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TEST REPORT

Test Method: CAN/ULC-S102.2:2018-REV1, Standard Method of Test for Surface Burning Characteristics of Flooring, Floor Coverings and Miscellaneous Materials and Assemblies

Rendered To: Novawall Systems, Inc
881 South Pickett Street
Alexandria, VA 22302

Product Description: Novawall 1" EcoTRACK Acoustical Panel

Report Number: T-16367

Original Issue Date: 06/18/2020

Test Date: 06/08/2020

Pages: 11

IAS ACCREDITED Testing Laboratory
TL-224

I. SCOPE

This test report contains the results from a specimen tested in accordance with CAN/ULC-S102.2, *Standard Method of Test for Surface Burning Characteristics of Flooring, Floor Coverings, and Miscellaneous Materials and Assemblies*. The results of CAN/ULC-S102.2 testing are commonly used by building code officials and regulatory agencies to determine whether interior finish materials are suitable for their intended application.

II. TEST SPECIMENS

Test specimens should be representative of the material which the test is intended to examine. All test specimens should be approximately 10mm narrower than the interior width of the tunnel and 7315 ± 15 mm in length. The maximum allowable thickness is 65mm. The test specimen can be provided in a continuous, unbroken length or multiple sections that will be butted together. Prior to testing, the specimens are conditioned to a constant mass in an environment that is held at 23 ± 3 °C (73.4 ± 5.4 °F) and 50 ± 5% relative humidity.

TEST SPECIMEN INFORMATION	
Description	Novawall 1" EcoTRACK Acoustical Panel; Nominal Thickness: 1-5/8". * 1" Ecotrack Edge track attached to the perimeter with a Midwall track centered longitudinal on 5/8" FR Drywall panels. The core inserted into the panel is a 6 lb density fiberglass. The fabric is a Guilford of Maine FR 701 fabric and is inserted and tensioned into the EcoTRACK.*
Samples Selected By	Client
Date Received	06/03/2020
Conditioning Time	5 days
Specimen Size (in.)	17-1/2 x 95-3/4
Continuous / Sectioned	Sectioned
Number of Sections	3
Avg. Total Weight (lbs.)	106.13
Average Thickness (in.)	1.711
Color	Grey / Blue
Exposed Surface	Fabric side
Mounting Method	The test specimens were prepared by the client using the components described in the 'Description' section above. The test specimens were laid directly on the tunnel floor.

* Information provided by the Client

III. PROCEDURE

The tunnel is preheated to 85 ± 5 °C (185 ± 9 °F) as measure by a thermocouple embedded in the backwall of the furnace at 7090 mm (23.3 ft) from the centerline of the burner. The tunnel is then cooled to 40 ± 3 °C (104 ± 5.4 °F) as measured by a thermocouple embedded in the backwall of the furnace at 4000 mm (13.1 ft) downstream of the centerline of the burner.

After the tunnel has cooled to required temperature range, the tunnel lid is lifted, and the test specimen is placed on the floor of the tunnel. The specimen is with the side that will be exposed to the flame facing upward.

Once the sample has been loaded into the test chamber, the lid is lowered, and a 1.2 ± 0.025 m/s (236.2 ± 4.9 ft/min) airflow is established. The test specimen is preheated for approximately 2 minutes prior to applying the 90 kW burner. The burner is positioned at the front end of the tunnel. It has two ports that point downward at a 45° angle toward the face of the specimen. An air ramp is placed at the front end of the specimen to reduce air eddies and to prevent low density material from being blown away from the burner.

After the 2-minute preheat, the burner is ignited, and it remains on for the duration of the 10-minute test. The flame is tracked by an observer, referred to as the Reader, as it progresses down the length of the tunnel. Smoke density is measured with the use of the photometer system on the exhaust duct. Temperature data is recorded throughout the test by a thermocouple probe that is 7000 mm (23 ft) from the centerline of the burner and approximately 25mm (1 in.) below the upper ledges of the tunnel.

