

测试报告

编号 : GZIN161001906CCM_CN

日期 : 2016.11.23

页码 : 1 of 41

客户名称: 佛山市纬仑装饰材料有限公司

客户地址: 佛山市顺德区大良街道新滘工业区创业路 2 号

下列样品由客户提供及确认:

样品名称 : 铝塑板
SGS 参考编号 : GZIN161001906CCM
生产商 : 纬仑
测试要求 : 根据客户要求选择测试
收样日期 : 2016 年 10 月 25 日
测试周期 : 2016 年 10 月 25 日至 2016 年 11 月 07 日
测试结果 : 请见下页。

*****待续*****

通标标准技术服务有限公司
广州分公司
授权签名

薛锦培 授权签字人

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结果总结:

序号	测试项目	测试方法	结果	结论
1	耐磨性能	ASTM D4060-14	质量损失: 37mg	/
2	涂膜附着力	ASTM D3359-09 ^{e2} 方法 B	附着力等级: 5B	/
3	涂膜厚度	ASTM D7091-13	29.1μm	/
4	色差	ASTM D2244-16	ΔE* _{ab} =0.2	/
5	耐洗涤剂	ASTM D2248-01a(2013)	无可见变化	/
6	耐家用化学品	ASTM D1308-02(2013)	详见结果	/
7	耐冲击性	ASTM D2794-93(2010)	冲击破坏点: 1.45kg•m	/
8	中性盐雾 (NSS) 试验	ASTM B117-16	详见结果	/
9	铅笔硬度	ASTM D3363-05(2011) ^{e2}	擦伤硬度: 2H	/
10	漆膜附着力 (拉开法)	ASTM D4541-09 ^{e1} 方法 E	详见结果	/
11	耐刮擦	ISO 1518-1:2011	详见结果	/
12	涂膜耐水性(浸泡法)	ASTM D870-15	详见结果	/
13	沸水附着力	AAMA 2604-13 第 8.4.1.1 节, 第 8.4.1.4 节, 第 8.4.1.2 节, 第 8.4.2 节	详见结果	/
14	耐泥浆	AAMA 2604-13 第 8.7.2 节	详见结果	/
15	负荷变形温度	参照 ASTM D648-16 和客户要求	111.0 °C	/
16	密度	ASTM C271/C271M-16	1280 kg/m ³	/



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17	弯曲测试	参照 ASTM D790-15 ^{e2} 程序 A 和客户要求	弯曲强度	111 MPa	/
			弯曲模量	10900 MPa	
18	单位面积质量	参照 ASTM D5947-11 和客户要求	5735 g/m ²		/
19	剥离强度	ASTM D903-98(2010)	1.06 kgf/mm		/
20	弯曲剪切强度	ASTM C393/C393M-16	1.75 MPa		/
21	剪切强度	ASTM D732-10	31.6 MPa		/
22	平面拉伸强度	ASTM C297/C297M-16	6.65 MPa		/
23	拉伸测试	ASTM D638-14	拉伸强度	48.6 MPa	/
			拉伸屈服应力	48.6 MPa	
24	平面剪切测试	ASTM C273/C273M-16	平面剪切强度	6.65 MPa	/
			平面剪切模量	33.3 MPa	

备注: 合格: 达到要求

不合格: 未到达要求

/: 不下判定



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1. 测试项目: 耐磨性能

样品描述: 见照片

测试方法: ASTM D4060-14

测试条件:

轮子型号: CS-10

负重: 500g/轮 (总重 1000g)

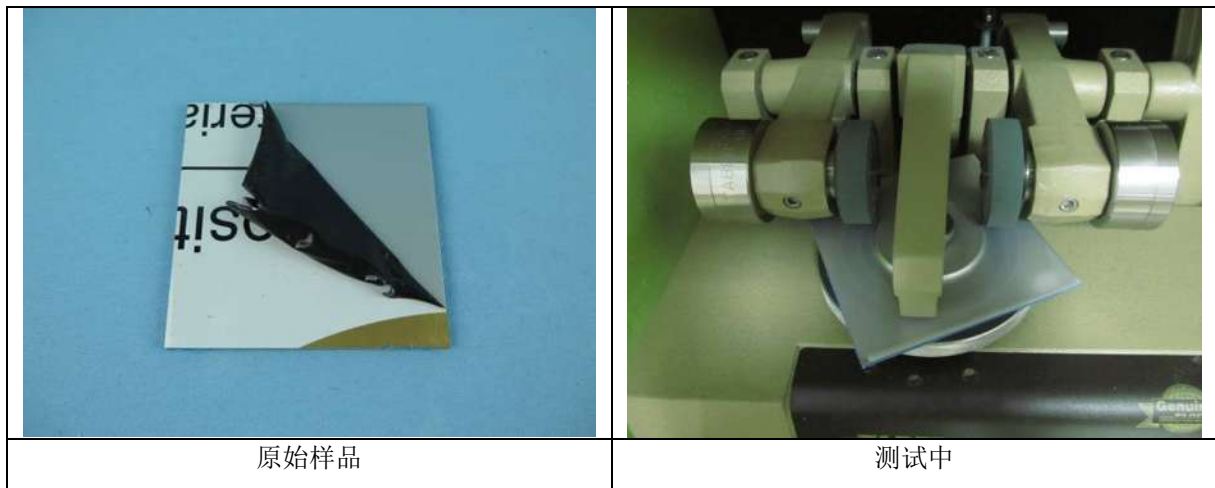
转数: 2000

测试结果:

测试项目	质量损失
耐磨性能	37mg

备注: 测试前撕掉试样的保护膜。

测试照片:



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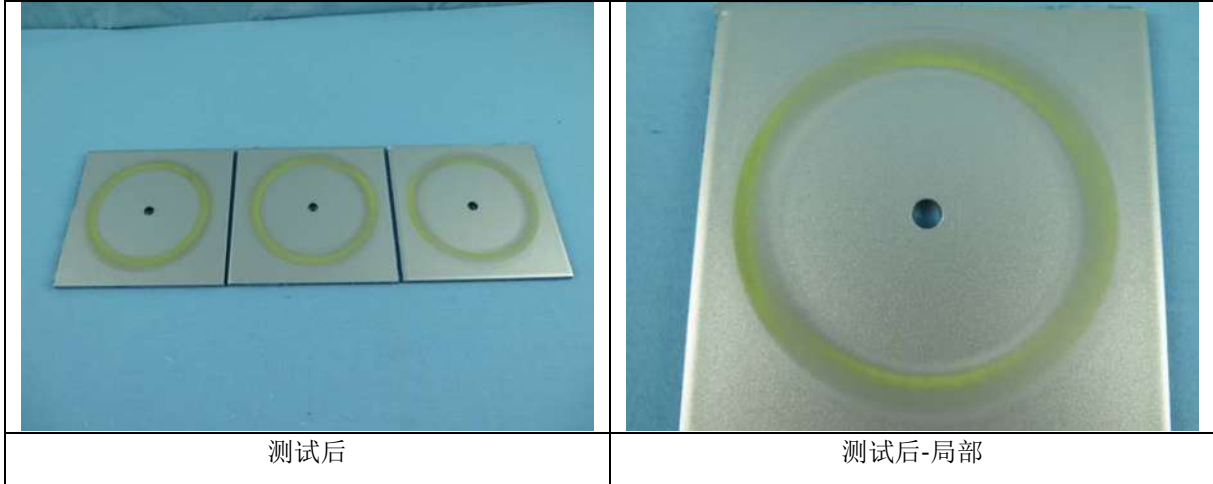
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2. 测试项目：涂膜附着力

