

### TEST REPORT

REPORT NO : 2016PC0649

PAGE NO : 1 OF 5

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Applicant : NISSHA INDUSTRIAL AND TRADING MALAYSIA SDN. BHD.  
Lot 7, Jalan P/13  
Kawasan Miel, Seksyen 10  
43650 Bandar Baru Bangi  
Selangor Darul Ehsan

Manufacturer : - same as above -

Product : PVC Flooring

Reference Standards : Please refer to Page 2

Description of Sample : Six (6) pieces of sample with dimensions of approximately 300 mm (length) x 180 mm (width) x 3 mm (thickness), were received on 12 August 2016 and 15 August 2016.

Date Received of Complete Application : 15 August 2016

Job No. : J20161460360

Description of Test Result : The test results of the submitted test sample are described in Pages 3 to 5 of this test report.

Issued date : 2 September 2016

Approved Signatory:

  
.....  
(Siti Rohana Ahmad)  
Testing Executive





.....  
(Rahmad Abd Shukor)  
Head  
Plastics and Composite Materials Section  
Testing Services Department

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**Reference Standards:**

- 1) BS EN 427: 1994 – Resilient Floor Coverings – Determination of the Side Length, Squareness and Straightness of Tiles
- 2) BS EN 429: 1993 – Resilient Floor Coverings – Determination of the Thickness of Layer
- 3) BS EN 433: 1994 – Resilient Floor Coverings – Determination of Residual Indentation After Static Loading
- 4) BS EN 434: 1994 – Resilient Floor Coverings – Determination of Dimensional Stability and Curling After Exposure to Heat
- 5) BS EN 660-2: 1999 – Resilient Floor Coverings – Determination of Wear Resistance – Part 2: Frick-Taber Test
- 6) BS EN 423: 2002 – Resilient Floor Coverings – Determination of Resistance to Staining
- 7) BS EN 431: 1994 – Resilient Floor Coverings – Determination of Peel Resistance

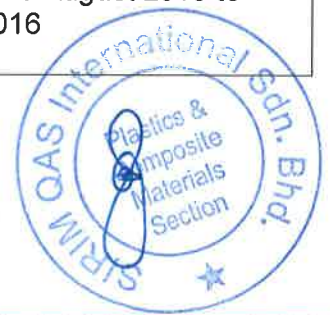


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**Results:**

**PVC Flooring**

No.	Test	Result	Test Method
1	Dimension a) Length, mm b) Squareness, mm c) Straightness, mm	337 3.20 1.58	BS EN 427 Using calibrated ruler and caliper Date of test: 22 August 2016
2	Layer Thickness, mm a) Layer 1 b) Layer 2 c) Layer 3 d) Layer 4	1.26 1.35 0.08 0.10  (See Figure 1 for photomicrograph of the sample)	BS EN 429 Using Stereo Microscope Magnification: 36 times Date of test: 25 August 2016
3	Dimensional Stability After Exposure to Heat, % a) Machine direction b) Transverse direction	0.05 0.05	BS EN 434 Temperature: 80°C Duration: 6 hours Date of test: 22 August 2016
4	Curling After Exposure to Heat, mm	0.6	
5	Residual Indentation, mm	0.09	BS EN 433 Load: 500 N Duration: 150 minutes Date of test: 25 August 2016 to 26 August 2016



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**Results (Continued):**

**PVC Flooring**

No.	Test	Result	Test Method
6	Abrasion Resistance		BS EN 660-2
	a) Average Mass Loss ( $F_m$ ), mg per 100 revolutions	1.4	Number of revolution: 5,000 Average density: 1.8 g/cm <sup>3</sup> Date of test: 23 August 2016
	b) Average Volume Loss ( $F_v$ ), mm <sup>3</sup> per 100 revolutions	0.8	
7	Peel Resistance, N/50 mm		BS EN 431
	a) Machine Direction	37	Test speed: 100 mm/minutes Date of test: 26 August 2016
	b) Transverse Direction	67	
8	Stain Resistance, Index*		BS EN 423
	Staining Material:		Test condition: At room temperature Duration: 2 hours Date of test: 23 August 2016
	a) White spirit	0	
	b) Turpentine	0	
	c) Warm water	0	
	d) Denatured ethanol	0	

