

长兴合成树脂(常熟)有限公司/长兴化学工业股份有限公司(路竹厂)

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此报告是报告号为 **AJD201204606** 的中文译本,如中英文有差异,概以英文为准。

以下测试样品为客户提供并确认

样品描述: 2901 PTI 阻燃树脂玻璃钢板

成分: 阻燃树脂玻璃钢板

厚度: 4.0±0.2MM

最终用途: 坐垫框架, 墙壁和天花板, 内衬和仪表板, 座椅和厕所侧板, 隔板, 托架, 置物架

附加信息: 7层 400g/m² 玻纤布

2 测试要求:

根据 NFPA 130:2010 固定导轨客运铁路系统测试试样的燃烧和烟气释放性能, 选定的测试方法如下:

1. ASTM E662:2009 固体材料产烟光密度的标准测试方法
2. ASTM E162:2011 用辐射热源评定材料表面燃烧性能的试验方法

测试结果: -- 参见数据附表 --

测试周期:

样品收到日期 : 2012年8月13日

测试执行时间 : 2012年8月13日至2012年8月17日

通标标准技术服务有限公司

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邹石龙
技术主管

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1. ASTM E662 烟气释放

I. 测试方法

本测试按照 ASTM E662:2009 固体材料的产烟密度标准测试方法进行。

II. 样品描述

描述	2901 PTI 阻燃树脂玻璃钢板
颜色	深褐色
厚度 / 尺寸	大约 4mm / 76×76mm

测试前预处理条件	测试前, 样品在60±3℃干燥48小时然后23±3℃, 50±5%情况下恒温恒湿 处理至恒重
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暴露辐射热流	2.50+/-0.05 W/cm ²
测试面	任意面

III. 测试结果

1) 有焰模式

	测试样品			燃烧的滴落物或燃烧碎片	平均烟密度
	#1	#2	#3		
实验箱体温度(℃)	35	35	35	无	
$D_{S\ 1.5}$	0.1	0.1	0.1		0.1
$D_{S\ 4.0}$	13.4	17.4	15.6		15.5
D_m	140.2	105.3	131.2		125.6
t_{D_m} (分钟)	829	869	857		
$Dm(corr)$	135.5	99.6	126.1		120.4
观察现象	白色的烟				

2) 无焰模式

	测试样品			燃烧的滴落物或燃烧碎片	平均烟密度
	#1	#2	#3		
实验箱体温度(℃)	35	35	35	无	
$D_{S\ 1.5}$	0.8	0.6	0.7		0.7
$D_{S\ 4.0}$	5.7	4.1	5.1		5.0
D_m	53.5	77.5	63.8		64.9
t_{D_m} (分钟)	1200	1200	1200		
$Dm(corr)$	52.2	71.0	59.2		60.8
观察现象	白色的烟				

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备注:

$D_{S 1.5}$ = 1.5 分钟时的烟密度;

$D_{S 4.0}$ = 4.0 分钟时的烟密度;

D_m = 最大烟密度值;

$Dm(\text{corr}) = D_m$ 修正值, $Dm(\text{corr}) = D_m - D_c$

t_{D_m} = 出现最大值时间

2. ASTM E162 表面燃烧性能

I. 测试方法

本测试按照 ASTM E162:2011 用辐射热源评定材料表面燃烧性能的试验方法进行。

II. 样品信息

描述	2901 PTI 阻燃树脂玻璃钢板
颜色 / 厚度	深褐色 / 大约4 mm
样品尺寸	457×152mm

III. 测试详情

处理条件:

测试前, 试样在 $60\pm3^\circ\text{C}$ 干燥 24 小时后, 继续在温度为 $23\pm3^\circ\text{C}$, 相对湿度为 $50\pm5\%$ 的环境条件下达到质量平衡。

计算因子:

$C=5.7$, $\beta=30(^\circ\text{C}/\text{kW})$

IV. 测试结果

试样序号	火焰传播 (秒)					烟道净温升 ($^\circ\text{C}$)	Q	Fs	Is	燃烧的滴落 (是/否)
	3.0 "	6.0 "	9.0 "	12.0 "	15.0 "					
1	124	N/R	N/R	N/R	N/R	12	2.28	1.48	3.37	NO
2	128	N/R	N/R	N/R	N/R	14	2.66	1.47	4.13	NO
3	140	N/R	N/R	N/R	N/R	13	2.47	1.43	3.53	NO
4	120	N/R	N/R	N/R	N/R	12	2.28	1.50	3.42	NO
平均值									3.61	-