样品描述：见照片

测试方法：ASTM D3359-09^{e2} 方法 B

测试条件：

划格间距：1mm

测试胶带：Elcometer 99

测试结果：

测试项目	附着力等级
涂膜附着力	5B

备注：

1. 依据 ASTM D3359-09^{e2} 方法 B，附着力等级 5B 最好，0B 最差。

2. 测试前撕掉试样的保护膜。



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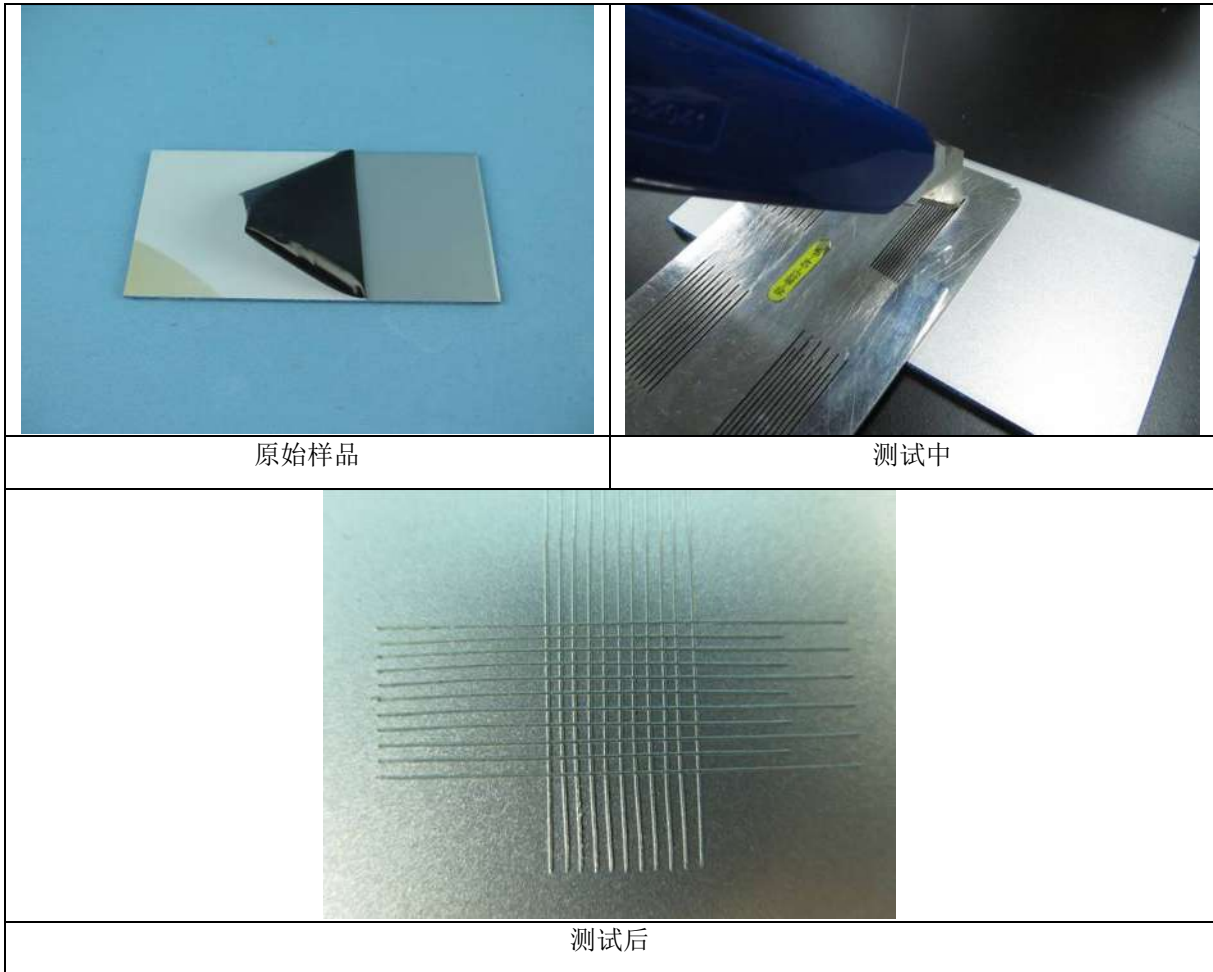
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3. 测试项目: 涂膜厚度

样品描述: 见照片

测试方法: ASTM D7091-13

试验条件:

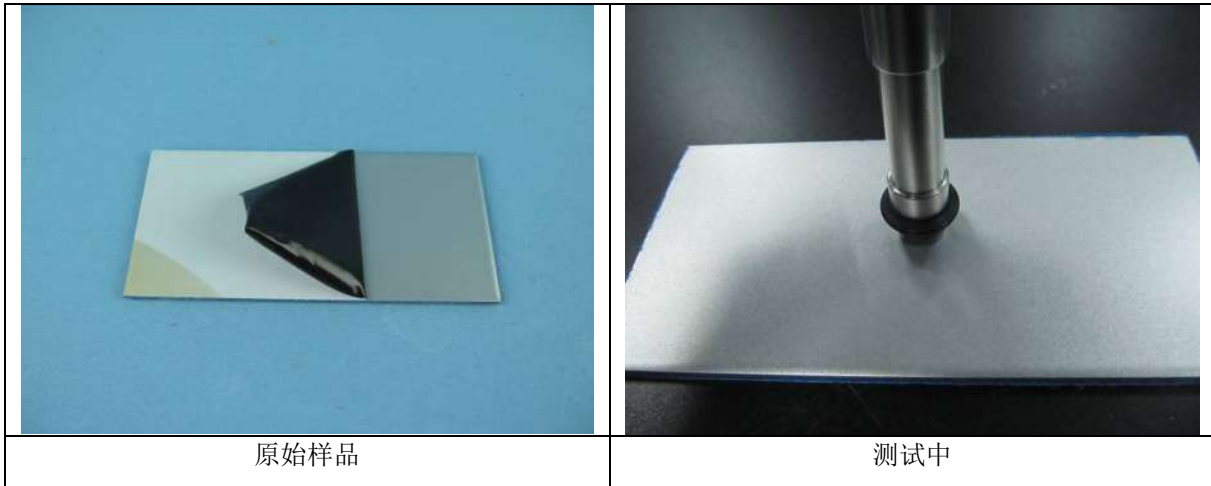
涡流法

测试结果:

测试项目	测试结果
涂膜厚度	29.1μm

备注: 测试前撕掉试样的保护膜。

测试照片:



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4. 测试项目: 色差

样品描述: 见照片

测试方法: ASTM D2244-16

测试条件:

积分球式分光光度计 d/8

光源: D65

观察者: 10°

测量模式: 包含镜面反射

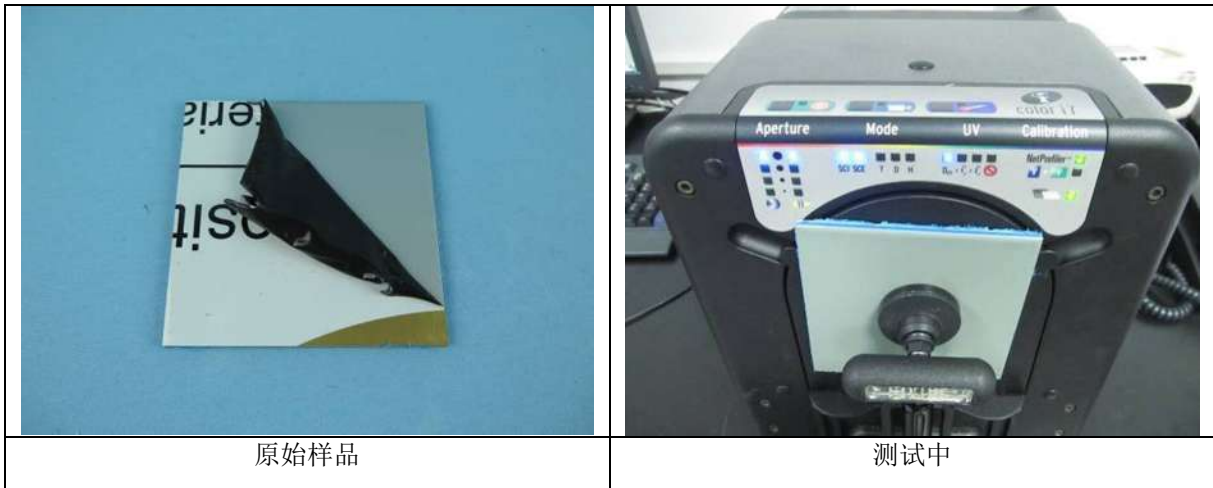
孔径: 25mm

测试结果:

测试项目	ΔE^*_{ab}
色差	0.2

备注: 测试前撕掉试样的保护膜。

测试照片:



原始样品

测试中



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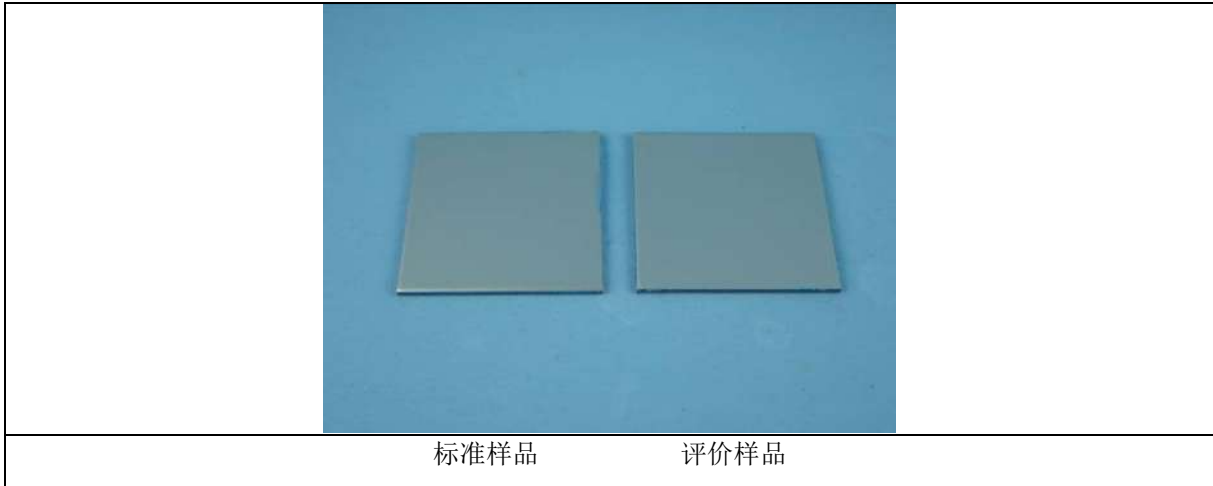
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5. 测试项目：耐洗涤剂

样品描述：见照片

测试方法：ASTM D2248-01a(2013)

测试条件：

浸泡法

温度：38℃

接触时间：72h

测试结果：

测试项目	测试结果
耐洗涤剂	无可见变化



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备注:

1. 洗涤剂成分如下:

无水焦磷酸四钠(AR): 53%(m/m)

无水硫酸钠(AR): 19%(m/m)

十二烷基磺酸钠(AR): 20%(m/m)

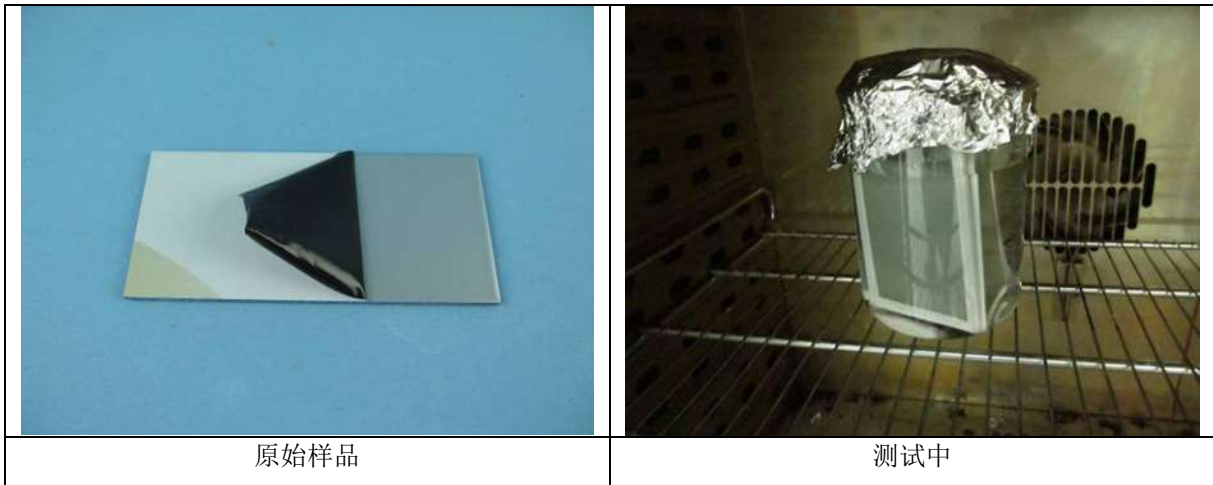
水合硅酸钠(AR): 7%(m/m)

无水碳酸钠(AR): 1%(m/m)

取上述洗涤剂配置成 1%(m/m)洗涤液

2. 测试前撕掉试样的保护膜。

测试照片:

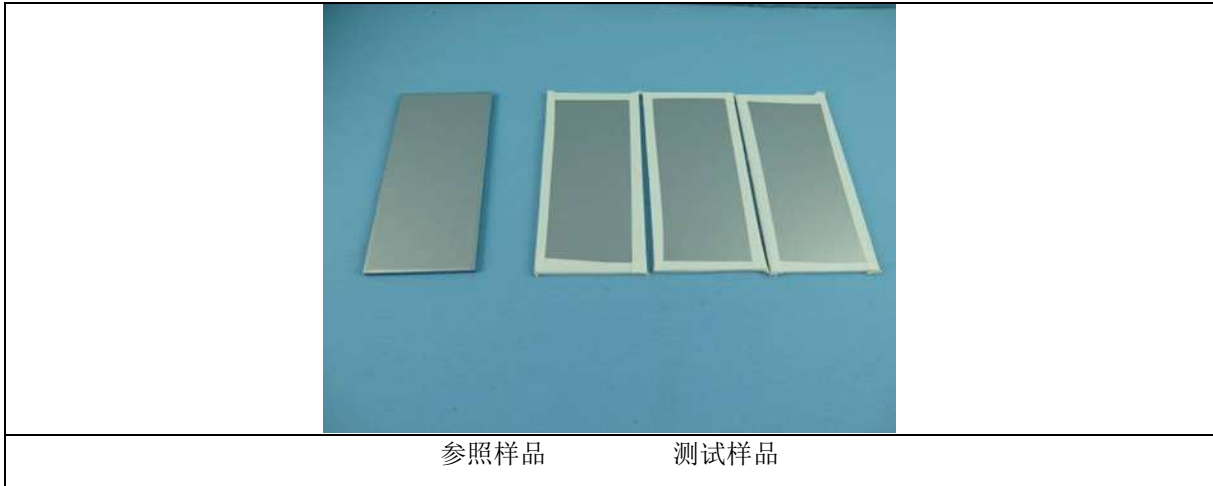


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6. 测试项目：耐家用化学品

样品描述：见照片

测试方法：ASTM D1308-02(2013)

测试条件：

点滴法，15min

测试结果：

测试项目	测试溶液	测试结果
耐家用化学品	10%(V/V)HCl	无变色、光泽变化、起泡、软化、膨胀、附着力损失或其他可见变化
	10%(m/m)NaOH	无变色、光泽变化、起泡、软化、膨胀、附着力损失或其他可见变化
	美孚®速霸 1000 10W-40 发动机油	无变色、光泽变化、起泡、软化、膨胀、附着力损失或其他可见变化