IV. TEST RESULTS

In CAN/ULC-S102 testing, test results for individual burns are reported as Flame Spread Value (FSV) and Smoke Developed Value (SDV). The average indices, that are derived from a minimum of three individual burns, are reported as Flame Spread Rating (FSR) and Smoke Developed Classification (SDC).

The Flame Spread Value is derived by plotting the flame spread distance versus time. Only progressive flame spread is plotted. The total area (A_T) under the flame spread distance-time plot is determined by ignoring any flame front recession. The calculation of FSV is described below:

When $A_T \leq 29.7$ m•min: $FSV = 1.85 * A_T$

When $A_T > 29.7$ m•min: $FSV = 1640/(59.4 - A_T)$

The Smoke Developed Value is derived by plotting the photoelectric cell readings versus time. The area under the curve for the tested material is then divided by the area under the curve for select-grade red oak flooring. The resulting value is then multiplied by 100.

The Flame Spread Rating is determined by averaging a minimum of three individual Flame Spread Values and rounding that average to the nearest multiple of 5. The Smoke Developed Classification is determined by averaging a minimum of three individual Smoke Developed Values and rounding that average to the nearest multiple of 5.

FLAME SPREAD RATING (FSR)	SMOKE DEVELOPED CLASSIFICATION (SDC)
25	**155**

Test Start Date	06/08/2020
Test End Date	06/16/2020
Equipment Operator	Christopher Kaiser
Flame Spread Reader	Chris Palumbo

	Burn #1	Burn #2	Burn #3
Ignition Time (s)	27	22	25
Flame Spread Value (FSV)	27	25	26
Smoke Developed Value (SDV)	160	149	150
Maximum Temperature (°C)	351	336	341
Maximum Temperature (°F)	663	636	646
Time to Maximum Temperature (min)	9.35	9.91	9.88
Maximum Flame Spread Distance (m)	3.16	2.73	3.03
Maximum Flame Spread Distance (ft)	10.4	9.0	9.9
Time to Maximum FS Distance (min)	10.00	10.00	9.95

V. OBSERVATIONS

During Test

During each burn, the surface burning was not continuous. There was burning at the front (burner) end of the tunnel and there was a section of flaming that slowly progressed down the tunnel. The burning section was roughly 2-4 long.

After Test

Burn 1: Charring of track and core to 4'. Melted face fabric and discoloration of the core to 20'. Discoloration of the fabric to 24'. The material continued to burn after the test concluded.
Burn 2: Charring of track and core to 4'. Melted face fabric and discoloration of the core to 17'. Discoloration of the fabric to 24'. The material continued to burn after the test concluded.
Burn 3: Charring of track and core to 4'. Melted face fabric and discoloration of the core to 18'. Discoloration of the fabric to 24'. The material continued to burn after the test concluded.

Note: Reported observation distances are relative to the entire length of the test specimen.

VI. REMARKS

Following S102 section A1.1.4, sample material was tested in both S102 and S102.2 in order to determine which method has a greater FSI. The S102.2 method resulted in the higher of the two FSI so the material was tested using the S102.2 method (see appendix).

Reported weights and thicknesses include all components of the stretch fabric system.

The specimens for the second and third burn were received on 06/11/2020.

VII. GRAPHS AND INDIVIDUAL BURN DATA

Test Method: ULC S102.2
Project #: T16367
Date: 08 Jun 2020
Time (Test Start): 2:38 PM
Test No.: 1

