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中国认可
国际互认
检测
TESTING
CNAS L0811

检 验 检 测 报 告

TEST REPORT

No. ZX-WJJ21-0489

样品名称
Product 坚弗涂料地板

委托单位
Customer 上海坚弗特种涂料有限公司

检验类别
Type of Test Commission

北京市产品质量监督检验院
国家家具及室内环境质量监督检验中心
Beijing Products Quality Supervision and Inspection Institute
National Center for Quality Supervision & Inspection of
Furniture and Indoor Environment

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Test Report

No. ZX-WJJ21-0489

产品信息 **Product Sample information**	产品名称 Product name	坚弗涂料地板
	产品类别 Product category	/
	规格及数量 The size(L×W×T) mm / Quantity（piece）	4（片）pcs
	生产日期 Date sample manufactured	2021 年 5 月 8 日
	产品识别码 Sample Tracking ID	/
	抽样日期 Date sample collected	/
	到样日期 Date sample received by lab	2021.5.12
	收样状态 Condition of received sample	完好 intact
	样品编号 Lab sample tracking number	ZX-WJJ21-0489
	调质日期 Conditioning start Date & duration	240±5 小时（2021 年 5 月 13 日 9 时至 2021 年 5 月 23 日 9 时）
	舱内测试日期 Chamber test start Date & duration	2021 年 5 月 23 日 9 时至 2021 年 5 月 27 日 12 时
	检验日期 Total test start Date & duration	2021 年 5 月 13 日 9 时至 2021 年 5 月 27 日 12 时
委托单位信息 **Customer information**	名称 Manufacturer or organization	上海坚弗特种涂料有限公司
	地址 Address	/
	联系人/职位 Contact name/ Title	管静燕 Guang Jingyan/-
	联系电话 Phone Number	/
生产单位信息 **Manufacturer Information**	名称 Manufacturer	上海坚弗特种涂料有限公司
	地址 Manufacturing Location	/
	联系人及电话 Contact name/ Phone Number	管静燕 Guang Jingyan/-
包装运输 **Shipping Information**	包装人 Packed By	/
	封样方式 Sealed type	/
	运输日期 Shipping date	/
	承运单位 Carrier	/
	运单号码 Air Number	/
检验依据 **Standards**	检验项目 Test Projects	VOC Emission
	测试方法 Test method	CDPH/EHLB Standard Method V1.2
	评价标准 Acceptance criteria	CDPH/EHLB Standard Method V1.2
	模拟场景 Modeling scenario	Office & Classroom
	产品类型 Product type	/
检验结果 **Test results**	检验结果详见附页。 Test results see attachment.	
备注 **Remarks**	/	

检验检测专用章(Test stamp)

签发日期：2021 年 06 月 10 日

Date of issue: Jun. 10th ,2021

批准：Approved by 审核：Inspected by 编制：Compiled by

检 验 检 测 报 告

Test Report

测试方法 Test Methods

The product sample was tested for emissions of VOCs following California Department of Public Health Services "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chamber Version 1.2-California Specification 01350".The chamber test method is conducted following the guidance of ASTM Standard D 5116-06 and ISO 16000-9:2011. The analytical methods for formaldehyde, acetaldehyde based on ASTM Standard D5197-09 .

测试条件 Test conditions

The sample was conditioned for 10 days in the same test chamber where the analysis was performed during 96h.The same conditions during conditioning and test were kept and described as below:

参数 parameter	符号 Symbol	单位 Units	数值 Value
面积 Test specimen expose area	A_c	m^2	0.086
舱体积 Chamber Volume	V_c	m^3	0.120
承载率 Loading ratio	L_c	m^2/m^3	0.720
换气率 Air change rate	a_c	h^{-1}	（1.0±0.1）
进气流量 Inlet flow rate	Q	m^3/h	0.120
表面风速 Area specific flow rate	q_A	m/h	1.388
温度 Temperature	T	℃	（23±0.5）
相对湿度 Relative humidity	RH	%	（50±5）

试件制备 Test Specimen Preparation

Assembled several flooring planks, cut a 29.6 cm by 29.2 cm specimen from the assembly, and used aluminum tape to tape the specimen to a stainless steel plate,sealing all of the edges and the bottom surface.The test results presented herein are specific to this item.