备注：测试前撕掉试样的保护膜。



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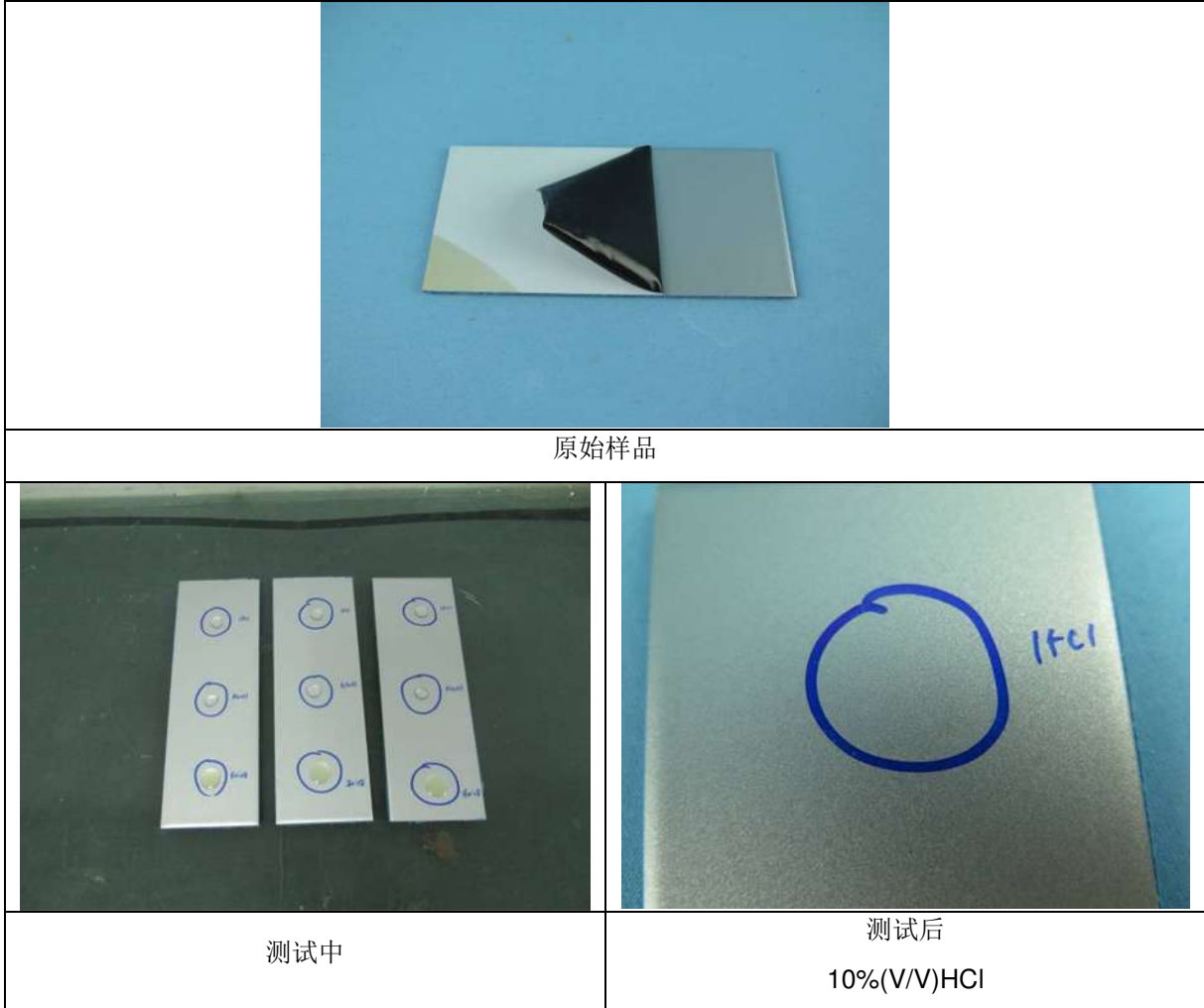
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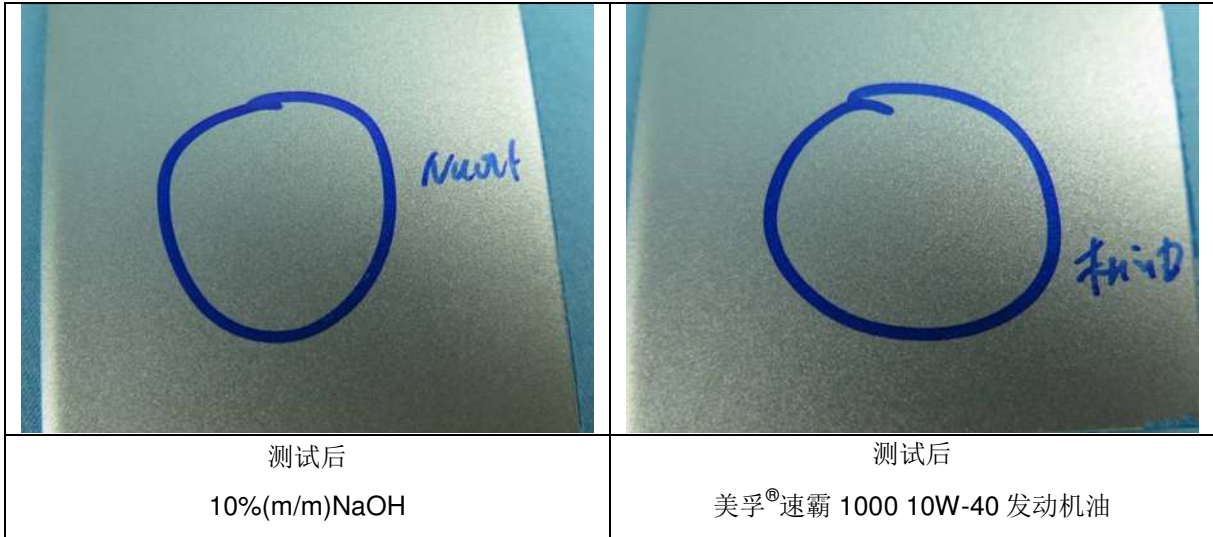
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7. 测试项目：耐冲击性

样品描述：见照片

测试方法：ASTM D2794-93(2010)

测试条件：

漆膜厚度：29.1μm

样板厚度：4.23mm

冲头直径：15.9mm

冲击类型：正冲

测试结果：

测试项目	测试结果
耐冲击性	冲击破坏点: 1.45kg·m

备注：测试前撕掉试样的保护膜。



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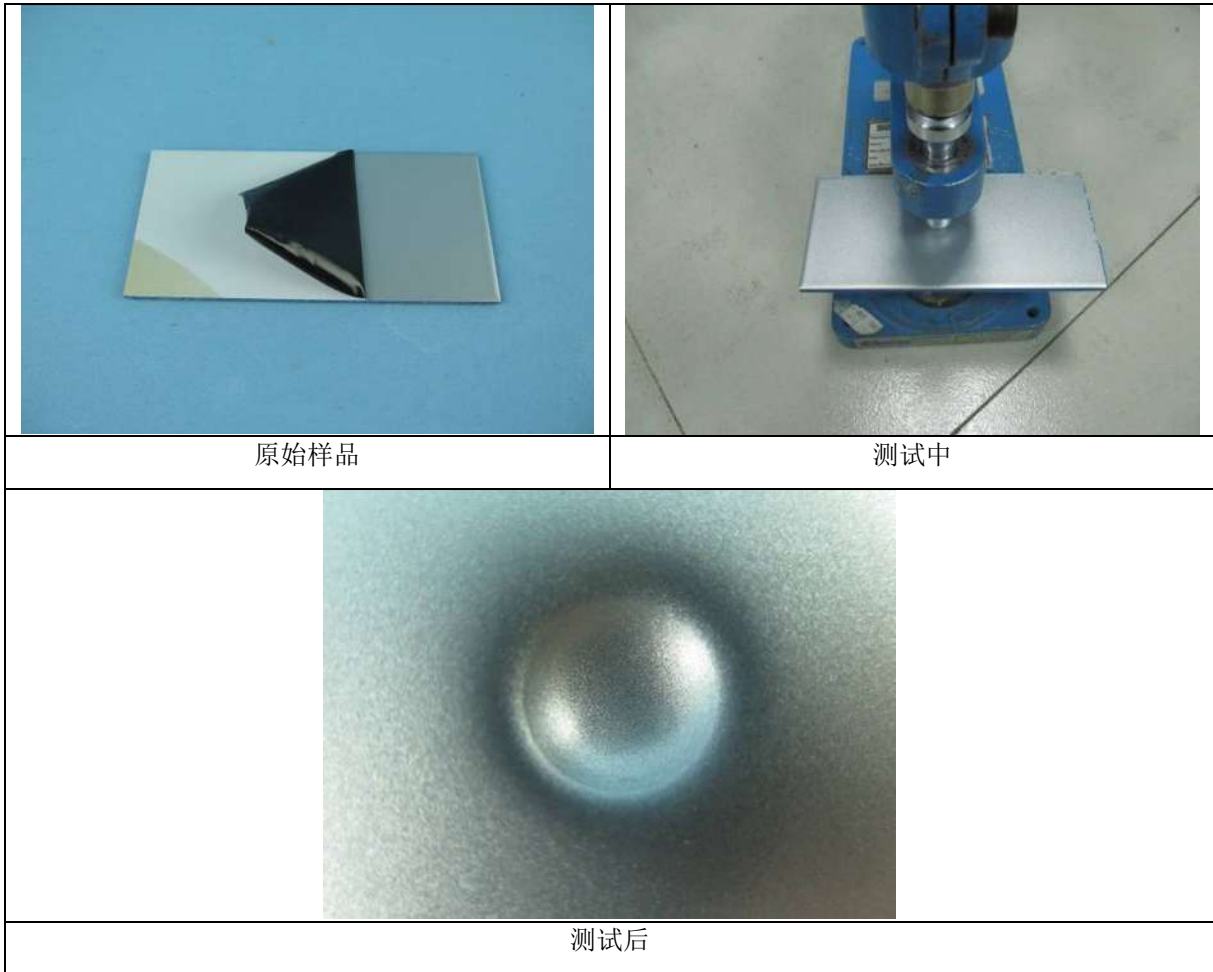
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8. 测试项目: 中性盐雾(NSS)试验

