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Auftraggeber:	DAEJIN Co., Ltd.		
<i>Client:</i>	327, Sodong-ri, Umbong – myeon, Asan-si Chungnam-do, Korea		
Gegenstand der Prüfung:	Floor coverings		
<i>Test item:</i>			
Bezeichnung:	PVC LAMINATED FLOOR	Serien-Nr.:	N.A.(Prototype)
<i>Identification:</i>	TILE (DW-3008)	<i>Serial No.:</i>	
Wareneingangs-Nr.:	133013772	Eingangsdatum:	10.05.2006
<i>Receipt No.:</i>		<i>Date of receipt:</i>	
Prüfort:	Same as client		
<i>Testing location:</i>			
Prüfgrundlage:	EN 649 : 1997		
<i>Test specification:</i>	EN 14041 : 2000		
Prüfergebnis:	Der vorstehend beschriebene Prüfgegenstand wurde geprüft und entspricht oben genannter Prüfgrundlage.		
<i>Test Result:</i>	<i>The a. m. test item Passed.</i>		
Prüflaboratorium:	TÜV Rheinland Product Safety GmbH		
<i>Testing Laboratory:</i>			
Sonstiges/ Other Aspects:			
<p>Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens.</p> <p><i>This test report relates to the a. m. test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any safety mark on this or similar products.</i></p>			

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EN 649 : 1997**General requirement**

Characteristic	Requirement	Test method	Test results
Side length : mm Squareness and straightness for side length : mm > 400 mm > 400 mm (intended for welding)	Deviation ≤ 0.13 % of nominal length up to 0.5 mm maximum ≤ 0.35 ≤ 0.50	EN 427	470 mm x 470 mm Deviation : 0.3 (Width & Length) 0.3 (Squareness)
Overall thickness : mm	Nominal value $^{+0.13}_{-0.10}$ Average value ± 0.15	EN 428	3 mm Deviation : 0.05
Wear layer thickness : mm	Nominal value $^{+0.13}_{-0.10}$ Average value ± 0.15	EN 429	# 1 : 0.32 # 2 : 0.50 # 3 : 0.75 # 4 : 1.04
	Thickness loss	PrEN 660-1	Wear group T
Total mass per unit area : g/m ²	Nominal value $^{+0.13}_{-0.10}$	EN 430	4889.7
Density : kg/m ³ For homogeneous and wear layer of heterogeneous	Nominal value ± 50	EN 436	1522
Residual indentation : mm	≤ 0.1	EN 433	0.08
Dimensional stability after exposure to heat : Sheets & tiles (intended for welding) Tiles (intended for dry-joint laying)	≤ 0.4 ≤ 0.25	EN 434	Width : -0.12 Length : -0.12 Test condition : 80°C,6h Expansion (+), Shrinkage (-)
Flexibility	Test using a 20 mm mandrel.	EN 435 Method A	No crack was found
Color fastness to artificial light	Up to grade 6	ISO 105-B02 Method 3¹⁾	Grade 6

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EN 14041 : 2000

Resilient, textile and laminate floor coverings for interior use

Characteristic	Requirement	Test method	Test results
Reaction-to-fire - Inflammability - Smoke density	$F_s \leq 150$ mm within 20s Critical flux ≥ 8.0 kW/m ² Smoke $\leq 750\%$ x min	EN 13501-1	Under 150mm 8.5 562.8 Classification : B_{fl} – s1
Contents of pentachlorophenol	less than 0.1 % by mass	BS 5666 : Part 6	Not detected
Emission of formaldehyde	E1 : ≤ 3.5 mg/m ² /h E2 : 3.5 to 8.0 mg/m ² /h	EN 717-2	0.3
Electrical behavior	- Resistance $\leq 10^6 \Omega$ (at open circuit 100 V d.c) - Resistance $> 10^6 \Omega$ (at open circuit 500 V d.c)	EN 1081	Please see below table. Test results for Electrical behavior

Test results for Electrical behavior

	Temp(°C)/ Humidity(%)	Sample No.1		Sample No.2		Sample No.3	
		100V d.c	500V d.c	100V d.c	500V d.c	100V d.c	500V d.c
R1 (10 ⁶ Ω)	23.6 °C	11.8	50.0	13.1	53.0	11.7	41.0
R2 (10 ⁶ Ω)	49.2 %	13.1	35.0	14.3	32.0	14.5	34.0
R3 (10 ⁶ Ω)		9.8	138.0	9.6	107.0	10.1	150.0

- Requirements : - Resistance $\leq 10^6 \Omega$ (at open circuit 100 V d.c)- Resistance $> 10^6 \Omega$ (at open circuit 500 V d.c)

- R1 : Vertical resistance, R2 : Resistance to earth, R3 : Surface resistance

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Slip resistance

Floor coverings intended for general use areas shall have a dynamic coefficient of friction of ≥ 0.3

When tested ex-factory under dry conditions in accordance with EN 00134033 and shall be declared as technical class D.

Although such floors may be subjected to occasional spillage and wet cleaning the, manufacturer does not guarantee the performance under these conditions.

Floor covering intended for use in areas where enhanced slip resistance is required shall meet the requirements of EN 13845 and shall be declared as technical class ES.

Floor covering for which no performance has been determined shall be declared as technical class N.

For the slip resistance test, manufacturer adopts pendulum test method instead of ramp test which specified in this standard.

During testing it was noted that following movement of the slider 96 across the sample surface a residue of the rubber was left behind. Each test was conducted on different parts of the surface area. Repeat testing in direction one was conducted on a new area of sample surface and demonstrated no significant change in slip potential from the original test in direction one.

Slipperiness	Pendulum Test Value	BS 7976-2	Dry conditon :
	Rz Surface Roughness (μm)		Low slip potential
	0 – 24 : High Slip Potential		Water-wet condition :
	25 -35 : Moderate Slip Potential		High slip potential
	36 + : Low Slip Potential		Moderate Slip Potential
	Below 10 μm : High Slip Potential		
	10 – 20 μm : Moderate Slip Potential		
	20 + μm : Low Slip potential		

Test results for Slipperiness

Contamination	Test Direction	PTV	Mean Rz Surface Roughness
Dry	Direction 1	77	10.9 μm
Dry	Direction 1 repeat	79	
Dry	Direction 2	71	
Dry	Direction 3	68	
Wet	Direction 1	17	
Wet	Direction 2	19	
Wet	Direction 3	21	