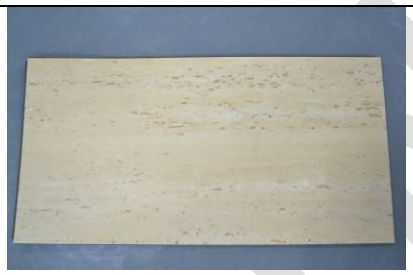
Test Report

Report Number:131120005SHJ-BP-1

Applicant Name: Taizhou Huali Plastic Co. Ltd. **Report Date: January 9, 2014**
Applicant Address: Zhangdian Industrial Zone, Jiangyan ,
Jiangsu Prov., P.R. China
Attn: Bonnie Yuan

Sample Description:
Product: PVC flooring
Model: 4mm thickness
Samples Quantity: 30 pcs
Sample ID: S120005SHJ-BP.001～030
Date Received: November 28, 2013
Date Test Conducted: From November 28, 2013 to January 9, 2014
Sample Photos:



Received sample

Tests Conducted:

Test Methods: EN 423-2002, EN 425-2002, EN 427-1994, EN 428-2000, EN 429-2000, EN 433-2000, EN 434-2000, EN 435-2000, EN 660-2-2012, EN ISO 105B02-2000, EN 71-2002 Part 3, ASTM D792-2013, ASTM D1894-2011, EN 71-2011 Part 2, EN 1081-1998 and ASTM G21-2009

Conclusion:

For details refer to attached page(s).
The conclusions of this test report may not be used as part of the requirements for Intertek product certification.
Authority to Mark must be issued for a product to become certified.

Should you have any queries about the test report, please contact:

Approved by:	**Checked by:**	**Prepared by:**
Sun Sun	Jodie Zhou	Mason Wang
Supervisor	Technical Supervisor	Testing Engineer

Test Items, Method and Results:

Sample Type	Standard	Character	Result
PVC flooring (4mm thickness)	EN 423	Resistance to chemical [1]	Not affect (Class 0)
	EN 425	Bearing castor	No visible damage on the surface after 25000 revolutions
	EN 427	Dimensions, squareness and straightness	Measured dimension (L×W): (1) 602mm×309mm Maximum deviation of Squareness: 0.15mm Maximum deviation of Straightness: 0.10mm (2) 1220mm×230.02mm Maximum deviation of Squareness: 0.15mm Maximum deviation of Straightness: 0.10mm
	EN 428	Thickness overall	Mean value: 4.05mm
	EN 429	Thickness wear layer	Mean value: 0.51mm
	EN 433	Residual indentation after static load	Mean value: 0.06mm
	EN 434	Dimensions stability after exposure to heat	Machine direction: increase 0.11% Cross-Machine direction: decrease 0.02%
		Curling after exposure to heat	Mean decrease: 0.08mm
	EN 435 (Method A)	Flexibility	No visible signs of cracking when using a 20mm mandrel
	EN 660-2	Abrasion resistance	Fv: 2.6 mm^3 per 100 revolutions Wear group: Class P
	EN ISO 105B02	Colour fastness to light	Above grade 6

Test Items, Method and Results:

Sample Type	Standard	Character	Result
PVC flooring (4mm thickness)	EN 71 (Part 3)	Toxic element test	Pass (See Appendix for detail)
	ASTM D792	Specific gravity	1.842 g/cm^3
	ASTM D1894	Coefficients of friction [2 3]	Static coefficient of friction (μs):0.583 Kinetic coefficient of friction (μk):0.262
	EN 71 (Part 2)	Flammability	Pass (See Appendix for detail)
	EN 1081 (Method B)	Electrical resistance	$>5.0\times10^9\Omega$
	ASTM G21	Fungus test [2 4]	Rating 2, Light growth (10 to 30 %)

Note:

1. The chemical substances were: Household ammonia, 10% citric acid, Vegetable oil, Coffee, Tea, Tomato sauce, Wine, Vinegar.
2. The Coefficients of friction and Fungus test were conducted at the external approved facility, located at Guangzhou.
3. The specimen thickness was 4.12mm. The testing speed was 150mm/min.
4. The test fungi were Aspergillus niger (ATCC 9642), Penicillium pinophilum (ATCC 11797), Chaetomium globosum (ATCC 6205), Gliocladium virens (ATCC 9645) and Aureobasidium pullulans (ATCC 15233). The test condition was 28°C, not less than 90% R.H. The test time was 28 days.

   Rating Observed Growth on Specimens

   0 None
   1 Traces of growth (less than 10 %)
   2 Light growth (10 to 30 %)
   3 Medium growth (30 to 60 %)
   4 Heavy growth (60 % to complete coverage)

Appendix：

1. Toxic Elements Analysis (General)

With reference to European standard on safety of toys EN 71 part 3：1994 and amendment A1：2000 and AC：2002, acid extraction method was used and toxic elements content were determined By Inductively Coupled Argon Plasma Spectrometry.

	Result (mg/kg)	Limit (mg/kg)
Sol. Barium (Ba)	<5	1000
Sol. Lead (Pb)	<5	90
Sol. Cadmium (Cd)	<5	75
Sol. Antimony (Sb)	<5	60
Sol. Selenium (Se)	<5	500
Sol. Chromium (Cr)	<5	60
Sol. Mercury (Hg)	<5	60
Sol. Arsenic (As)	<2.5	25

Remark：Sol. = Soluble
mg/kg = Milligram per kilogram

Tested component：Beige flooring with black backing.

2. Flammability Test

The submitted sample was examined unfinished product and was not subjected to the scope of the European standard of toys EN 71. However, as requested by the applicant, the submitted sample was assessed under the requirement of EN 71, and the result met the requirement of the standard.

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The End of Report