样品采集方法 Sampling conditions

The product specimen was prepared from the supplied product sample and was placed directly into the chamber,and maintained at controlled conditions of air flow rate,temperature and relative humidity for ten days, in the same test chamber where the analysis was performed during 96h,so at 24h,48h and 96h after initiating the chamber test(without counting the previous 10 days conditioning).Sampling conditions are represented as below:

采样条件 Sampling condition	VOC	Aldehydes（C_1-C_6）
数量 Number of sampled tubes	2	2
采样管类型 Sorbent type	Tenax TA (backed by a carbonaceous sorbent)	DNPH
采集时间 Sampling duration	30min	60min
采集速率 Sampling air flow rate	200mL/min	1.5L/min
采样体积 Sampled air volume	6.0L	90L

分析设备 equipment

Aldehydes（C_1-C_6）:HPLC-SPD-M20A ZX-151
VOC :TD-GC/MS ZX-214 ZX-Z-29

释放因子的计算 Emission Factors

Emission factors were calculated from chamber concentrations then by using the emission factors the estimated building concentrations were calculated.

Emission factor (EF) in μg $m^{-2}h^{-1}$ for a chemical substance in a chamber test is calculated using the equation below:

$EF=(Q(C-C_0))/Ac$

Where C is the chamber concentration of the substance (μ g/m^3) and c0 is the corresponding substrate or chamber blank concentration (μ g/m^3).The other parameters are defined in test conditions.

估算浓度 Estimated Building Concentrations

建立模型的参数 Modeling Parameters for building Products:

CDPH/EHLB/Standard Method Version 1.2 describes the modeling procedures and parameters for estimating the impact of VOC emissions from a building product on indoor air concentrations in a standard classroom and a standard office space.The dimensions and ventilation of the spaces and the exposed surface areas of major materials are prescribed.The modeling scenario(s) and parameters applicable to this test are list below:

参数 Parameter	符号 Symbol	单位 Units	数值 Value	
			Classroom	Office
Product exposed area	A_B	m^2	89.2	11.1
Outdoor air (OA) flow rate	Q_B	m^3/h	191	20.7
Area-specific air flow rate	q_A	m/h	2.14	1.86

The estimated building concentration,C_{Bi}(μ g/m^3),of a target VOC is calculated using the equation below:

$C_{Bi}=(EF\times A_B)/Q_B=EF/(Q_B/A_B)=EF/q_A$

VOC 测试结果 VOC Emission Test Results

表 1 24h 和 48h 环境舱内有害物质浓度和释放因子
Table 1 Chamber concentrations and emission factors(24h and 48h)

参数名称 Compound Name	CAS 号 CAS No.	浓度（μg/m^3） Chamber Concentration		释放因子（μg $m^{-2}h^{-1}$） Emission Factor	
		24h	48h	24h	48h
TVOC	-	51.32	69.55	71.25	96.56
甲醛 Formaldehyde	50-00-0	2.93	2.82	4.07	3.92

VOC 测试结果 VOC Emission Test Results, Continued

表 2.1 96h 舱内目标化合物浓度及释放因子

Table 2.1 Chamber concentrations of target VOC and emission factors (96h)