Specimen ID: Novawall 1' EcoTRACK Acoustical Panel

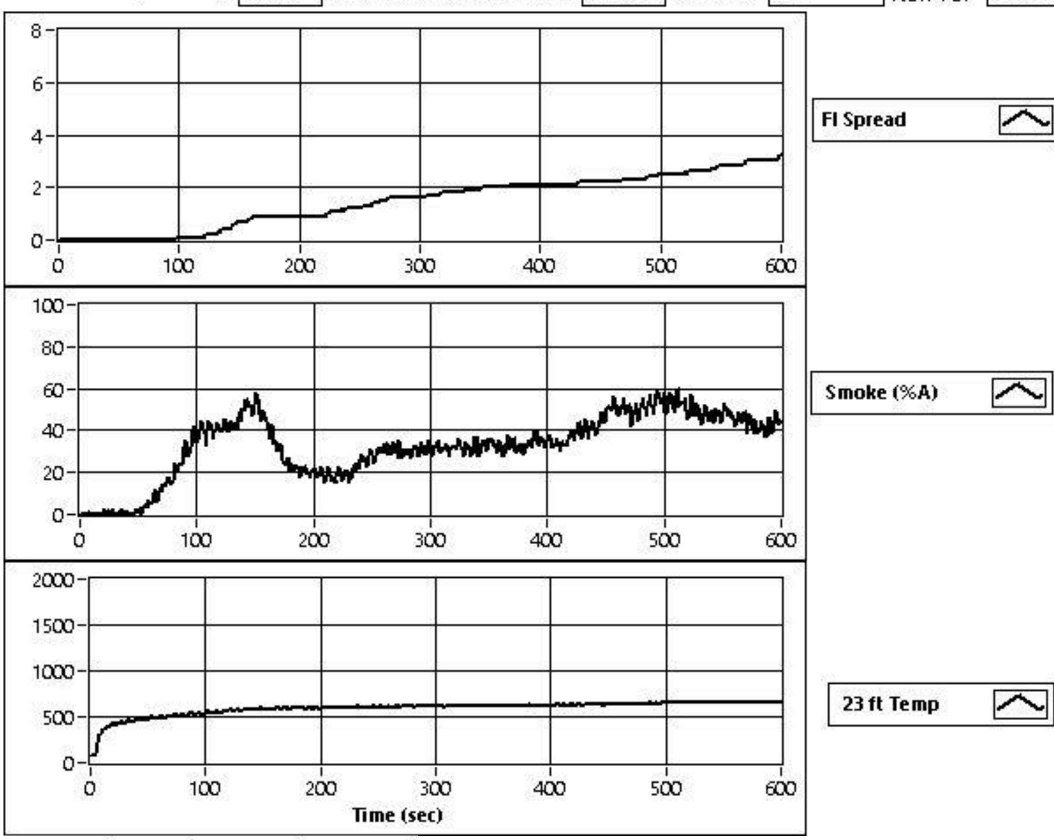
Specimen Description: 1" Ecotrack Edge track attached to the perimeter with a Midwall track centered longitudinally. 6lb density fiberglass core.

Mounting Procedure: Mounted onto 5/8" gypsum board by the manufacturer

Fuel (CF): 45.5
Time to 980F (min): 0
Max Temp (F): 663.2
Time to Max Temp (min): 9.352

FS Area: 14.51
Maximum FS: 3.16
MAX FS Time (min): 10

Smoke Area (%A min): 325.2
Calibration Smoke Area: 203.3
Raw SD: 160
Raw FSI: 26.841



Final FSI: 27
Final SD: 160

Test Room Temperature (°F): 73.4

Test Room Humidity (%RH): 48.1

Note: Distances on this page are reported in meters.

Test Method	Project #	Date	Time (Test Start)	Test No.
ULC S102.2	T16367	16 Jun 2020	10:28 AM	2

