REPORT PREPARED FOR
Event•Trac®

Safety & Health Services

HIGH SAFETY CONSULTING SERVICES, LTD.

Slip-Resistance Assessment of HD Asphalt & Concrete Graphic Decals

SLIP REISTANCE TESTING REPORT

Prepared by:
Steven D. High, MS, CSP, ARM, EMT (PA), CXLT
High Safety Consulting Services, Ltd.
1853 William Penn Way
Lancaster, PA 17601 USA

1-877-285-1129 Toll-Free

For:

Brent McKinnon
Vice President
Event-Trac®
www.event-trac.com

THE ORIGINAL COPY OF THIS REPORT INCLUDES AN EMBOSSED SEAL ON THIS PAGE. ORIGINAL REPORT COPIES ARE AVAILABLE FROM HSCSL.

This is an abbreviated electronic version of the report. Full paper reports are available to the client upon request for a small production fee.

Project & Results Overview

High Safety Consulting Services, Ltd. was retained to provide slip-resistance testing services to evaluate a textured, adhesive-backed graphic decal used on asphalt and concrete surfaces.

The surface was tested wet and dry. All materials were tested level. Using these products on sloped surfaces will change the coefficient of friction requirements. Information regarding slope impact is included in this report.

Data were entered in to SPSS for analysis and data tables are provided based on this analysis.

Summary of Test Results of Surfaces Tested

Material	DRY	WET
HD Asphalt / Concrete Decal "Event-Trac®"	>0.97	0.92

The above results demonstrate that the product tested is slip-resistant and provides a high-level of slip-resistance for general applications on both wet and dry surfaces.

The product meets specifications of the Americans with Disabilities (ADA) and exceeds the threshold of safety based on tribometric standards and practices.

This product can be used on a sloped surface with an angle of up to 6.7 degrees while maintaining a high level of safety. The product should not be applied to slopes greater than 24 degrees.

Tests were performed in accordance with the manufacturers' operating guidelines for the English XL Variable Incidence Tribometer (VIT) and ASTM F-1679.

All testing was performed by a Certified XL Tribometrist. All materials were tested for dry and wet with readings in four cardinal directions.

This report may be distributed as necessary for business purposes only by Event-Trac. No other user may distribute this report without express written permission by High Safety Consulting Services, Ltd.

Description of Materials and Comments on Results:

The material consisted of a rolled adhesive back decal. The material had a textured finish. The material can be imprinted with custom graphics and intended to be used for limited periods of time.

See photo documentation at end of the report for images of the material. The material was applied to a ½" plywood backing for testing. Reference to "North" was testing in an upward direction based on the graphic orientation.

Test results were consistent with a standard deviation of 0.05 dry and 0.07 wet. The test method has internal variation of 0.02.

Because most slips and falls involve a liquid contaminated surface, an effort to improve slip-resistance should be initiated for surfaces when results are less than 0.50.

The product seems to be water-resistant and water would move easily across the surface. There was not attempt to assess the absorption properties of the material over time. Changes in water content of a product could change slip-resistance.

The likelihood of a surface being wet is high. Having an effective slip-resistance in a wet environment is a reasonable expectation for this product and one that the product meets.

The product performed very well with levels above 0.90 both wet and dry. There was no appreciable reduction in slip-resistance when wet based on mean results. However, the dispersion of the data was greater on the wetted surface. This resulted in a number of lower readings. I could not determine the reason for the dispersion as the surface appears to be homogenous in its texture.

The texture appears to be random without any particular directional aspects and testing did not demonstrate any directional preference.

Test results exceeding 1.00 were reported as 1.00. This is the reason for the skew to the right in the histogram distribution for dry tests. Readings above 1.00 are off-scale and not easily interpretable. Not all 1.00 readings were above 1.00, some where at 1.00. No wet-testing 1.00 results were above 1.00.

Measurements made under the ASTM F-1679 method should not be equated to test results using other methods. Significant variation in test results is not uncommon between methods for various reasons. However, in most cases materials performing well under ASTM 1679 will perform well under most other recognized testing standards.