样品描述: 见照片

测试方法: ASTM B117-16

测试条件:

沉降盐液浓度: (5±1)% NaCl(m/m)

试验箱温度: (35±2)°C

盐雾沉降率: (1.0~2.0)ml/(80cm²·h)

沉降盐液 pH 值(23±3)°C: 6.5~7.2

暴露时间: 24h

测试结果:

测试项目	外观等级(见备注 2)		综合等级
中性盐雾(NSS)试验	#1	10	10
	#2	10	
	#3	10	

备注:

1. 测试前撕掉试样的保护膜。



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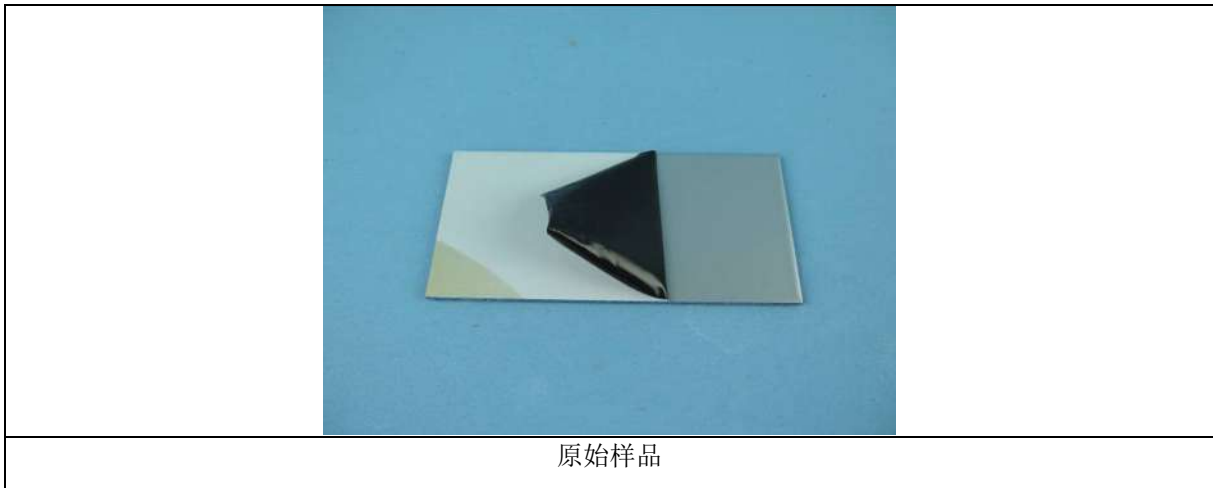
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2. 外观等级参照 EN ISO 10289:2001, 按破坏面积评定:

破坏面积 A(%)	外观等级
0(无破坏)	10
$0 < A \leq 0.1$	9
$0.1 < A \leq 0.25$	8
$0.25 < A \leq 0.5$	7
$0.5 < A \leq 1.0$	6
$1.0 < A \leq 2.5$	5
$2.5 < A \leq 5.0$	4
$5.0 < A \leq 10$	3
$10 < A \leq 25$	2
$25 < A \leq 50$	1
$50 < A$	0

测试照片:





9. 测试项目：铅笔硬度

样品描述：见照片

测试方法：ASTM D3363-05(2011) ^{e2}

测试条件：

测试铅笔：Mitsubishi® Uni

测试结果：

测试项目	擦伤硬度
铅笔硬度	2H

备注：

1. 依据 ASTM D3363-05(2011) ^{e2}, 6H 最硬, 6B 最软。

6B—5B—4B—3B—2B—B—HB—F—H—2H—3H—4H—5H—6H

较软←-----→较硬

2. 测试前撕掉试样的保护膜。



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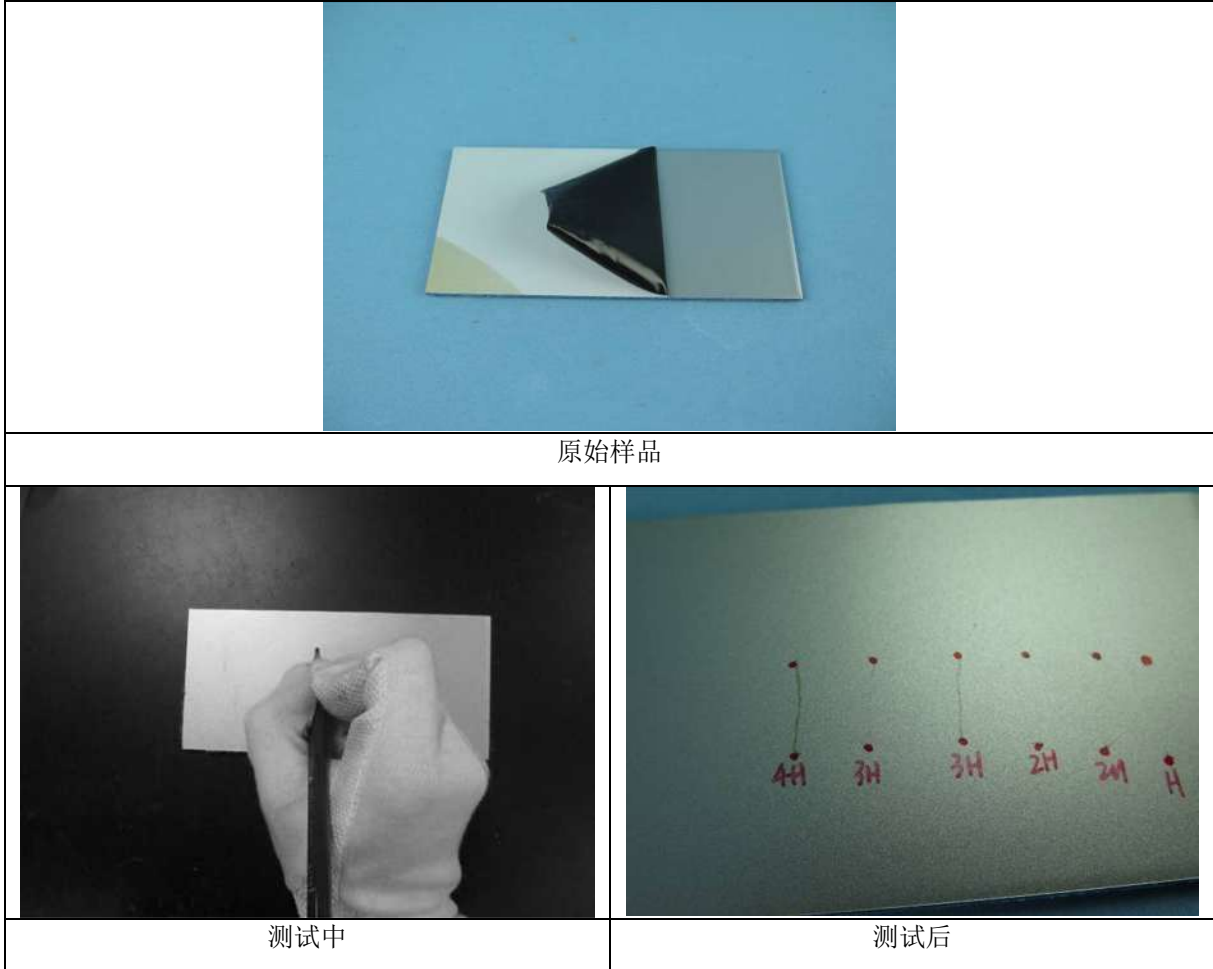
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10. 测试项目: 漆膜附着力 (拉开法)