其中, N/R---没有达到

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试验现象

试样序号	试验出现持续火焰 (秒)	所有火焰熄灭 (秒)	测试结束 (分: 秒)	样品是否完全烧毁 (是/否)
1	120	141	15 :00	NO
2	126	149	15 :00	NO
3	138	151	15 :00	NO
4	118	135	15 :00	NO

备注: NA---不适合

测试结果: 辐射板指数平均值, $I_s = 5.06$

NFPA 130, 表 8.4.1对于材料和材料装配性能要求

类别	材料功能	测试方法	性能要求
其它机车组件	座椅及床的框架、墙体及天花板内层及面板、马桶座圈、托盘及其他桌子、隔离板、架子、不透明的挡风玻璃、易燃标示、弹簧盒盖、房顶外层覆盖物、连接管、外壳、非金属边缘、及元件盒子和盖子 ^{a, b, i, j, k}	ASTM E 162	$I_s \leq 35$
		ASTM E 662	$D_s(1.5) \leq 100$ $D_s(4.0) \leq 200$

- a: 测试材料表面可燃性试验时, 不应出现燃烧的滴落物。
- b: ASTM E662烟雾释放的最大测试限值(特定光密度)基于有焰和无焰这两种模式。
- i: 如果易燃的操作和安全标识的重量不超过500g(1.1lb)且总得区域不超过1平方英尺每单位英尺车长, 那么其不需要符合火焰传播和烟释放要求。
- j: 如果当最终使用时任一单个小部件的表面区域面积小于100cm² (16in.²) 且对于材料使用位置、数量、材料的易燃性及促进火焰蔓延的弱点进行过适当的火灾分析。那么, 用于制作各种非连续性的小零部件(如把手、转轴、扣件、垫片、垫圈及小的电气零部件)的材料, 其最终的使用结构并不能有效助长火焰蔓延, 那么将免除对其燃烧和烟气释放性能要求。
- k: 用于墙壁天花板覆盖的毛毯类应该按照ASTM E162和ASTM E662方法测试, 并且分别符合各自的标准要求。
如 $I_s \leq 35$, $D_s(1.5) \leq 100$, 且 $D_s(4.0) \leq 200$ 。(见 8.4.1.1、8.4.1.2.)

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结果评述:

测试试样符合NFPA130:2010 表8.4.1规定的上述特定要求。

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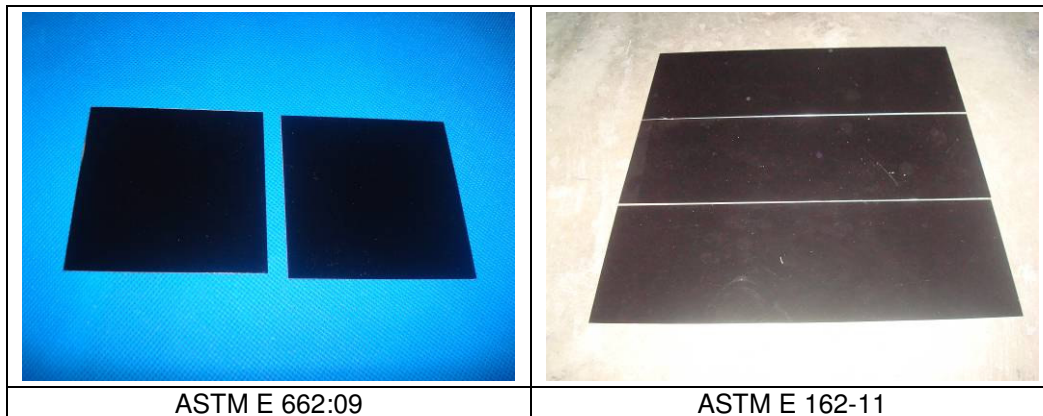
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