Specimen ID: Novawall 1' EcoTRACK Acoustical Panel

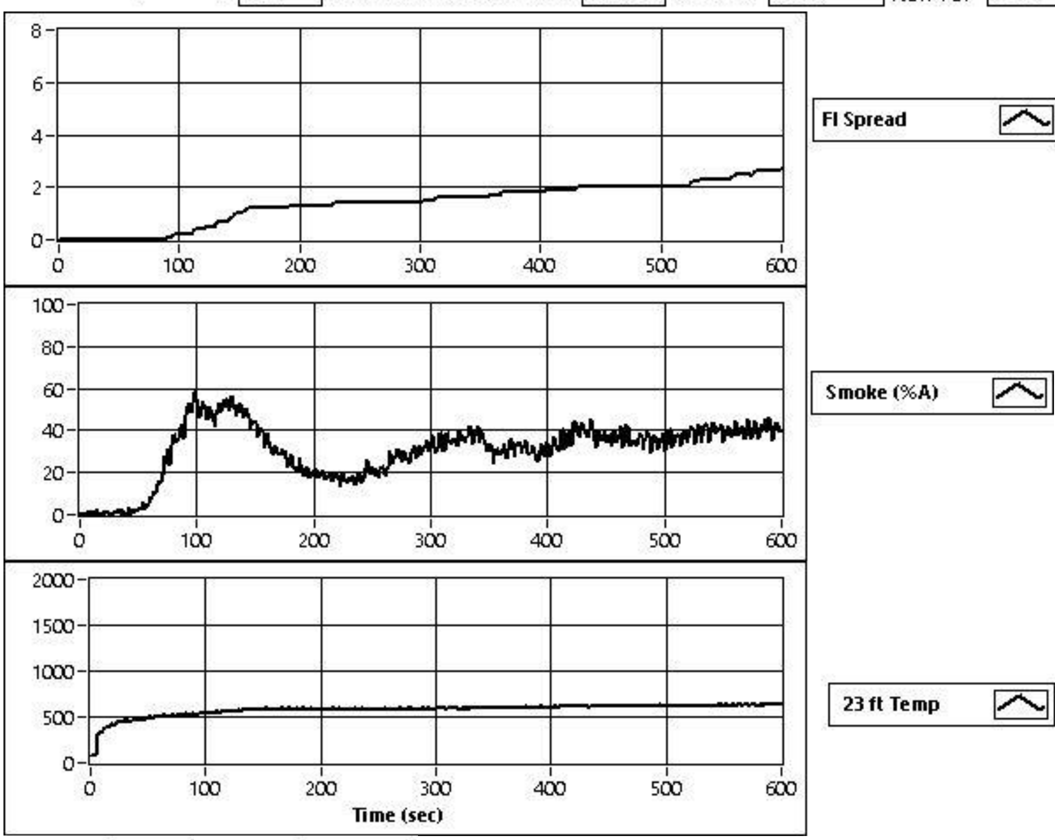
Specimen Description: 1" Ecotrack Edge track attached to the perimeter with a Midwall track centered longitudinally. 6lb density fiberglass core.

Mounting Procedure: Mounted onto 5/8" gypsum board by the manufacturer

Fuel (CF)	Time to 980F (min)	Max Temp (F)	Time to Max Temp (min)
45.6	0	636.1	9.914

FS Area	Maximum FS	MAX FS Time (min)
13.58	2.73	10

Smoke Area (%A min)	Calibration Smoke Area	Raw SD	Raw FSI
303	203.3	149.1	25.12



Final FSI: 25
Final SD: 149

Test Room Temperature (°F): 71.4

Test Room Humidity (%RH): 48.5

Note: Distances on this page are reported in meters.

Test Method	Project #	Date	Time (Test Start)	Test No.
ULC S102.2	T16367	16 Jun 2020	11:51 AM	3