样品描述: 见照片

测试方法: ASTM D4541-09^{e1} 方法 E

测试条件:

拉拔应力速度: 0.2MPa/s

试柱直径: 20mm

胶黏剂: 3M Scotch-Weld™ DP 460

胶黏剂固化时间: 24h

测试结果:

测试项目	破坏强度	破坏类型 (见备注 1)
漆膜附着力 (拉开法)	2MPa	100%C

备注:

1. 根据 ASTM D4541-09^{e1} Method E, 破坏类型如下:

A: 底材内聚破坏;

A/B: 第一道涂层与底材间的附着破坏;

B: 第一道涂层的内聚破坏;

C: 第二道涂层的内聚破坏;

B/C: 第一道涂层与第二道涂层间的附着破坏;

n: 复合涂层的第 n 道涂层的内聚破坏;

n/m: 复合涂层的第 n 道涂层与第 m 道涂层间的附着破坏;

—/Y: 最后一道涂层与胶黏剂间的附着破坏;

Y: 胶黏剂的内聚破坏;

Y/Z: 胶黏剂与试柱间的胶结破坏。

2. 测试前撕掉试样的保护膜。



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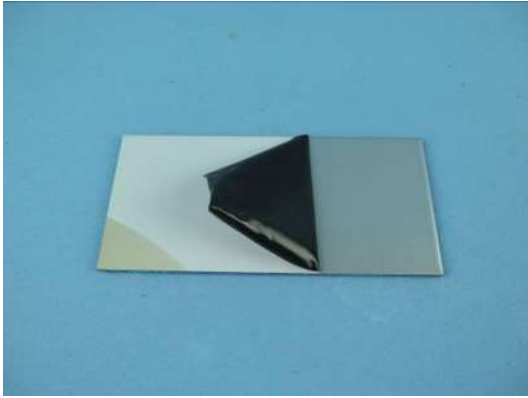


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测试照片:

	
原始样品	
	
测试中	测试后



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11. 测试项目: 耐刮擦

样品描述: 见照片

测试方法: ISO 1518-1:2011

试验条件:

摩擦头: 半球形金属头半径(0.5±0.01)mm

行程: 40mm

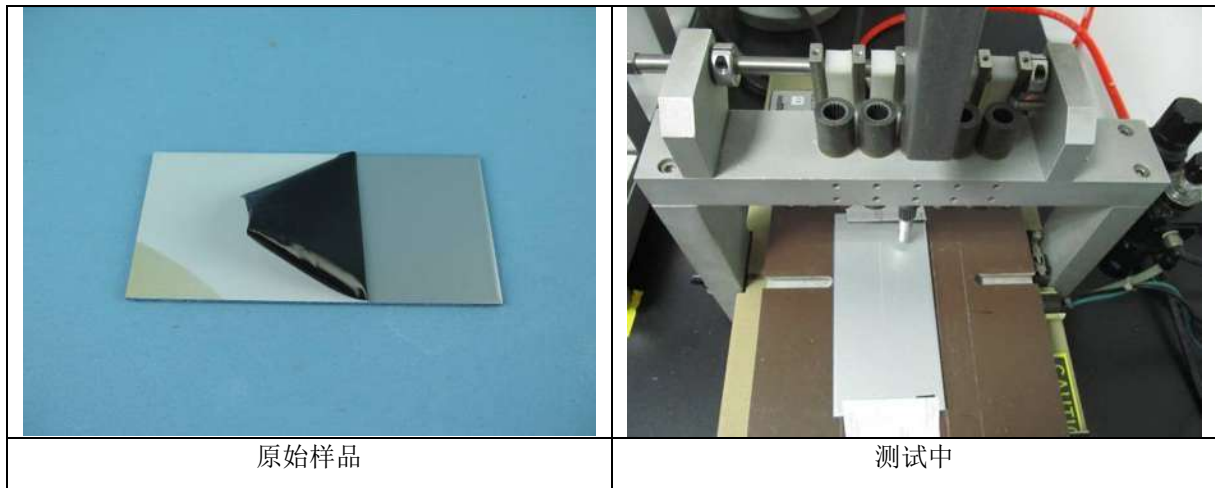
摩擦速率: (35±5) mm/s

测试结果:

测试项目	测试结果
耐刮擦	20N 划透至底漆但未划透至金属基材

备注: 测试前撕掉试样的保护膜。

测试照片

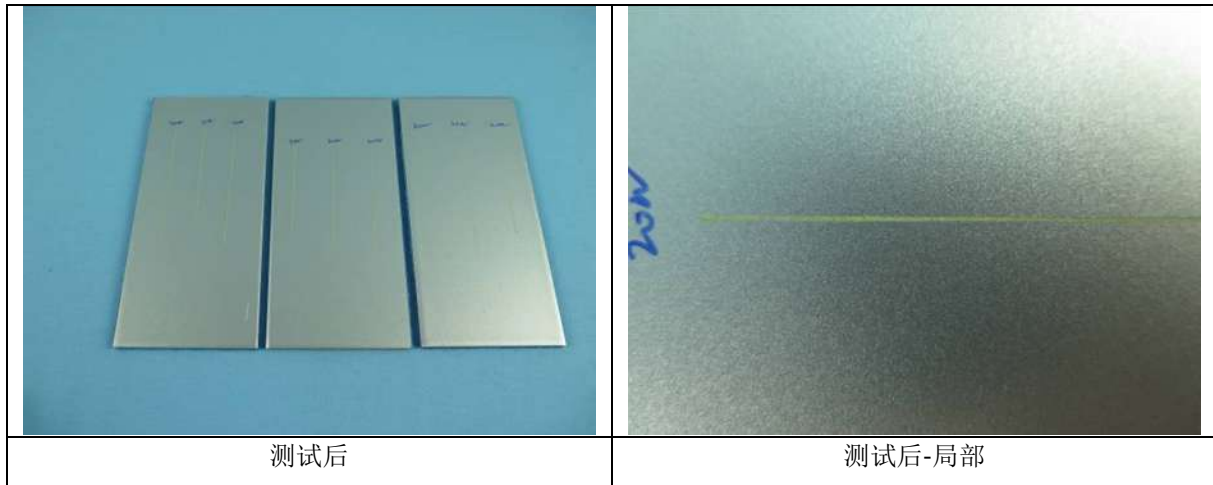


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12. 测试项目：涂膜耐水性(浸泡法)

