

编号: 2007-CA03-218
Number: 2007-CA03-218

检测报告

Test report

产品名称: 热塑料 PE 粉末涂料
Name of product: Thermoplastiic PE powder coating
型号规格: FPE-1
Model: FPE-1
委托单位: 廊坊市富泉塑粉有限公司
Client: Fuquan Plastic Powder Co., Ltd.
检测类别: 送样检测
Check category : sample check
批准日期: 2008年04月30日
Approved date: April 30th,2008

国家交通安全设施质量监测检验中心
National Traffic Safety Facilities Quality Monitoring and Inspection Center
(交通部交通工程监理监测中心)
Traffic Engineering Supervision Monitoring Center

国家交通安全设施质量监测检验中心
National Traffic Safety Facilities Quality Monitoring and Inspection Center
(交通部交通工程监理监测中心)
Traffic Engineering Supervision Monitoring Center

检测报告
Test Report

编号: 2007-CA03-218

共 4 页 第 1 页

No.: 2007-CA03-218

产品名称 Name of product	热塑料 PE 粉末涂料 Thermoplastic PE powder coating	型号规格 Model	FPE-1
委托单位 Client	廊坊市富泉塑份有限公司 Fuquan Plastic Powder Co., Ltd.	检测类别 Check category	送样检测 sample check
生产单位 Production unit	廊坊市富泉塑份有限公司 Fuquan Plastic Powder Co., Ltd.	生产日期 Production date	/
送样者 Sample delivered by	郭民华 Guo Minghua	到样时间 Arrive date	2007 年 08 月 20 日 August 20 th ,2008
抽样者 Sampler	/	抽样时间 Sampling date	/
抽样地点 Sampling place	/	抽样基数 Sampling base	/
检测日期 Testing date	2007 年 08 月 20 日~2008 年 04 月 30 日 From August 20 th ,2008 to April 30 th ,2008	样品数量 Quantity of sample	绿色试块 50 块: 绿色粉末 1kg 50 green test blocks and 1kg of green powder
检测项目 Test item	粉末性能 (外观质量、挥发物含量、表现密度等 5 项)、涂层性能 (外观质量、光泽度、涂层附着性能等 15 项) 及耐候性能 (变色等级、粉化等级、拉伸强保留率等 8 项) 三部分。 Three parts :Powder property(5 items such as appearance quality, volatile content and apparent density); Coating property(15 items such as appearance quality, lustrousness and Coating adhesion) Weathering Performance(8 items such as Color change level, Powder grade and Drawing strength retention rate)		
检测依据 Test standard	交通行业标准 JT/T600.2-2004《公路用防腐蚀粉末涂料及涂层 第 2 部分: 热塑性聚乙烯粉末涂料及涂层》 Transportation Industry Standard JT/T600.2-2004 <i>Highway used anti-corrosion powder coatings and coatings Part 2: Thermoplastic polyethylene powder coatings and coatings</i>		
检测环境 Test environment	温度: 23℃ 湿度: 50%R.H Temperature: 23℃ Humidity: 50%R.H		
检测结论 Test conclusion	廊坊市富泉塑份有限公司送检的 FPE-1 热塑性 PE 粉末涂料样品, 经本中心检测, 粉末性能 (外观质量、挥发物含量、表现密度等 5 项)、涂层性能 (外观质量、光泽度、		

涂层附着性能等 15 项) 及耐候性能 (变色等级、粉化等级、拉伸强保留率等 8 项) 三部分技术指标符合交通行业标准 JT/T600.2-2004 《公路用防腐蚀粉末涂料及涂层 第 2 部分: 热塑性聚乙烯粉末涂料及涂层》的有关规定。

FPE-1 Thermoplastic PE powder coating sample that delivered by Langfang Fuquan molding powder com,led pass the test of Powder property, Coating property and Weathering Performance. Specifications conform transportation industry standard JT/T600.2-2004 *Highway used anti-corrosion powder coatings and coatings Part 2: Thermoplastic polyethylene powder coatings and coatings*

