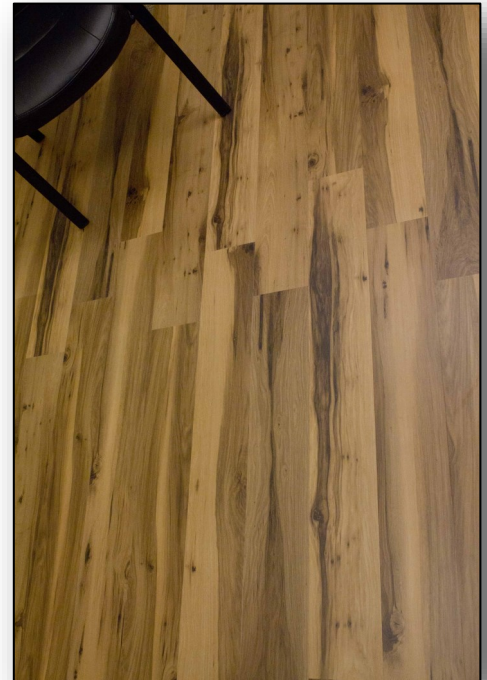


# Specifications

## Millennium Series

### Engineered Vinyl



<b>Classification</b>	ASTM F 1700-04 Class III, type A or B Solid Vinyl Floor Tile
<b>Size*</b>	6" x 48"
<b>Overall Thickness*</b>	6.5 mm
<b>Wear Layer</b>	0.508 mm / 20 mils
<b>Construction</b>	Layered plank consisting of wear layer, vinyl film, and backing made of WPC—Wood Polymer Composite.
<b>Edge</b>	4-Sided V-Grooved
<b>Standard Colors</b>	6" x 48" : 6 colors available
<b>Installation Method</b>	Float; Glue Down
<b>Wear Limited Warranty</b>	Residential: Limited Lifetime / Commercial: 10 Year
<b>Recycled Content</b>	Product contains no recycled content. 100% recyclable post-use.
<b>Packaging</b>	6" x 48": 20 sqft. Per Box : 10 Pieces Per Box : 84 Boxes on Pallet

Product Testing	Test Method	Requirement	Verdict
<b>Chemical Resistance</b>	ASTM F925-13	No more than slight change in surface dulling, Surface attack or staining	Pass
<b>Dimensional Stability</b>	ASTM F2199-09	≤ 0.40mm/276mm	Pass
<b>Resistance to Heat</b>	ASTM F1512-03 (R2013)	Δ E* shall not greater than 8.0 after 7 days exposure to 70° C	Pass
<b>Resistance to Light</b>	ASTM F1515-03 (R2008)	Δ E* shall not greater than 8.0 after a 300h exposure	Pass
<b>Squareness</b>	ASTM F2055-10	≤ 0.22mm	Pass
<b>Size</b>	ASTM F2055-10	Length: 1219.2± 1.2mm Width: 152.4± 0.17mm	Pass
<b>Thickness</b>	ASTM F386-11	A tolerance of 0.18mm Claimed value: 6.5mm	Pass
<b>Residual Indentation</b>	ASTM F1914-07 (R2011)	Average residual indentation 2% Max residual indentation 4%	Pass
<b>Formaldehyde Emission</b>	EN7171-1	None Detected E1 Rating	Pass



This product has been certified to meet the requirements of the flooring products certification program for indoor air quality.

For product information, installation instructions and more, visit [www.knoasflooring.com](http://www.knoasflooring.com)

# Test Report

## Millennium Series Engineered Vinyl

**Sample Description:** **Report Number: 140818010TYU-KN-1**  
**Product: WPC Flooring**  
**Model: 1 Model**  
**Samples Quantity: 30 Pieces** **Test Conducted:**  
**Sample ID: S140818010TYU-001~030** **Test Methods: Please see the tables below.**