Specimen ID: Novawall 1' EcoTRACK Acoustical Panel

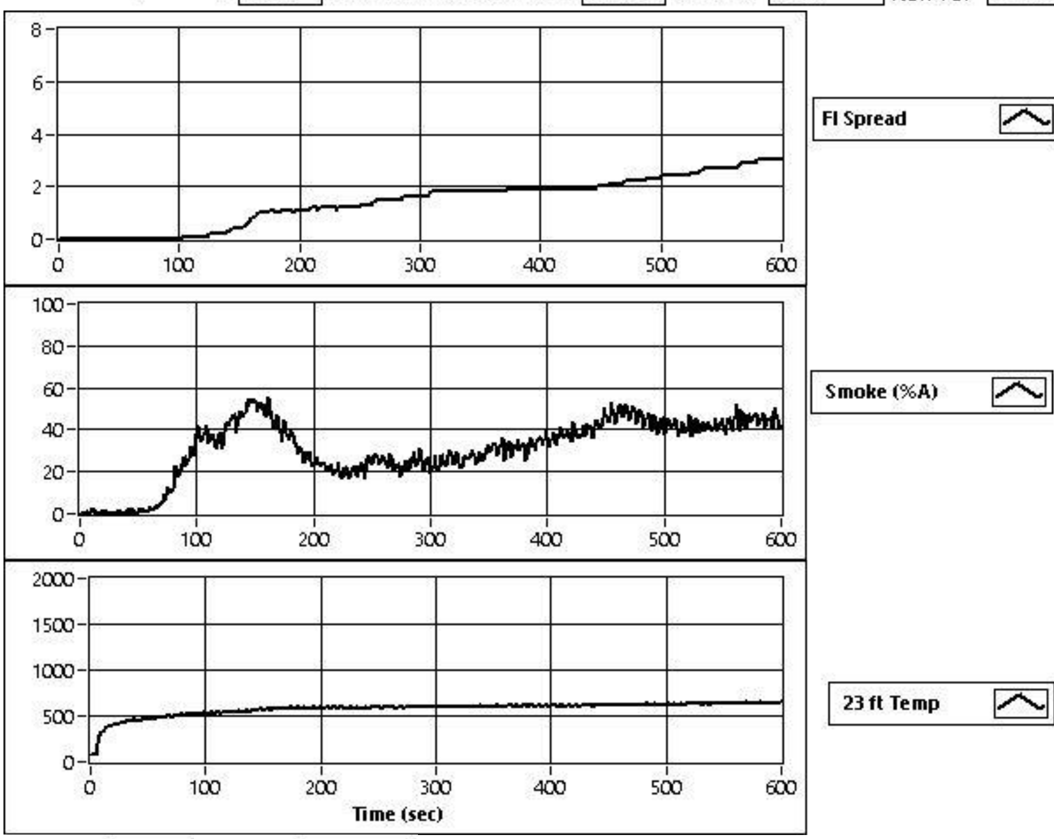
Specimen Description: 1" Ecotrack Edge track attached to the perimeter with a Midwall track centered longitudinally. 6lb density fiberglass core.

Mounting Procedure: Mounted onto 5/8" gypsum board by the manufacturer

Fuel (CF)	Time to 980F (min)	Max Temp (F)	Time to Max Temp (min)
45.5	0	645.7	9.881

FS Area	Maximum FS	MAX FS Time (min)
14.04	3.03	9.95

Smoke Area (%A min)	Calibration Smoke Area	Raw SD	Raw FSI
304.5	203.3	149.8	25.973



Final FSI	Final SD
26	150

Test Room Temperature (°F): 71.9

Test Room Humidity (%RH): 48.2

Note: Distances on this page are reported in meters.

VIII. DISCUSSION

CAN/ULC-S102.2 Standard Language and Disclaimers

The following language was taken directly from the CAN/ULC-S102.2 standard. It has been included for information purposes.

Smoke Developed Value (SDV) and Flame Spread Value (FSV) are recorded in this test. However, there is not necessarily a relationship between these two measurements. – CAN/ULC-S102.2:2018-REV1, Section 1.4

This method defines the relative surface burning characteristics under specified test conditions. Although the procedure is applicable to materials, products and assemblies used in building construction for development of comparative surface spread of flame data, test results may not reflect the relative surface burning characteristics of tested materials under all building fire conditions. – CAN/ULC-S102.2:2018-REV1, Section 3.1

The "fire hazard" of any material in the light of present knowledge cannot be evaluated on the basis of any one test. A body of tests, each measuring one or more characteristics of a material, product, or assembly, may be needed for full assessment. These assessments are intended as aids to those who have the responsibility for determining acceptable levels of potential hazard. The overall fire hazard of a material as it is to be used can only be determined by an analysis of its behavior under several test conditions in addition to further analysis which includes consideration of building construction, occupancy, location and fire protection features. – CAN/ULC-S102.2:2018-REV1, Section 3.2

IX. AUTHORIZED SIGNATURES

2020.06.18
15:47:40
-04'00'

Christopher Kaiser
Laboratory Technician II - Fire

06/18/2020
Date

Reviewed and Approved By:

Digitally signed by Chris Palumbo
Date: 2020.06.18
15:50:39 -04'00'

Chris Palumbo
Sr. Manager of Product Testing

06/18/2020
Date

X. REVISION HISTORY

Revision Number	Date	Summary
0	06/18/2020	Original Report Issued

XI. APPENDIX

Test Method: ULC S102
Project #: T16366
Date: 08 Jun 2020
Time (Test Start): 1:13 PM
Test No.: 1

Specimen ID: Novawall 1' EcoTRACK Acoustical Panel

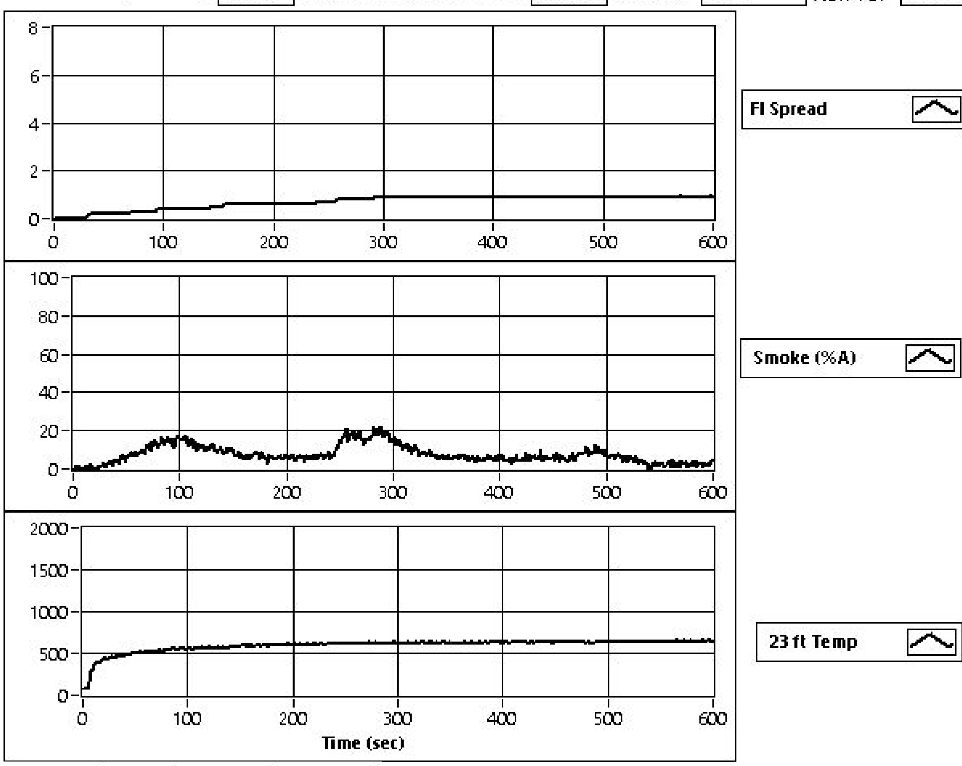
Specimen Description: 1" Ecotrack Edge track attached to the perimeter with a Midwall track centered longitudinally. 6lb density fiberglass core.

Mounting Procedure: Mounted onto 5/8" gypsum board by the manufacturer

Fuel (CF): 45.6 | Time to 980F (min): 0 | Max Temp (F): 651.6 | Time to Max Temp (min): 9.94

FS Area: 6.936 | Maximum FS: 0.96 | MAX FS Time (min): 9.97

Smoke Area (%A min): 73.53 | Calibration Smoke Area: 203.3 | Raw SD: 36.2 | Raw FSI: 12.833



Final FSI: 13 | Final SD: 36

Test Room Temperature (°F): 73.0

Test Room Humidity (%RH): 48.5

In accordance with Section A1.1.4, screening tests were conducted to determine whether mounting the product on the floor or mounting the product on the ceiling produced a higher flame spread value. The data above is from the screening test that was conducted on the ceiling of the test chamber. It has been included for informational purposes.