报告批准日期: 2008 年 04 月 10 日

Approved date: April 10th,2008

报告有效日期: 2012 年 04 月 29 号

Effective date: April 29th,2012

国家交通安全设施质量监测检验中心
National Traffic Safety Facilities Quality Monitoring and Inspection Center
(交通部交通工程监理监测中心)
Traffic Engineering Supervision Monitoring Center

检测报告
Test Report

编号: 2007-CA03-218
Number: 2007-CA03-218

共 4 页 第 2 页
Page 2, total 4 pages

检测用主要仪器 和设备 Main equipment and instrumentation used in test	序号 NO.	名称 Name	型号 Model	设备编号 Equipment No.
	1	游标卡尺 Vernier caliper	150mm	M-019
	2	电子万能试验机 Electronic universal testing machine	CSS44250	E-006
	3	邵氏硬度计 Hardness tester (Shao)	D 型 D style	I-007
	4	电子精密天平 Electronic precision balance	PB602-N	M-002
	5	薄膜冲击器 Film Impactor	QCJ	M-011
	6	标准筛 Standard sieve	30170 目 30170 mesh size	M-017
	7	电子涂层测厚仪 Electronic layer thickness gauge	HCC-24A	I-010
	8	光泽度仪 Vancometer	UNIGLOSS60	I-078
	9	电热鼓风干燥机 Electric heating air-blowing drier	CS1011AB	E-004
	10	气流式盐雾腐蚀试验箱 Salt airflow spray corrosion test box	YW-1802	E-003
	11	万能材料试验机 Universal material testing machine	CSS-44250	E-006
	12	高低温湿热试验箱 High-low temperature humidity test chamber	PL-2G	E-002
	13	耐环境应力开裂试验仪 Environmental resistance stress cracking tester	NYK-06	I-080
	14	微机控制热变形维卡软化点试验机 Computer-controlled heat distortion vicat softening-point tester	ZWK-300	E-019

	15	氙弧灯老化实验箱 Single Xenon lamp aging test box	C135W	E-001
样品说明 Sample description	样品编号: 2007-CA03-218, FPE-1 热塑料 PE 粉末涂料 Sample NO. 2007-CA03-218, FPE-1 Thermoplastic PE powder coating			
检测说明 Test instruction				

国家交通安全设施质量监测检验中心
National Traffic Safety Facilities Quality Monitoring and Inspection Center
(交通部交通工程监理监测中心)
Traffic Engineering Supervision Monitoring Center

检测报告
Test Report

编号: 2007-CA03-218
NO. 2007-CA03-218

共 4 页 第 3 页
Page 3, total 4 pages

检测项目 Test item	技术要求 Technical requirement	检测结果 Test result	
		检测值 Detected value	单项结论 Single conclusion
一、粉末性能 property of powder			
1. 外观质量 Appearance quality	干燥、松散、均匀无结块, 色泽均匀一致, 无明显色差及杂质。 The sample is dry, loose, even non-caking, uniform color, no obvious chromatism and impurities	符合要求 compliance with requirements	合格 Qualified
2. 挥发物含量 % Content of volatile matter	≤1	0.07	合格 Qualified
3. 表观密度 g/m ³ Apparent density	0.35-0.50	0.472	合格 Qualified
4. 筛余物 (50 目) % Screening	<5	1.3	合格 Qualified
5. 熔融指数 g/10min Melt index value	5-10	5.41	合格 Qualified
二、涂层性能 Powder coating property			
1. 外观质量 Appearance quality	平整光滑, 颜色均匀一致, 无肉眼可见的气泡、气孔、裂缝和明显杂质等缺陷, 允许有轻微橘皮。 The appearance should be smooth, uniform color, no bubbles, pores, cracks obvious impurities, but allow slight orange peel.	符合要求 Compliance with requirements	合格 Qualified
2. 光泽度 (60°) % Lustrousness	≥40	68	合格 Qualified
3. 拉伸强度 MPa Tensile strength	≥13	14.0	合格 Qualified
4. 断裂延伸度 % Fracture ductility	≥300	544	合格 Qualified
5. 硬度 (邵氏 D 型) Hardness (Shao)	40~55	51	合格 Qualified

