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30<sup>th</sup> April 2007

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**Slipperiness Assessment  
Skidproof  
Contract No. JC4600355  
HSL Letter Report No. PED/LET/07/57**

Dear Mr. Blackmore

Further to your request for a laboratory-based slipperiness assessment of treated and untreated vinyl samples (HSL Sample Numbers PED/07/95 and PED/07/96), testing was undertaken by Mr. Graeme Hunwin (Scientist, Pedestrian Safety Section, HSL) on the 27<sup>th</sup> April 2007.

Slipperiness Assessments were undertaken using standard HSL / HSE techniques in accordance with 'The UK Slip Resistance Group Guidelines' (Issue 3, 2005). Data generated during the assessments, along with tables allowing easy interpretation, are reproduced in Appendix A. Further interpretation may be undertaken in line with the above guidelines.

Measurements of the floor surface 'Pendulum Test Value' (PTV, closely related to coefficient of dynamic friction) were made using a calibrated Stanley Pendulum instrument. Data was generated [i] in the as-found, dry condition and, [ii] after application of low volumes of potable water to the flooring by hand-spray. The test slider material used was 'Slider 96 Rubber', also known as 'Four-S Rubber' (Standard Simulated Shoe Sole, developed to represent a footwear material of moderate performance). Further tests were undertaken using a calibrated surface microroughness transducer set to the Rz parameter (see HSE Guidance Note S&T1 for details).

Results suggest that sample PED/07/95 (vinyl sample, untreated) presents a low slip potential in the as-found, dry condition, and a moderate slip potential in the water-contaminated condition. Sample PED/07/096 (vinyl sample, skidproof treated) presents a low slip potential in the as-found, dry condition, and a low slip potential in the water-contaminated condition. It should be

noted that the performance of the treated surface may be subject to change with wear.

The test results presented relate only to the samples under study at the time of testing. The performance of materials may change significantly during installation and throughout their lifetime; slip resistance is critically dependent on the level and type of contamination, treatment, maintenance and effective cleaning subsequent to installation.

Please don't hesitate to contact me on my direct number / e-mail (below) if you would like to discuss the results.

Yours sincerely,



Mr. Graeme Hunwin

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**Issue authorised:**

Shu Powell

**Issue authorised:**

Shuna Powell

**Date:**

30/04/07

**RESTRICTED: COMMERCIAL**

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**Appendix A: Test Data**

**Sample Identification:** PED/07/095

**Sample Type:** Vinyl - Untreated

**Mean Rz Surface Roughness:** 12.0 µm

**Pendulum PTV (Slider 96):**

Condition	Contamination	Test Direction	PTV
As-found	None	Direction 1	62
As-found	None	Direction 2	63
As-found	None	Direction 3	62
As-found	Wet	Direction 1	35
As-found	Wet	Direction 2	35
As-found	Wet	Direction 3	34

**Sample Identification:** PED/07/096

**Sample Type:** Vinyl - Treated

**Mean Rz Surface Roughness:** 70.2 µm

**Pendulum PTV (Slider 96):**

Condition	Contamination	Test Direction	PTV
As-found	None	Direction 1	65
As-found	None	Direction 2	63
As-found	None	Direction 3	62
As-found	Wet	Direction 1	54
As-found	Wet	Direction 2	51
As-found	Wet	Direction 3	49

**Adapted from: 'The Assessment of Floor Slip Resistance: The UK Slip Resistance Group Guidelines', Issue 3, 2005.**

Note: The information presented below is intended as a guide. Other factors, such as level and type of pedestrian activity and user demographic (such as age and physical ability) should be considered. A risk assessment should be conducted in all situations.

Pendulum Test Value	Slip Potential
0 - 24	High Slip Potential
25 - 35	Moderate Slip Potential
36 +	Low Slip Potential

Rz Surface Roughness (µm)	Water-Wet Slip Potential
Below 10 µm	High Slip Potential
10 - 20 µm	Moderate Slip Potential
20 + µm	Low Slip Potential