化合物名称 Compound Name	CAS 号 CAS No.	浓度（$\mu g/m^3$） ChamberConcentration	释放因子（$\mu g\ m^{-2}h^{-1}$） Emission Factor	备注 Remark
甲醛 Formaldehyde	50-00-0	2.18	3.03	/
四氯化碳 Carbon tetrachloride	56-23-5	LQ	/	/
异丙醇 Isopropanol	67-63-0	LQ	/	/
三氯甲烷 Chloroform	67-66-3	LQ	/	/
N,N-二甲基甲酰胺 Dimethylformamide(N,N-)	68-12-2	LQ	/	/
苯 Benzene	71-43-2	LQ	/	/
三氯乙烷 Methyl chloroform	71-55-6	LQ	/	/
乙醛 Acetaldehyde	75-07-0	LQ	/	/
二氯甲烷 Methylene chloride	75-09-2	LQ	/	/
二硫化碳 Carbon disulfide	75-15-0	LQ	/	/
1,1-二氯乙烯 Dichloroethylene(1,1)	75-35-4	LQ	/	/
异佛尔酮 Isophorone	78-59-1	LQ	/	/
三氯乙烯 Trichloroethylene	79-01-6	LQ	/	/
萘 Naphthalene	91-20-3	LQ	/	/
乙苯 Ethylbenzene	100-41-4	LQ	/	/
苯乙烯 Styrene	100-42-5	LQ	/	/
1,4-二氯苯 Dichlorobenzene(1,4-)	106-46-7	LQ	/	/
环氧氯丙烷 Epichlorohydrin	106-89-8	LQ	/	/
乙二醇 Ethylene glycol	107-21-1	LQ	/	/
丙二醇甲醚 Propylene glycol monomethyl ether	107-98-2	LQ	/	/
乙酸乙烯酯 Vinyl acetate	108-05-4	LQ	/	/
甲苯 Toluene	108-88-3	LQ	/	/
氯苯 Chlorobenzene	108-90-7	LQ	/	/
苯酚 Phenol	108-95-2	LQ	/	/
乙二醇单甲醚 Ethylene glycol monomethyl ether	109-86-4	LQ	/	/

VOC 测试结果 VOC Emission Test Results, Continued

表 2.1 96h 舱内目标化合物浓度及释放因子

Table 2.1 Chamber concentrations of target VOC and emission factors (96h)

化合物名称 Compound Name	CAS 号 CAS No.	浓度（μg/m³） ChamberConcentration	释放因子（μg m⁻²h⁻¹） Emission Factor	备注 Remark
乙二醇甲醚乙酸酯 Ethylene glycol monomethyl ether acetate	110-49-6	LQ	/	/
正己烷 Hexane(n-)	110-54-3	LQ	/	/
乙二醇单乙醚 Ethylene glycol monoethyl ether	110-80-5	LQ	/	/
乙二醇乙醚乙酸酯 Ethylene glycol monoethyl ether acetate	111-15-9	LQ	/	/
二噁烷 Dioxane(1,4-)	123-91-1	LQ	/	/
四氯乙烯 Tetrachloroethylene	127-18-4	LQ	/	/
甲基叔丁基醚 Methyl t-butyl ether	1634-04-4	LQ	/	/
二甲苯（间，邻，对二甲苯混合） (m-,o-,p-xylene combined)	108-38-3, 95-47-6, 106-42-3	LQ	/	/

表 2.2 96h 舱内其他化合物浓度及释放因子

Table 2.2 Chamber concentrations of others VOC and emission factors (96h)

化合物名称 Compound Name	CAS 号 CAS No.	浓度（μg/m³） ChamberConcentration	释放因子（μg m⁻²h⁻¹） Emission Factor	备注 Remark
乙酸 Acetic acid	64-19-7	3.14	4.36	/
不确定组分 Unidentified Compound	/	37.52	52.09	/
总挥发性有机化合物 TVOC	/	40.66	56.45	/
备注 remarks：	单个 VOC 检出限为 2μg /m³，“LQ”表示该项目测试结果小于检出限。 Lower limit of quantitation (LQ) or reporting limit for individual VOCs is 2 μg/m³, LQ indicates test result is below its lower limit of quantitation.			