6. 维卡软化度℃ Vicat softening degree		≥80	81.0	合格 Qualified
7. 耐环境应力开裂 (F50) Environmental stress crack resistance		≥500	符合要求 Compliance with requirement	合格 Qualified
8. 涂层厚度 (单涂) mm Coating thickness		0.38~0.80	1.19	
9. 涂层附着性能 Coating property		0 级 0 stage	符合要求 Compliance with requirement	合格 Qualified
10. 涂层耐冲击性 Coating Impact resistance		除冲击部位外, 无明显裂纹、皱纹及涂层脱落现象。 The layer has no obvious cracks, wrinkles and coating detachment, expect for the impact site.	符合要求 Compliance with requirements	合格 Qualified
11. 涂层抗弯曲性 Coating bending resistance		应无肉眼可见的裂纹及涂层脱落现象。 The layer should be no visible cracks and coating detachment.	符合要求 Compliance with requirement	合格
12. 涂层耐化学腐蚀性 Chemical corrosion resistance	耐酸 Acid-resistant 30 H ₂ SO ₄ , 720h	涂层无气泡、溶解、溶胀、丧失黏性等现象, 试液应无混浊、褪色和填料沉淀的现象。 The coating has no bubble, dissolution, swelling, or lost viscosity, test solution should not be muddy, faded and filler sedimentation.	符合要求 Compliance with requirement	合格 Qualified
	耐碱 Alkali-resistant 40 NaOH, 720h		符合要求 Compliance with requirement	合格 Qualified
	耐盐 Salt-resistant 10%NaCl, 720h		符合要求 Compliance with requirement	合格 Qualified
13. 涂层耐盐雾性能 Salt air resistance		经 8h 试验后, 划痕部位任何一侧 0.5mm 外, 涂层应无起泡、剥离的现象。 After the 8h test, the coating site 0.5mm away from scratches on either side should be no blistering or peeling	符合要求 Compliance with requirement	合格 Qualified
14. 涂层耐湿热性能 Sticky resistance		经 8h 试验后, 划痕部位任何一侧 0.5mm 外, 涂层应无起泡、剥离的现象。 After the 8h test, the coating site 0.5mm away from scratches on either side should be no blistering or peeling	符合要求 Compliance with requirement	合格 Qualified
15. 涂层耐低温催化性能 Low temperature catalyse resistance performance		经 168h 试验后, 涂层应无明显变色及开裂现象, 经耐冲击性后, 除冲击部位外, 无明显裂纹、皱纹及涂层脱落现象。 After the 8h test, the layer has no	符合要求 Compliance with requirement	合格 Qualified

	<p>obvious discolor or craze. After the impact resistance test, the layer has no obvious cracks, wrinkles and coating detachment, expect for the impact site.</p>		
<p>四、耐热性能 Resistance to effect of heat</p>		<p>见本报告第 4 页 See page 4</p>	

国家交通安全设施质量监测检验中心
National Traffic Safety Facilities Quality Monitoring and Inspection Center
(交通部交通工程监理监测中心)
Traffic Engineering Supervision Monitoring Center
人工加速耐候性检测报告
Report of manual accelerate weathering test