样品描述：见照片

测试方法：ASTM D 870-15

测试条件：

水温：38℃

测试周期：24h

测试结果：

测试项目	外观
涂膜耐水性(浸泡法)	无颜色或光泽变化

备注：测试前撕掉试样的保护膜。



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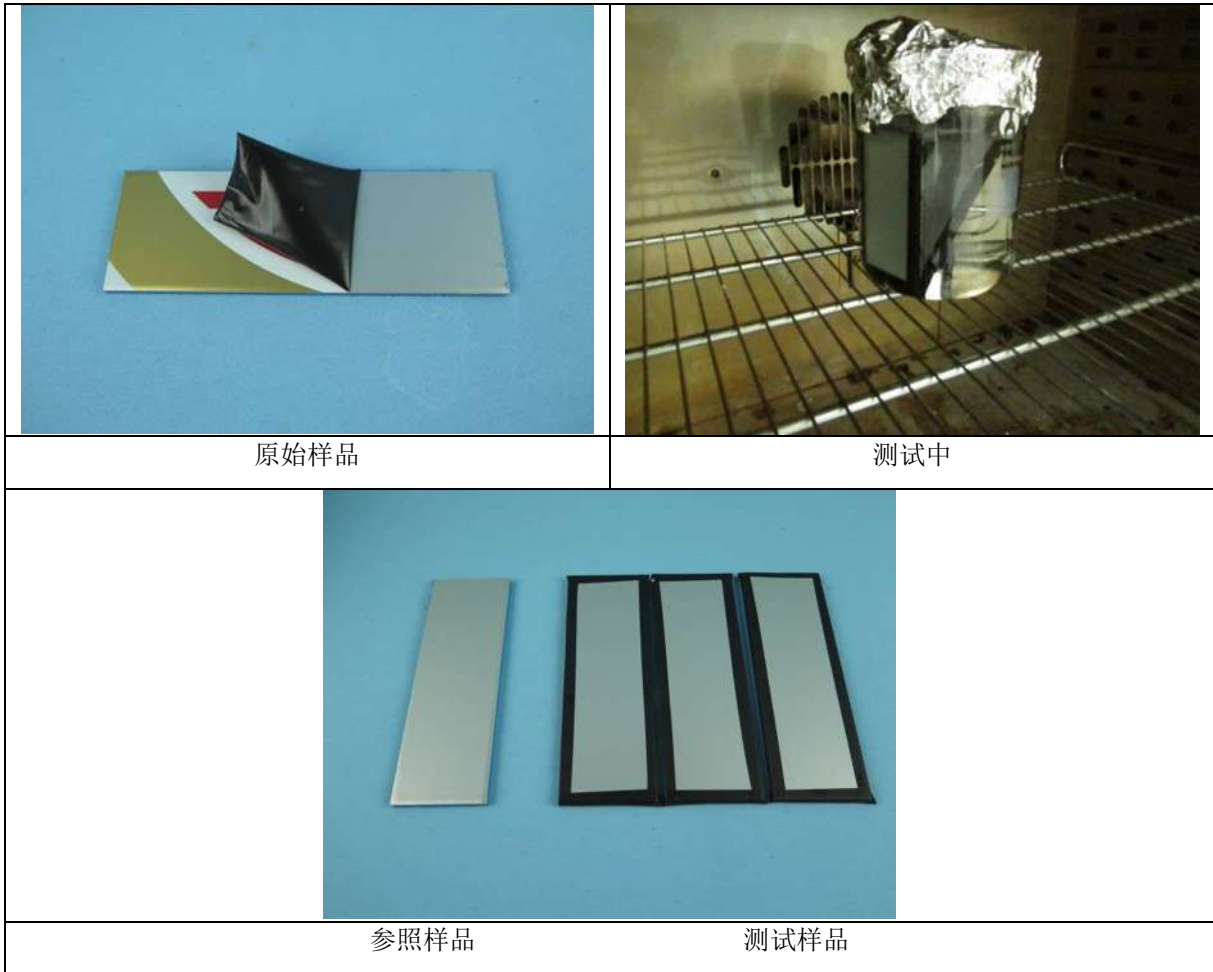
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13. 测试项目: 沸水附着力

样品描述: 见照片

测试方法: AAMA 2604-13 第 8.4.1.1 节, 第 8.4.1.4 节, 第 8.4.1.2 节, 第 8.4.2 节

测试条件:

划格间距: 1mm

浸沸水: 20min

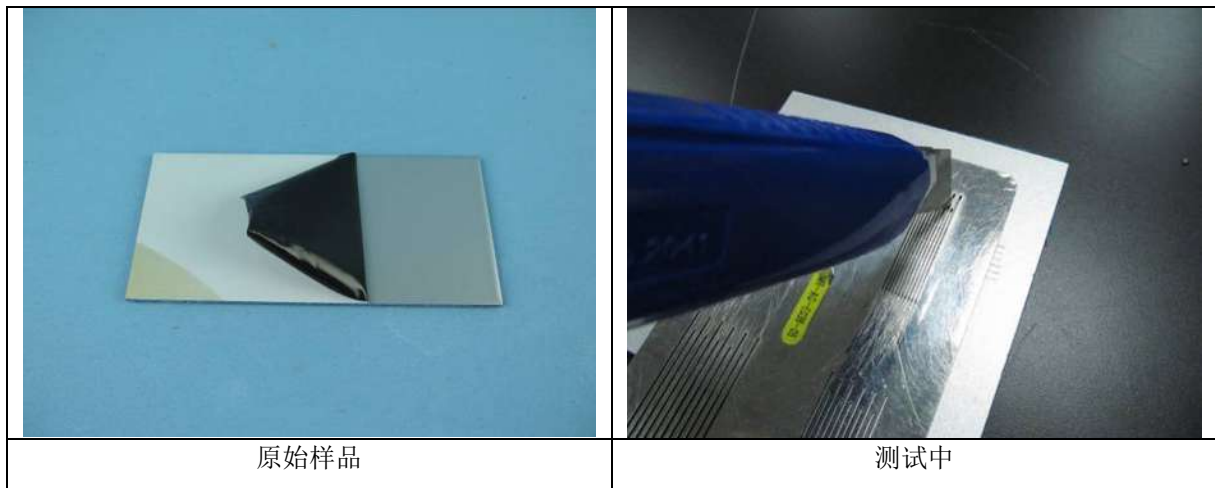
胶带: Elcometer 99

测试结果:

测试项目	测试结果
沸水附着力	无涂层脱落、起泡或附着力损失

备注: 测试前撕掉试样的保护膜。

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14. 测试项目：耐泥浆

样品描述：见照片

测试方法：AAMA 2604-13 第 8.7.2 节

测试条件：

温度：38℃

湿度：100%RH

暴露时间：24h

测试结果：

测试项目	测试结果
耐泥浆	无附着力损失或其它可见变化

备注：

1. 砂浆成分如下：

石灰粉：75g

标准砂：225g

纯水：100g

2. 测试前撕掉试样的保护膜。



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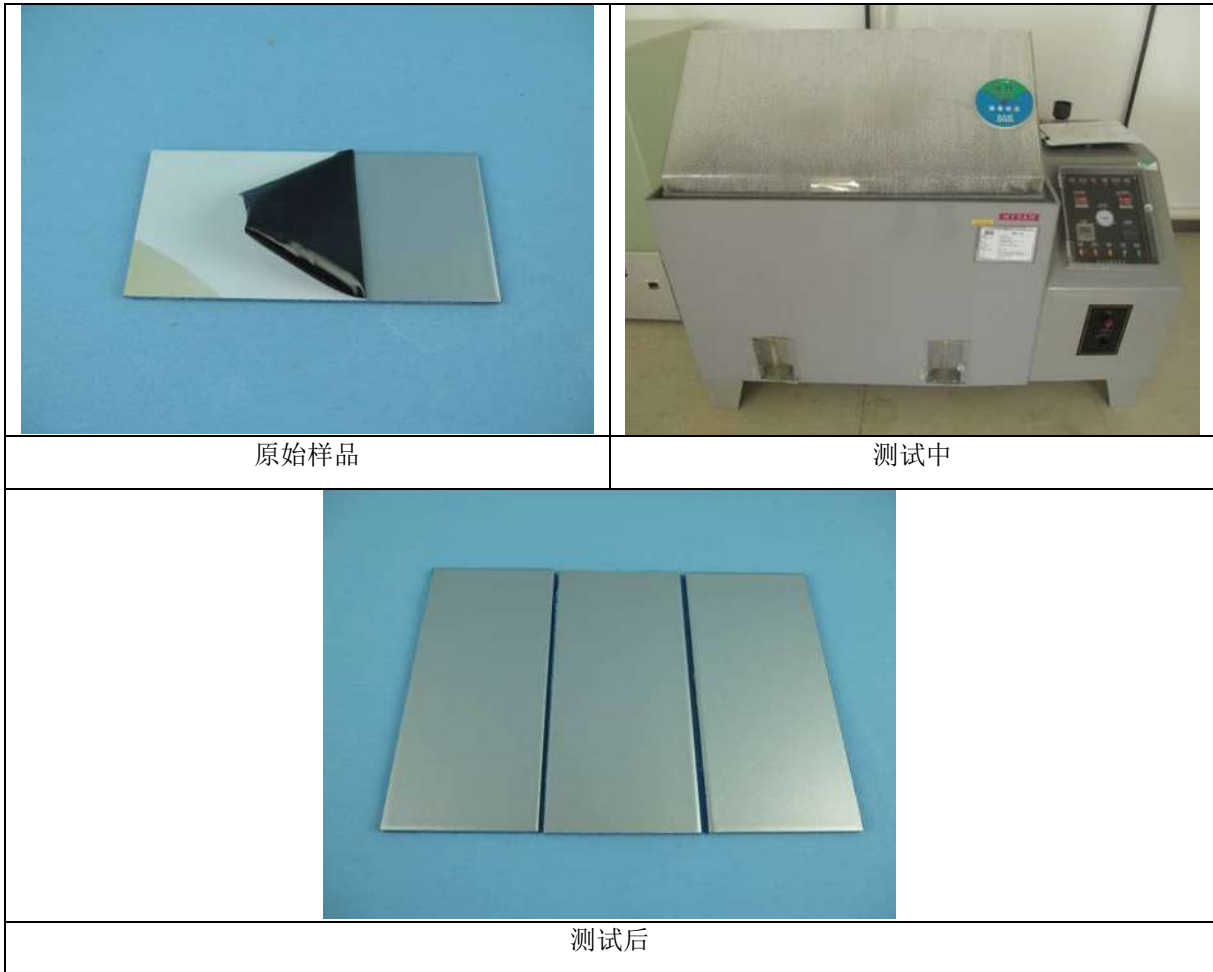
测试报告

