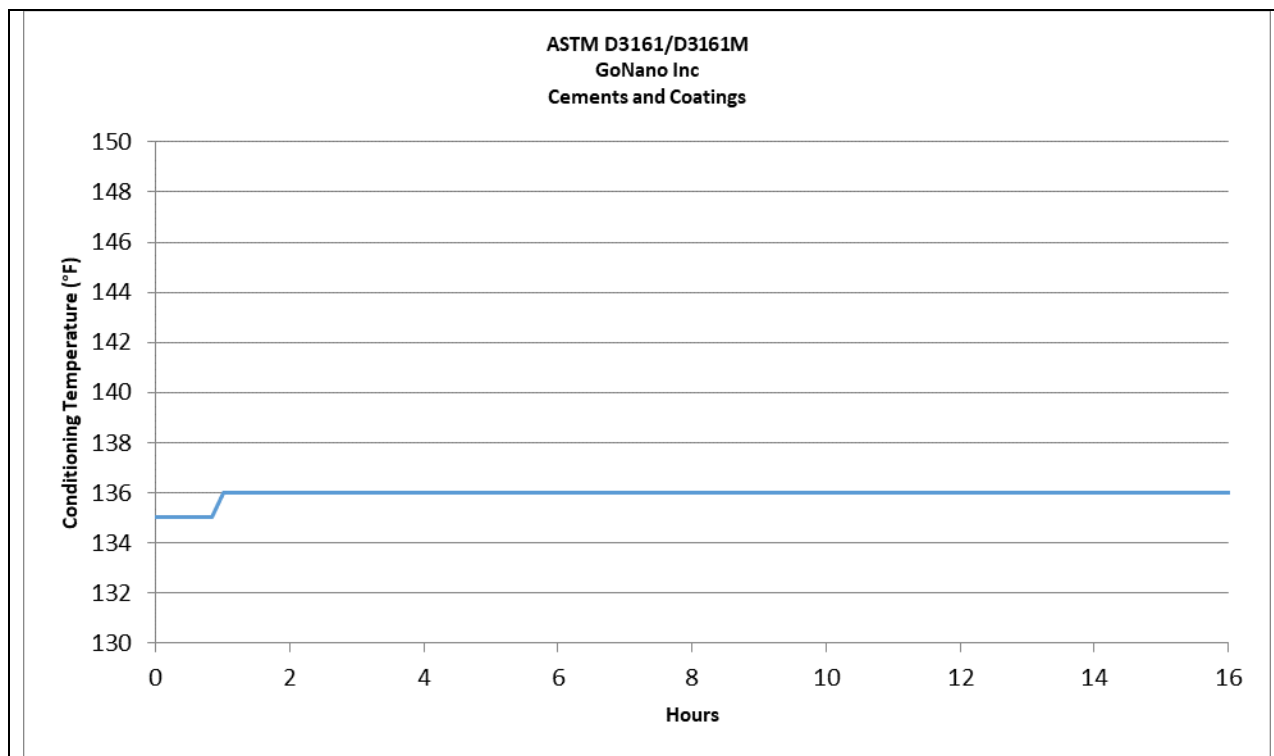
Test Code:	03072301
Date:	2023/03/07
Location:	Wind Room
Conducted By:	Bennett Baker
Target Velocity (MPH)	90
Average Measured Velocity (MPH)	90.5



Test Wind Velocity
4790686520 / SV32011
03072303



Sample Conditioning Temperature
4790686520 / SV32011
03072303



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