Qualifications and Credentials:

Steven D. High of High Safety Consulting Services, Ltd. conducted all tests and developed this report. Mr. High has been involved in the safety and health field since 1988 and is a member of the ASTM F-13 Committee which develops slip-resistance testing and walkway safety standards. Steve holds a B.S. in Business Administration from Elizabethtown College (1986) and a M.S. in Sciences (2002) at the Indiana University of Pennsylvania, with a thesis in sticktion as a function of residence time on drag-sled devices. Mr. High is certified as an XL tribometrist (CXLT) (Certificate No: F0202-0891) He is a board certified safety professional (CSP) (Certificate No:12394).

Mr. High also completed coursework and testing obtaining the designation Associate in Risk Management (ARM) by the Insurance Institute of America. He is a recognized accident and illness prevention provider by the State of Pennsylvania and is currently certified as an Emergency Medical Technician. (#012414). Mr. High is an authorized OSHA instructor for both general industry and construction and has taught thousands of students in occupational safety topics over the past twenty-two years. He is current completing coursework in epidemiology and bio-statistics at Drexel University.

He has been employed as a Safety Specialist, Safety & Training Coordinator, Corporate Manager of Safety, Industrial Hygiene, and Environmental Services. Currently Mr. High is the President of High Safety Consulting Services, Ltd. (HSCSL), an affiliate of High Industries, Inc. HSCSL provides slip-resistance testing services, indoor air quality assessments, compliance surveys, safety training, noise monitoring and abatement design, and general consultation services.

List of Sources

English, William. Pedestrian Slip Resistance: How to Measure it and How to Improve it. Alva: William English Inc., 1996.

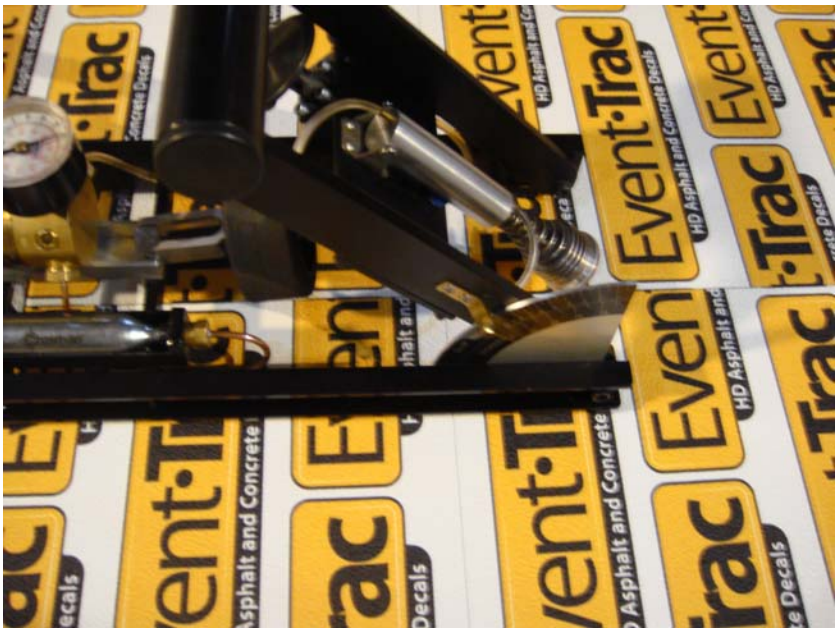
English, William. Instruction Manual for the English XL Variable Incidence Tribometer, 2002.

American Society of Testing Materials (ASTM). Standard Test Method for Using a Variable Incidence Tribometer (VIT). (F-1679-00).

National Fire Protection Associations (NFPA). Automotive Fire Apparatus 1901, 2003 Edition.

Bureau of Labor Statistics, U.S. Department of Labor, Survey of Occupational Injuries and Illnesses.

PHOTOGRAPHIC DOCUMENTATION OF TESTING



DRY TEST IN SOUTH DIRECTION

TEXTURE CLOSE-UP