VOC 测试结果 VOC Emission Test Results, Continued

表 3.1 目标化合物估算浓度结果评价

Table 3.1 Concentration estimation and results evaluation of target VOC

化合物名称 Compound Name	CAS 号 CAS No.	允许浓度 Allowable Value（μg/m³）	教室估算结果 Standard classroom Estimated Value（μg/m³）	教室估算结果判定 Conclusions of Standard classroom Estimated Value (Pass/Fail)	私人办公室估算结果 Standard office Estimated Value（μg/m³）	私人办室估算结果判定 Conclusions of Standard office Estimated Value (Pass/Fail)
甲醛 Formaldehyde	50-00-0	9	1.4	符合 Pass	1.6	符合 Pass
四氯化碳 Carbon tetrachloride	56-23-5	20	/	/	/	/
异丙醇 Isopropanol	67-63-0	3500	/	/	/	/
三氯甲烷 Chloroform	67-66-3	150	/	/	/	/
N,N-二甲基甲酰胺 Dimethylformamide(N,N-)	68-12-2	40	/	/	/	/
苯 Benzene	71-43-2	1.5	/	/	/	/
三氯乙烷 Methyl chloroform	71-55-6	500	/	/	/	/
乙醛 Acetaldehyde	75-07-0	70	/	/	/	/
二氯甲烷 Methylene chloride	75-09-2	200	/	/	/	/
二硫化碳 Carbon disulfide	75-15-0	400	/	/	/	/
1,1-二氯乙烯 Dichloroethylene(1,1)	75-35-4	35	/	/	/	/
异佛尔酮 Isophorone	78-59-1	1000	/	/	/	/
三氯乙烯 Trichloroethylene	79-01-6	300	/	/	/	/
萘 Naphthalene	91-20-3	4.5	/	/	/	/
乙苯 Ethylbenzene	100-41-4	1000	/	/	/	/
苯乙烯 Styrene	100-42-5	450	/	/	/	/
1,4-二氯苯 Dichlorobenzene(1,4-)	106-46-7	400	/	/	/	/
环氧氯丙烷 Epichlorohydrin	106-89-8	1.5	/	/	/	/
乙二醇 Ethylene glycol	107-21-1	200	/	/	/	/
丙二醇甲醚 Propylene glycol monomethyl ether	107-98-2	3500	/	/	/	/
乙酸乙烯酯 Vinyl acetate	108-05-4	100	/	/	/	/
甲苯 Toluene	108-88-3	150	/	/	/	/
氯苯 Chlorobenzene	108-90-7	500	/	/	/	/
苯酚 Phenol	108-95-2	100	/	/	/	/
乙二醇单甲醚 Ethylene glycol monomethyl ether	109-86-4	30	/	/	/	/

VOC 测试结果 VOC Emission Test Results, Continued

表 3.1 目标化合物估算浓度结果评价

Table 3.1 Concentration estimation and results evaluation of target VOC

化合物名称 Compound Name	CAS 号 CAS No.	允许浓度 Allowable Value（μg/m³）	教室估算结果 Standard classroom Estimated Value（μg/m³）	教室估算结果判定 Conclusions of Standard classroom Estimated Value (Pass/Fail)	私人办公室估算结果 Standard office Estimated Value（μg/m³）	私人办室估算结果判定 Conclusions of Standard office Estimated Value (Pass/Fail)
乙二醇甲醚乙酸酯 Ethylene glycol monomethyl ether acetate	110-49-6	45	/	/	/	/
正己烷 Hexane(n-)	110-54-3	3500	/	/	/	/
乙二醇单乙醚 Ethylene glycol monoethyl ether	110-80-5	35	/	/	/	/
乙二醇乙醚乙酸酯 Ethylene glycol monoethyl ether acetate	111-15-9	150	/	/	/	/
二噁烷 Dioxane(1,4-)	123-91-1	1500	/	/	/	/
四氯乙烯 Tetrachloroethylene	127-18-4	17.5	/	/	/	/
甲基叔丁基醚 Methyl t-butyl ether	1634-04-4	4000	/	/	/	/
二甲苯（间，邻，对二甲苯混合）(m-,o-,p-xylene combined)	108-38-3, 95-47-6, 106-42-3	350	/	/	/	/

