Report No.: **0154221036d 001**

Client: **TAIZHOU HUALI PLASTIC CO.,LTD**
Zhangdian Industrial Zone,Jiangyan City,Jiangsu Prov.,P.R.China

Test item(s): Rigid LVT Flooring

Identification/ Model No(s): N/A

Sample Receiving date: 2017-01-05

Testing Period: 2017-01-05 – 2017-02-16

Test specification:

Customer's requirement:
1. Volatile Organic Compounds (VOC)

Test result:

Please refer to page 3 - 4

Remark: all test data refer to 0154221036c 001

For and on behalf of
TÜV Rheinland (Shanghai) Co., Ltd.

2017-02-20 Jet Lee / Department Manager

Date *Name/Position*

Test result is drawn according to the kind and extent of tests performed.
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.

Test Report No.: 0154221036d 001

Material list:

Item: Rigid LVT Flooring

Material No.	Material	Color	Location
M001	Whole product	brown	Refer to photo

Test method

ISO 16000-3:2011	Indoor air – Part 3: Determination of formaldehyde and other carbonyl compounds in indoor air and test chamber air – Active sampling method
ISO 16000-6:2004	Indoor air – Part 6: Determination of volatile organic compounds in indoor and test chamber air by active sampling on Tenax TA® sorbent, thermal desorption and gas chromatography using MS/FID
ISO 16000-9:2006	Indoor air – Part 9: Determination of the emission of volatile organic compounds from building products and furnishing – Emission test chamber method

Test chamber conditions

Test chamber:	Corresponding to ISO 16000-9
Test chamber volume:	1 m^3
Temperature of supply air:	23 ℃ ± 2 ℃
Relative humidity of supply air:	50 % ± 5 %
Exchange of air:	0.5 h^{-1}
Loading factor:	0.4 m^2/m^3
Start of sampling:	after 28 days balance in chamber

Test Report No.: 0154221036d 001

Results 1: Volatile organic compounds (VOC)[1)] emission

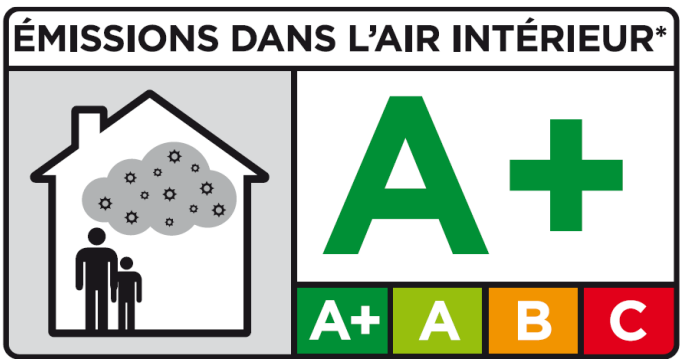
The emission of the substances are classified according to a scale with 4 classes ranging from A+ to C, A+ indicating a very low emission level and C a high level of emission. The emission level is indicated by the exposure concentration in $\mu g.m^{-3}$. The results of the tested sample in 28 days are shown below in table 1.

Table 1. Results of 28 days:

Parameters	CAS No.	Limit values of emission classes ($\mu g/m^3$)				Concentrations after 28 days ($\mu g/m^3$)	Emission Classes
		A+	A	B	C		
Formaldehyde	50-00-0	< 10	< 60	< 120	> 120	n.d. [3)]	A+
Acetaldehyde	75-07-0	< 200	< 300	< 400	> 400	n.d. [3)]	A+
Toluol	108-88-3	< 300	< 450	< 600	> 600	n.d. [3)]	A+
Tetrachlorethene	127-18-4	< 250	< 350	< 500	> 500	n.d. [3)]	A+
Xylene	1330-20-7	< 200	< 300	< 400	> 400	n.d. [3)]	A+
1,2,4-Trimethylbenzene	95-63-6	< 1000	< 1500	< 2000	> 2000	n.d. [3)]	A+
1,4-Dichlorbenzene	106-46-7	< 60	< 90	< 120	> 120	n.d. [3)]	A+
Ethylbenzene	100-41-4	< 750	< 1000	< 1500	> 1500	n.d. [3)]	A+
2-Butoxyethanol	111-76-2	< 1000	< 1500	< 2000	> 2000	n.d. [3)]	A+
Styrene	100-42-5	< 250	< 350	< 500	> 500	n.d. [3)]	A+
TVOC [2)]	--	< 1000	< 1500	< 2000	> 2000	8	A+

[1] VOC = Volatile organic compounds

[2] TVOC = Total volatile organic compounds (C_6 – C_{16})



*Statement on level of emission of volatile substances in indoor air posing a toxic threat during inhaling – on a scale from A+ (very low-emission) to C (high-emission)

Test Report No.: 0154221036d 001

Results 2: Emission of CMR substances

Only the concentration of the following CMR substances have been qualified :

Parameter	CAS No.	Legal limit (µg/m^3)	Concentration (µg/m^3)
Trichloroethylene	79-01-6	<1	n.d. [3)]
Benzene	71-43-2	<1	n.d. [3)]
Bis phtalate (2-ethylhexyl) (DEHP)	117-81-7	<1	n.d. [3)]
Dibutyl phtalate (DBP)	84-74-2	<1	n.d. [3)]

[3]n.d. = No detected. Limit of quantification 1 µg/m³

Remarks:

The results are semiquantitative calculated with n-Hexadecane (5 µg/ml) for the calculation of the various VOC concentrations. No differences in response factors and desorption were considered. Only VOC compounds are included with a concentration of > 1 µg/m^3.

Test Report No.: 0154221036d 001

Sample photos

- END -