



REPORT NUMBER
QI1100038



America

PREPARED FOR
SOIL EXPRESS, LTD
166 W. FRONTIER PKWY
PROSPER, TX 75078

ATTENTION
LINDA HUDSPETH

CUSTOMER PURCHASE ORDER NUMBER
2248

REPORT DATE
JANUARY 18, 2011

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REPORTED / APPROVED BY:

TÜV SÜD America, Inc.

A handwritten signature in black ink, appearing to read 'David Splane'.

Reported by: David Splane, Programs Coordinator
CERTIFICATION TEST PROGRAMS

A handwritten signature in black ink, appearing to read 'Timothy Fouchia'.

Approved by: Timothy Fouchia, Test Technician
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)

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 on January 18, 2011.

SAMPLE DESCRIPTION

Soil Express, Ltd., submitted approximately 60 cubic feet of loose fill wood material for testing identified by Soil Express, Ltd., as EcoKid Express.



TESTING PERFORMED

ACCESSIBILITY OF SURFACE SYSTEMS

Procedure

Sample material, EcoKid Express, was installed in four inch layers and tamped using a 10" X 10" hand tamper until a depth of twelve inches was achieved. The sample was tested, propelling the wheelchair with four even propulsion strokes, per trial, across the material 6.56 feet, within eight seconds. This process was repeated five times for each test, (straight and 90° turn).

Per ASTM F1951-09b, section 5.1, no additional compaction or modification occurred between propulsion trials. Sample was re-compacted between work measurement methods, (straight and 90° turn).

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 over one foot, in pound force-inch values, measured lower when propelling the wheelchair over a twelve inch compacted depth EcoKid Express material, 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 Soil Express, Ltd.



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	01/11
PLYP00047	Reaction Torque Sensor	Lebow	2110220500	01/11
PLYP00015	Digital Protractor	Mitutoyo	Pro 360	07/11
N/A	Wheelchair	Quickie	Q2	NCR
N/A	Accessibility Fixture	DTL	N/A	NCR
N/A	Hand Tamper	Ludell	10 inch X 10 inch	NCR
PLYP00044	Scale	Acculab	CS-110P	07/11

NCR – No Calibration Required

REMARKS

The wheelchair rider weight was 175 pounds, which combined with the wheelchair for a total of 222.7 pounds.

APPENDICES: Appendix A: Test Data



Material Name / Description: EcoKid Express

Run #	No Material (work per foot) (lbf·in)	With Material (work per foot) (lbf·in)
Straight Run 1	105.78	113.15
Straight Run 2	108.00	101.83
Straight Run 3	108.78	97.36
Straight Run 4	103.97	97.35
Straight Run 5	109.28	95.42
Average	107.52	98.85

Turn Run 1	167.46	162.83
Turn Run 2	169.05	131.93
Turn Run 3	167.49	132.91
Turn Run 4	166.78	137.60
Turn Run 5	163.07	133.40
Average	167.24	134.64