REPORT NUMBER
72128540

PREPARED FOR
DURGIN AND CROWELL LUMBER CO.
231 FISCHER CORNER RD.
NEW LONDON, NH 03257

ATTENTION
JON BAKER

PO#
061707

REPORT DATE
JUNE 27, 2017

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CERTIFICATION TEST PROGRAMS

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CERTIFICATION TEST PROGRAMS

PURPOSE

The purpose of this test report is to present the test results obtained during the performance of a test program. This report includes a brief description of the samples presented for test, a list of the documents presented as test instructions, and a summary of the testing performed and the results obtained. Applicable requirements and conclusions are based on the criteria provided by our client, or as specified in the reference document(s).

WORK REQUESTED / REFERENCE DOCUMENT(s)

Perform testing in accordance with ASTM F1951-14, Standard Specification for Determination of Accessibility of Surface Systems Under and Around Playground Equipment.

TEST SEQUENCE

1. Wheelchair work measurement method – straight propulsion with no material on a flat surface with a grade of 7.1%.
2. Wheelchair work measurement method – straight propulsion with material and no grade.
3. Wheelchair work measurement method – turning 90° with no material on a flat surface with a grade of 7.1%.
4. Wheelchair work measurement method – turning 90° with material and no grade.

Testing was performed June 27, 2017.

SAMPLE DESCRIPTION

Durgin and Crowell Lumber Co. submitted approximately 60 cubic feet of engineered wood fiber playground surfacing material, identified as Durgin and Crowell Safety Fiber.

TESTING PERFORMED

ACCESSIBILITY OF SURFACE SYSTEMS

Procedure

Sample material, Durgin and Crowell Safety Fiber, was installed in four inch layers, and tamped using a 10 inch X 10 inch hand tamper until a depth of twelve inches was achieved. The sample material was tested, propelling the wheelchair with four even propulsion strokes, per trial, across the material 5.56 feet, within eight seconds. This process was repeated five times for each test, (straight and 90º turn).

Per ASTM F1951-14, section 5.1, no additional modification occurred between propulsion trials. Installation instructions were not provided by the manufacturer.

Results

The average work force over one foot, in pound force-inch values, for straight propulsion and for turning with material surface in place, shall be less than the average work per foot values for straight propulsion and for turning, respectively, on a hard, smooth, surface with a grade of 7.1% ± 2% (1:14).

Discard the high and low work per foot values and average the remaining three trials to determine the average work per foot required to negotiate the test surface and the hard, smooth surface with a grade of 7.1% ± 2% (1:14).

Conclusion

The average work force over one foot, in pound force-inch values, measured **less** when propelling the wheelchair over the Durgin and Crowell Safety Fiber than when propelling the wheelchair over a flat surface with a grade of 7.1%.

The material **met** the requirements of ASTM F1951-14.

Sample Disposition

The sample material will be retained by TÜV SÜD America, Inc., for fifteen (15) days, then disposed of at the discretion of TÜV SÜD America, Inc., unless otherwise requested by Durgin and Crowell Lumber Co.

TEST EQUIPMENT

TÜV SÜD America, Inc.'s calibration system meets the requirements of ISO 17025.

TÜV ID	Description	Manufacturer	Model	Calibration Due
PLYP00043	Signal Conditioner	Daytronics	3370	09/17
PLYP00047	Reaction Torque Sensor	Lebow	2110220500	09/17
PLYP00015	Digital Protractor	Mitutoyo	Pro 360	05/18
PLYP00151	Wheelchair	Quickie	Q2	NCR
PLYP00175	Penetration Thermocouple	Fluke	88311E	01/18
PLYP00143	Digital Thermometer	Fluke	51-2	01/18
PLYP00152	Accessibility Fixture	DTL	N/A	NCR
PLYP00136	Balance	Toledo Scale	4181	10/17
PLYP00145	Air Pressure Gauge	Westward	2HKX9	04/18
PLYP00071	Hygro-thermometer	Extech Instruments	445702	04/18
PLYP00078	Tape Measure	Craftsman	39678	09/18

NCR – No Calibration Required

REMARKS

- Per ASTM F1951-14, section 7.1.2 Test Wheelchair Rider; a 165 + 11, -4.4lbs., test wheelchair rider shall propel the wheelchair during testing. The rider's weight was measured at 179 pounds prior to testing, thus deviating from the standard.
    - The wheelchair rider weight was 179 pounds, which combined with the wheelchair for a total of 227.7 pounds.

  Per section 7.1.3 Weight of Total System - The total weight of the wheelchair Rider System, including any distance measurement or data acquisition equipment residing on the wheelchair shall be a minimum of 187.2 lbs. and a maximum of 255 lbs.

Appendix A – Test Data

Test Date: 6/27/2017 Surface Temperature:23.6°C

Project No.: 72128540 Ambient Temperature:23.7°C

Customer: Durgin & Crowell Ambient Humidity:34%

Product Brand Name: Durgin & Crowell Safety Fiber

Run #	No Material (work per foot) (lbf-in)	With Material (work per foot) (lbf-in)
Straight Run 1:	130.602	130.981
Straight Run 2:	124.966	119.015
Straight Run 3:	125.901	112.002
Straight Run 4:	126.323	118.513
Straight Run 5:	132.533	126.179
Average:	127.635	121.236
Turn Run 1:	173.711	132.908
Turn Run 2:	170.239	137.046
Turn Run 3:	165.988	131.245
Turn Run 4:	166.495	123.842
Turn Run 5:	166.602	129.109
Average:	167.779	131.087

Wheelchair Rider Weight: 179lbs.

Wheelchair tire pressures checked/confirmed: ☑

Results are specific to the samples described above.