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SLIP RESISTANCE ASSESSMENT OF TWO FLOOR PAINT SAMPLES, REFERENCE 'THE GARAGE FLOOR PAINT, CLASSIC GREY' AND 'ANTISLIP PU FLOOR PAINT', SUPPLIED BY FLAG PAINTS LIMITED.

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Issue Date: *24th April 2008*

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1. Introduction

4-RAIL Services Limited was requested by Mr. Tony Grover of Flag Paints Limited to carry out a slip resistance assessment of two floor paint samples.

A brief description of the samples received on 22nd April 2008 is given below:

SAMPLE REF	*DESCRIPTION*	*APPROX SIZE / mm*
080102/1	Paint applied to wooden substrate; client reference 'The garage floor paint' Classic Grey	300 x 300
080102/2	Paint applied to wooden substrate; client reference 'Antislip PU floor paint' Grey	300 x 300

2. Test Methods

Slip resistance and surface roughness (Rz) was measured in accordance with 4-RAIL Services Limited Test Procedure 4R-M125, which is based on the guidelines recommended by the UK Slip Resistance Group in the booklet 'The Measurement of Floor Slip Resistance' and BS 7976 Method of calibration and operation of the pendulum tester.

Slip resistance was measured with a portable slip tester designed by the Transport Research Laboratory (TRL). Testing was carried out under both dry and wet conditions, using the standard Four S contact rubber as specified by the Rubber and Plastics Research Association.

The sample was slip tested in three directions; along a defined principal axis and at 90° and 45° to the principal axis. Each individual test comprised testing of the flooring material eight times under both dry and wet conditions, with the first three readings being discarded and an average calculated from the last five.

Surface Roughness Measurements were taken using a Surtronic 10. Ten readings were taken in random locations on the surface of the test piece and the average calculated.

3. Results

3.1 Slip Resistance

Slip Resistance measurements were made on the samples on 22nd April 2008

The sample was tested under the following environmental conditions:

Air Temperature:	19.5 °C
Floor Temperature:	18.7 °C
Humidity:	54 %RH

SAMPLE NUMBER	TEST DIRECTION	TEST CONDITION	SLIP RESISTANCE VALUES	AVERAGE VALUE	OVERALL AVERAGE
080102/1 The garage floor paint	Principal Axis	Dry	65, 65, 65, 65, 65	65	**Dry: 65 Wet: 59**
		Wet	59, 59, 59, 59, 59	59	
	90° to Principal Axis	Dry	64, 64, 64, 64, 64	64	
		Wet	59, 59, 59, 59, 59	59	
	45° to Principal Axis	Dry	65, 65, 65, 65, 65	65	
		Wet	60, 60, 60, 60, 60	60	
080102/2 Antislip PU floor paint	Principal Axis	Dry	65, 65, 65, 65, 65	65	**Dry: 65 Wet: 56**
		Wet	56, 56, 56, 56, 56	56	
	90° to Principal Axis	Dry	64, 64, 64, 64, 64	64	
		Wet	56, 56, 56, 56, 56	56	
	45° to Principal Axis	Dry	65, 65, 65, 65, 65	65	
		Wet	55, 55, 55, 55, 55	55	

3.2 Surface Roughness Results

The average Rz values were determined as listed below:

SAMPLE REF	*Surface Roughness Values (Rz/µm)*	*Average Value / (Rz/µm)*
080102/1	10.1, 15.7, 18.4, 21.8, 22.2, 12.3, 15.4, 17.6, 18.4, 15.0	16.7
080102/2	11.3, 10.2, 8.0, 8.9, 17.5, 14.0, 8.1, 9.4, 11.2, 15.8	11.4

4. Comments

The criteria generally accepted in the U.K. are given in the 'Guidelines Recommended by the UK Slip Resistance Group'. However, it should be noted that no single piece of information can be used to assess a floor's potential for slip. A brief summary is given overleaf:

4S Pendulum Value	Potential for Slip
25 and below	High
25 to 35	Moderate
35 to 65	Low
Above 65	Extremely Low

The criteria apply under both **dry** and **wet** conditions. Only flooring in the "Low" or "Extremely Low" categories are deemed acceptable for general pedestrian use.

Rz Surface Roughness	Potential for Slip
Below 10	High
Between 10 and 20	Moderate
Above 20 and up to 30	Low
Above 30	Extremely Low

The surface roughness values are applicable for water wet low activity pedestrian areas. Generally surfaces contaminated with pure water require a surface roughness of at least 10μm R_Z to provide a reasonable level of slip resistance.

Both test samples fall into the category of low potential for slip under both dry and wet test conditions.

Results are presented for final comments from Flag Paint Limited.