Produktsicherheit und –qualität
Product Safety and Quality

TÜV Rheinland Group

Prüfbericht - Nr.: *Test Report No.*	**13005601 001**		**Seite 1 von 4** *Page 1 of 4*
Auftraggeber: *Client:*	DAEJIN Co., Ltd. 327, Sodong-ri, Umbong – myeon, Asan-si Chungnam-do, Korea		
Gegenstand der Prüfung: *Test item:*	Floor coverings		
Bezeichnung: *Identification:*	PVC LAMINATED FLOOR TILE (DW-3008)	**Serien-Nr.:** *Serial No.:*	N.A.(Prototype)
Wareneingangs-Nr.: *Receipt No.:*	133013772	**Eingangsdatum:** *Date of receipt:*	10.05.2006
Prüfort: *Testing location:*	Same as client		
Prüfgrundlage: *Test specification:*	**EN 649 : 1997** **EN 14041 : 2000**		
Prüfergebnis: *Test Result:*	**Der vorstehend beschriebene Prüfgegenstand wurde geprüft und entspricht oben genannter Prüfgrundlage.** *The a. m. test item Passed.*		
Prüflaboratorium: *Testing Laboratory:*	TÜV Rheinland Product Safety GmbH		
Sonstiges/ *Other Aspects:*			

EN 649 : 1997

General requirement

Characteristic	Requirement	Test method	Test results
Side length : mm **Squareness and straightness for slide length** : mm > 400 mm > 400 mm (intended for welding)	Deviation ≤ 0.13 % of nominal length up to 0.5 mm maximm ≤ 0.35 ≤ 0.50	**EN 427**	**470 mm x 470 mm** Deviation : **0.3** (Width & Lenght) **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 P**
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 (indentation 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 3**[1)]	**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**	Fs ≤ 150 mm within 20s Critical flux ≥ 8.0 kW/m^2 Smoke ≤ 750% x min	**EN 13501-1**	**Under 150mm** **8.5** **562.8** Classification : **B_{fl} – s1**
Contents of pentachlo-rophenol	less than 0.1 % by mass	**BS 5666 : Part 6**	**Not detacted**
Emission of formalde-hyde	E1 : ≤ 3.5 mg/m^2/h E2 : 3.5 to 8.0 mg/m^2/h	**EN 717-2**	**0.3**
Electrical behavier	- Resistance ≤ 10^6 Ω (at open circuit 100 V d.c) - Resistance > 10^6 Ω (at open circuit 500 V d.c)	**EN 1081**	Please see below table. Test results for Electrical behavier

Test results for Electrical behavier

	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 49.2 %	**11.8**	**50.0**	**13.1**	**53.0**	**11.7**	**41.0**
R2 (10^6 Ω)		**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 ≤ 10^6 Ω (at open circuit 100 V d.c)
- Resistance > 10^6 Ω (at open circuit 500 V d.c)
- R1 : Vertical risistance, R2 : Resistance to earth, R3 : Surface resistance

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.	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.
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.	

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

Test results for Sliperiness

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**	