Note: \* Please refer to Table 1 for the interpretation of the result

**Table 1: Interpretation and presentation of results**

Index	Effect of test after cleaning/abrasion
0	Not affected
1	Very slightly affected
2	Slightly affected
3	Affected
4	Several affected



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**Results (Continued):**

**PVC Flooring**

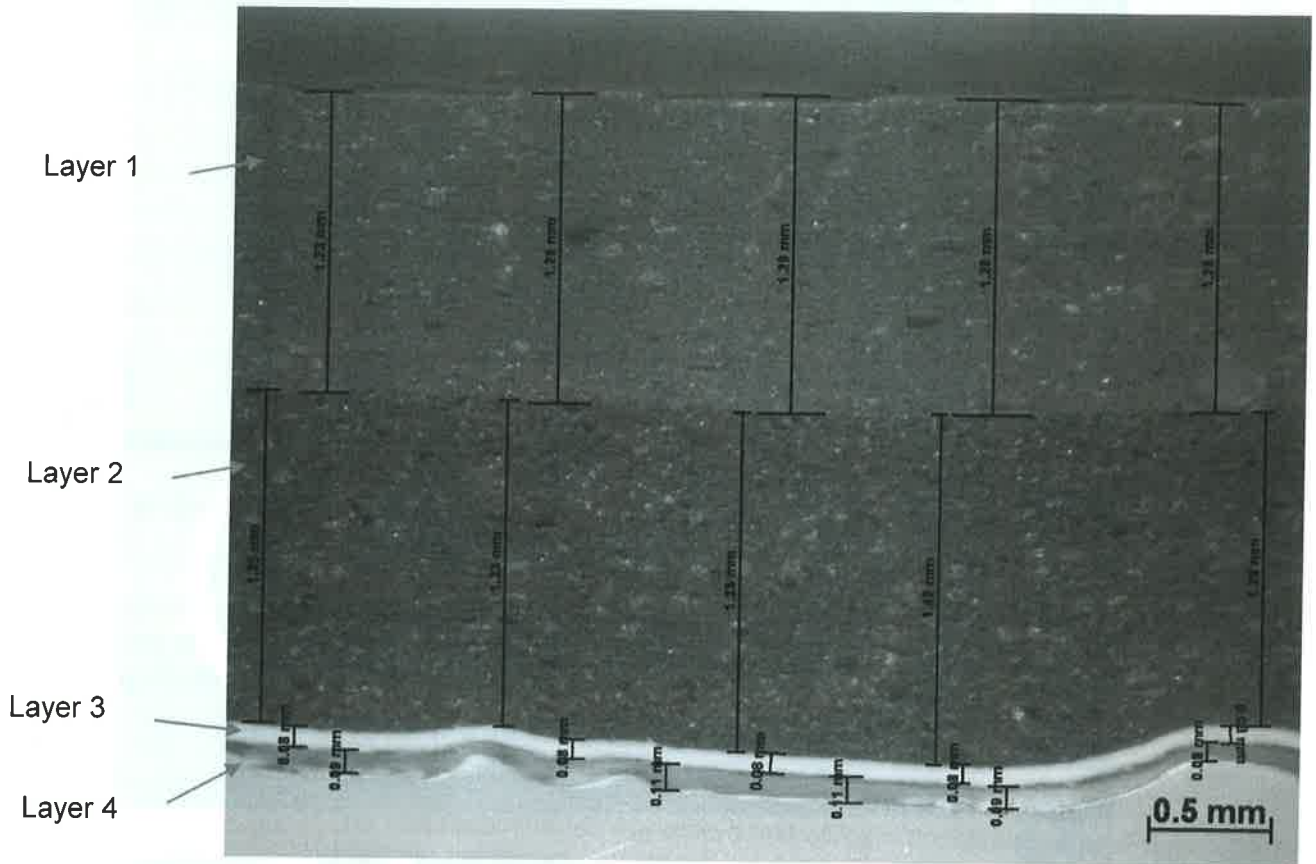


Figure 1. Photomicrograph of Cross-Section of PVC Flooring Sample

