**REPORT NUMBER**
**QI1309611-4**


**PREPARED FOR**
RUBBERECYCLE, LLC
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LAKEWOOD, NJ 08701

**ATTENTION**
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**REPORT DATE**
OCTOBER 2, 2013

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**REPORTED / APPROVED BY:**

## TÜV SÜD America, Inc.

Reported by: Timothy Fouchia, Project Coordinator
CERTIFICATION TEST PROGRAMS

Approved by: David Splane, Certification Program Manager
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 F1951-09b, 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 October 1, 2013.

## SAMPLE DESCRIPTION

Rubberecycle, LLC, submitted one (1) surfacing system, identified by Rubberecycle, LLC, as AccessAmat 15Ft. System.

## TESTING PERFORMED

ACCESSIBILITY OF SURFACE SYSTEMS

### Procedure

Per Rubberecycle, LLC's installation procedure, the following system was installed in TÜV SÜD America, Inc.'s test fixture: one (1) inch of loose fill rubber playground surfacing material, overlying 0.5in. thick by 24in. wide by 24in. long AccessAmat rubber mats affixed together with screws at the seams, overlying five (5) inches of loose fill rubber playground surfacing material. Total system thickness of 6.5 inches.
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 propulsions).

Per ASTM F1951-09b, section 5.1, no additional compaction or modification occurred between propulsion trials.

### Results

The average work force over one foot, in pound force-inch values, for straight propulsion and for turning with material, should be less than the average work per foot values for straight and turning on a flat surface with a grade of 7.1%.

### Conclusion

The average work force per foot, in pound force-inch values, measured lower when propelling the wheelchair over the AccessAmat 15Ft. System than when propelling the wheelchair over a flat surface with a grade of 7.1%. The material met the requirements of ASTM F1951-09b.

### 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 Rubberecycle, LLC.

## TEST EQUIPMENT

TÜV SÜD America, Inc.'s calibration system meets the requirements of ISO 17025:2005.

| TÜV ID | Description | Manufacturer | Model | Calibration Due |
|---|---|---|---|---|
| PLYP00043 | Signal Conditioner | Daytronics | 3370 | 01/14 |
| PLYP00047 | Reaction Torque Sensor | Lebow | 2110220500 | 01/14 |
| PLYP00015 | Digital Protractor | Mitutoyo | Pro 360 | 06/14 |
| N/A | Wheelchair | Quickie | Q2 | NCR |
| N/A | Accessibility Fixture | DTL | N/A | NCR |
| PLYP00031 | Balance | Toledo Scale | 4181 | 07/14 |
| PLYP00044 | Scale | Acculab | CS-110P | 07/14 |

NCR – No Calibration Required

## REMARKS, Deviation(s):

- Per ASTM F1951-09b, section 7.1.2 Test Wheelchair Rider – A 165 + 11, -4.4lb test wheelchair rider shall propel the wheelchair during testing. The rider's weight was measured at 193 pounds prior to testing thus deviating from the standard requirements.
    - The wheelchair rider weight was 193 pounds, which combined with the wheelchair for a total of 243.7 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 lb and a maximum of 255 lb.

Page 6: Test Data

Material Name / Description: AccessAmat 15Ft. System

| Run # | No Material (work per foot) (lbf·in) | With Material (work per foot) (lbf·in) |
|---|---|---|
| Straight Run 1 | 136.389 | 130.456 |
| Straight Run 2 | 133.704 | 126.018 |
| Straight Run 3 | 132.006 | 120.896 |
| Straight Run 4 | 134.808 | 119.858 |
| Straight Run 5 | 129.994 | 125.259 |
| Average | **133.506** | **124.058** |

| | | |
|---|---|---|
| Turn Run 1 | 197.157 | 147.824 |
| Turn Run 2 | 193.229 | 145.251 |
| Turn Run 3 | 188.644 | 134.371 |
| Turn Run 4 | 187.836 | 137.643 |
| Turn Run 5 | 195.462 | 141.698 |
| Average | **192.445** | **141.531** |