编号: 2007-CA03-218
NO. 2007-CA03-218

共 4 页 第 4 页
Page 4, total 4 pages

产品名称 Name	热塑料 PE 粉末涂料 Thermoplastic PE powder coating	型号规格 Model	FPE-1	
委托单位 Entrust company	廊坊市富泉塑份有限公司 Langfang Fuquan molding powder com,led	商标 Brand	2007 年 08 月 20 日 August 20 th ,2007	
生产单位 Production unit	廊坊市富泉塑份有限公司 Langfang Fuquan molding powder com,led	送检日期 Submission date		
送样者 Sample delivered by	郭民华 Guo Minghua	送样数量 Quantity of sample	绿色试块 50 块:绿色粉末 1kg 50 green test blocks and 1kg of green powder	
检测标准 Testing standard	<p>1.国家标准 GB/T16422.2~1999 《塑料试验室光源暴露试验方法 第 2 部分: 氙弧灯》 2.交通行业标准 JT/T600.2-2004 《公路用防腐蚀粉末涂料及涂层 第 2 部分: 热塑性聚乙烯粉末涂料及涂层》</p> <p>1. National standard GB/T16422.2~1999 <i>Plastics laboratory light exposure test method part 2 single Xenon lamp.</i> 2. Transportation Industry Standard JT/T600.2-2004 <i>Highway used anti-corrosion powder coatings and coatings Part 2: Thermoplastic polyethylene powder coatings and coatings</i></p>			
1 试验条件 Test condition	设备名称 Name of equipment	氙弧灯人工加速耐气候性试验箱 Single Xenon lamp manual accelerate weathering test box		
	型号 Model	美国 ATLAS CI35W USA ATLAS CI35W	编号 NO.	E-001
	氙灯功率 Power of Xenon lamp	平均 3.0kw Average 3.0kw	黑板温度 Blackboard temperature	65±3℃
	样品架辐射周期 Radiation cycle of sample	E=1074+50W/m ² 在 340mm 的辐射照 度为 0.350W/m ² At the distance of 340mm the irradiance is 0.350W/m ²	总辐射时间 Radiation time	T=1000h
	氙灯照射周期 Light cycle of Xenon lamp	连续照射, 无暗周期 Continuous no dark		

	降雨周期 Rain cycle	每 120 分钟为一周期，每周期降雨 10 分钟 Every 120 minutes for one cycle, rain 10 minutes per cycle.		
	试验用水 Water for text	导电电阻>1MΩ 的去离子水 DI-water with the resistance larger than 1MΩ		
2.总辐射能量 Total radiation energy		$Q=E*T=1074W/m^2 \times 1200 \times 3600S=4.63968 \times 10^9J/M^2 \approx 4.64 \times 10^6K J/M^2$		
序号 NO.	检测项目 Test item	技术要求 Technical requirement	检测结果 Testing result	
			检测值 Detected value	单项结论 Single conclusion
1.	变色等级 Color change level	不低于 2 级 More than 2 stage	2 级 2 stage	合格 Qualified
2.	粉化等级 Pulverization grade	不低于 1 级 More than 1 stage	0 级 0 stage	合格 Qualified
3.	开裂等级 Cracking level	开裂数量不低于 1 级，开裂大小不低于 S1 级 Cracking number should be more than 1 stage, and the crack size should not less than S1 stage.	0 级 0 stage	合格 Qualified
4.	起泡等级 Bubble level	不低于 0 级 Not less than 0 stage	0 级 0 stage	合格 Qualified
5.	生锈等级 Rust rating	锈点数量不低于 1 级，锈点大小不低于 S1 级 Rust number should not less than 1 stage, and the rust size should not less than S1 stage	0 级 0 stage	合格 Qualified
6.	剥落等级 Spalling level	不低于 0 级 More than 0 stage	0 级 0 stage	合格 Qualified
7.	综合评定等级 Comprehensive rating	不低于 1 级 More than 1 stage	1 级 1 stage	合格 Qualified
8.	拉伸强度保留率 Tensile strength retention	≥ 80	92.1	合格 Qualified
结论 Conclusion		<p>所送试样在辐射照度 1074+50W/m² 的条件下，经过 1200 小时，累积总辐射能量 4.64 × 10⁶K J/M² 的人工加速耐候性试验后，未出现明显老化现象。符合有关标准要求。</p> <p>The sample under the radiation of 1074+50W/m² for 1200 hours, the total radiation is 4.64×10⁶K J/M² for the manual accelerate weathering test, does not appear obvious aging. Achieve the relevant standards.</p>		
<p>备注 1.所送试样颜色为绿色，2.本报告仅对来样负责，3.本报告有效期至 2012 年 04 月 29 号</p> <p>Remarks : 1.The sample is green colour.</p>				

.

2. This report is only responsible for sample.

3. The validity of report is to April 29th, 2012.