表 3.2 其他化合物估算浓度结果评价

Table 3.2 Concentration estimation and results evaluation of others VOC

化合物名称 Compound Name	CAS 号 CAS No.	允许浓度 Allowable Value（μg/m³）	教室估算结果 Standard classroom Estimated Value（μg/m³）	教室估算结果判定 Conclusions of Standard classroom Estimated Value (Pass/Fail)	私人办公室估算结果 Standard office Estimated Value（μg/m³）	私人办室估算结果判定 Conclusions of Standard office Estimated Value (Pass/Fail)
乙酸 Acetic acid	64-19-7	/	2.0	/	2.3	/
不确定组分 Unidentified Compound	/	/	24.3	/	28.0	/
总挥发性有机化合物 TVOC	/	/	26.4	/	30.3	/

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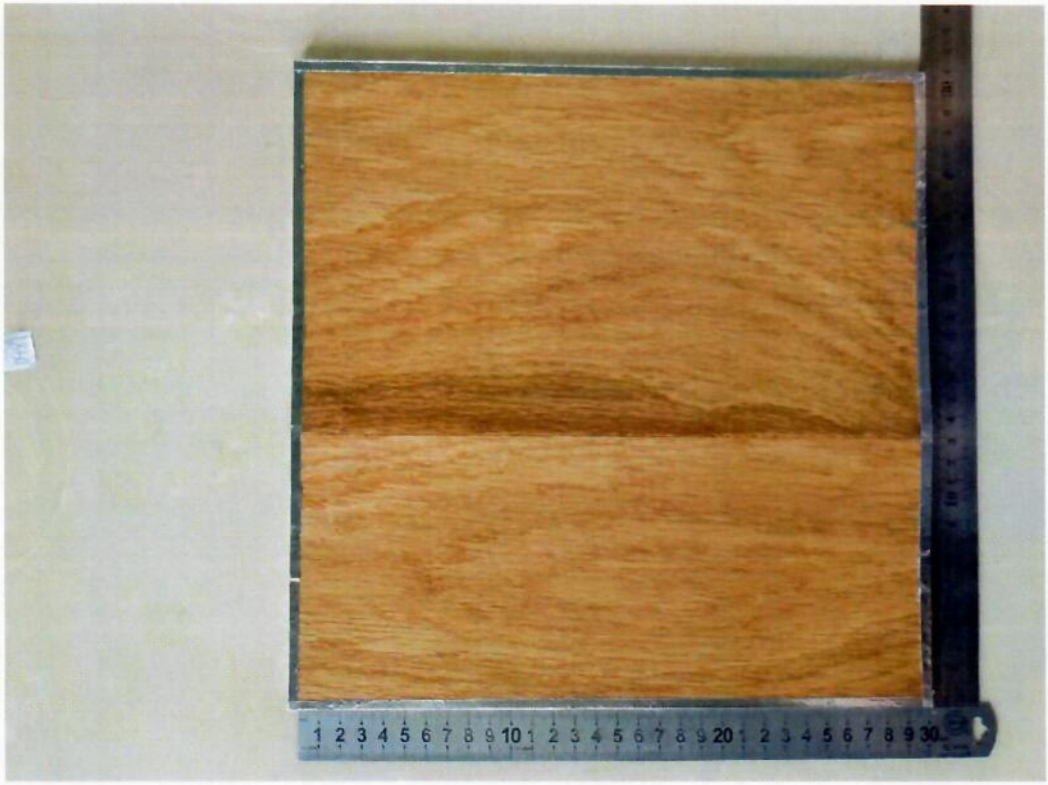
检验检测报告附图附照专用表

Specific Chart Of Test Report figure or photo



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