**Table 1 Test results based on ASTM F 1700-04 Class III Standard Specification for Vinyl Floor Tile**

Test Item	Test Method	Requirement	Test Result	Verdict
Chemical Resistance	ASTM F925-13	No more than slight change in surface dulling, Surface attack or staining	See Appendix B for details	Pass
Resistance to Heat	ASTM F1512-03 (R2013)	$\Delta E^*$ shall not greater than 8.0 after 7 days exposure to 70° C	$\Delta E^* = 0.41$	Pass
Resistance to Light	ASTM F1515-03 (R2008)	$\Delta E^*$ shall not greater than 8.0 after a 300h exposure	$\Delta E^* = 3.38$	Pass
Squareness	ASTM F2055-10	$\leq 0.25\text{mm}$	Short edge Max: 0.05mm Long edge Max: 0.05mm	Pass
Size	ASTM F2055-10	Length: $1219.2 \pm 1.2\text{mm}$ Width: $152.40 \pm 0.17\text{mm}$	Length: 1219.2mm Width: 152.40mm	Pass
Thickness	ASTM F386-11	A tolerance of 0.18mm Claimed value: 6.5mm	Average: 6.5mm Min: 6.3mm Max: 6.6mm	Pass
Residual Indentation	ASTM F1914-07 (R2011)	Average residual indentation 2% Max residual indentation 4%	Average: 4.8% Max: 6.3%	Pass
Dimensional Stability	ASTM F2199-09	$\leq 0.40\text{mm}/276\text{mm}$	MD Max: $-0.31/200\text{mm}$	Pass

Note:

- Resistance to light was conducted at the external approved/qualified facility, located at [Shanghai].



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# Test Report

## Millennium Series Engineered Vinyl

Table 2 Test results based on other standards

Test Item	Test Method	Test Result
Thickness of wear layer	ASTM F410-08(R2013)	0.508 mm
Tensile Strength	ASTM D638-2010	7.6 Mpa
Abrasion Resistance	ASTM D4040-2010	Wear Index: 13
Peel Strength	ASTM D903-98(R2010)	1.79 N/mm
Indentation	ASTM F1914-07(R2011)	1 min: 0.05mm 10 min: 0.08mm
Density	ASTM D6111-13a	1983 kg/m <sup>3</sup>
Specular Gloss	ASTM D523-14	10.7
Static Coefficient of Friction	ASTM C1028-07 <sup>e1</sup>	Dry: 0.88 Wet: 0.69
Castor Chair Resistance	NALFA/ANSI LF-11	No visible damage after 25000 revolutions
Static Load	ASTM F970-07(R2011)	Applied Load: 250lb Residual indentation: 0.03mm
Internal bond strength and thickness swell after repeated wetting	ASTM D7519-11	Internal bond strength: 2.25Mpa Moisture Content: Before Submersion: 0.01% After Submersion: 0.04% Thickness swell: 0.49% Water Absorption: 0.04%
Resistance To Impact	ASTM F1265-03a(R2013)	No Crack

Note:

1. Wear index: 1000 times the loss in weight in milligrams per cycle. Total revolution is 1000.

# Test Report

## Millennium Series Engineered Vinyl

### Appendix B: Test result of Resistance to chemical

Reagent	Test Method Test Result		
	Surface Attack	Color Change	Surface Dulling
White Vinegar (5% acetic acid)	0	0	0
Rubbing Alcohol (70% isopropyl alcohol)	0	0	0
White Mineral Oil (medicinal grade)	0	0	0
Sodium hydroxide solution (5% NaOH)	0	0	0
Hydrochloric Acid Solution (5% HCl)	0	0	0
Sulfuric Acid Solution (5% H <sub>2</sub> SO <sub>4</sub> )	0	0	0
Household Ammonia Solution (5% NH <sub>4</sub> OH)	0	0	0
Household Bleach (5.25% NaOCl)	0	0	0
Olive Oil (light)	0	0	0
Kerosene (K1)	0	0	0
Unleaded Gasoline (regular grade)	0	0	0
Phenol (5% active phenol)	0	0	0

According to ASTM F925-13, rating 0-3 represents:

0 = no change, 1 = slight change; 2 = moderate change; 3 = severe change

Surface Dulling—Indicating that the specimen suffered from a loss of gloss,

Color Change—Indicating that the specimen suffered discoloration or bleaching, or both, and

Surface Attack—Indicating that the specimen suffered surface damage such as softening, warping, swelling, blistering, peeling, raised or rough area.