编号 : GZIN161001906CCM_CN

日期 : 2016.11.23

页码 : 26 of 41

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15. 测试项目: 负荷变形温度

样品描述: 见照片

测试方法: 参照 ASTM D648-16 和客户要求

测试条件:

试样: 127mm × 13.56mm × 4.32mm

传热介质: 硅油

升温速率: 120°C/h

负荷: 1.82MPa

跨距: 64mm

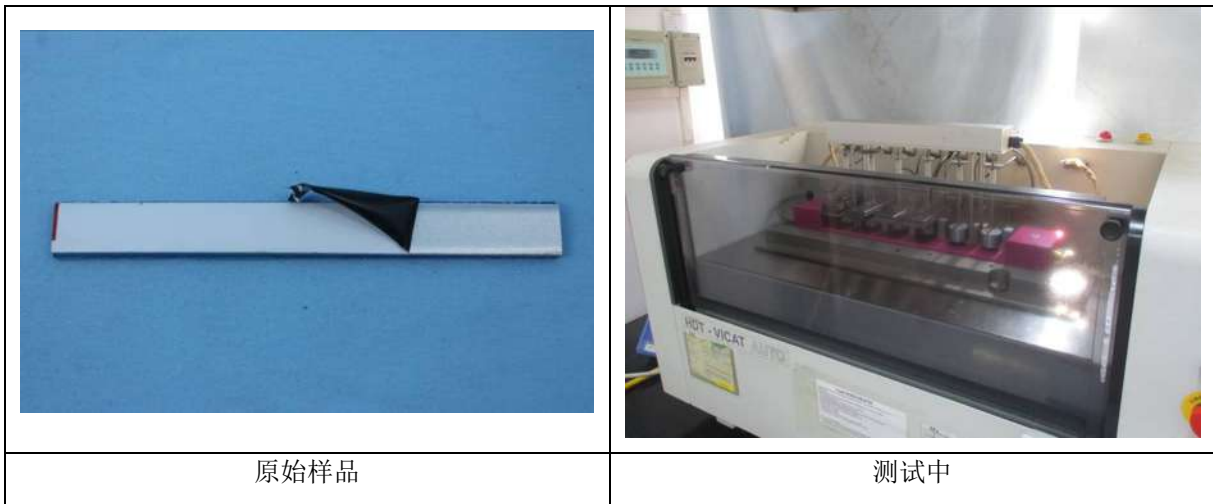
实验室环境条件: (23±2)°C, (50±5)%RH

测试结果:

测试项目	测试结果
负荷变形温度	111.0 °C

备注: 测试前撕掉试样的保护膜。

测试照片:



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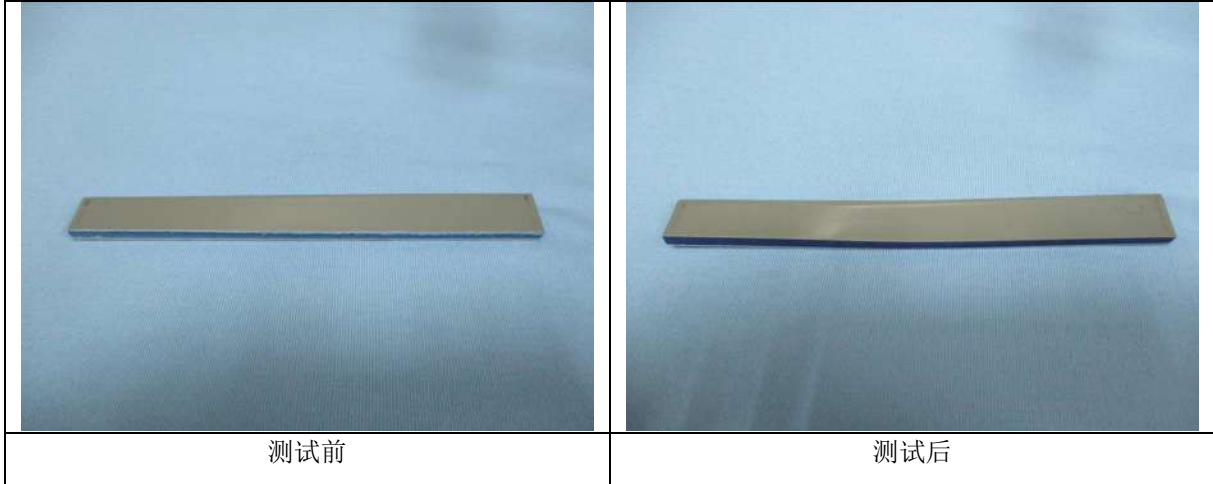
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16. 测试项目: 密度

样品描述: 见照片

测试方法: ASTM C271/C271M-16

测试条件:

预处理条件: (23±2)°C, (50±5)%RH, 48 h

试样: 301 mm × 301 mm × 4.49 mm

实验室环境条件: (23±2)°C, (50±5)%RH

测试结果:

测试项目	测试结果
密度	1280 kg/m ³

备注: 测试前撕掉试样的保护膜。

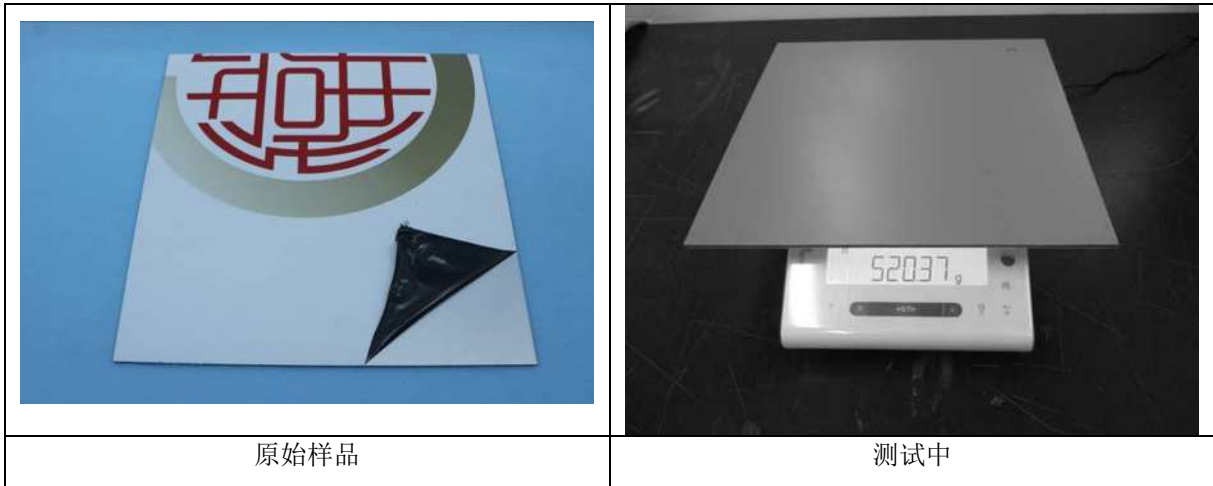


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测试照片:



17. 测试项目: 弯曲测试

样品描述: 见照片

测试方法: 参照 ASTM D790-15^{e2} 程序 A 和客户要求

测试条件:

试样: 127 mm×13.44 mm×4.35 mm

测试速度: 1.3 mm/min

跨距: 70 mm

实验室环境条件: 23±2℃, 50±5%RH

测试结果:

测试项目	测试结果
弯曲强度	111 MPa
弯曲模量	10900 MPa



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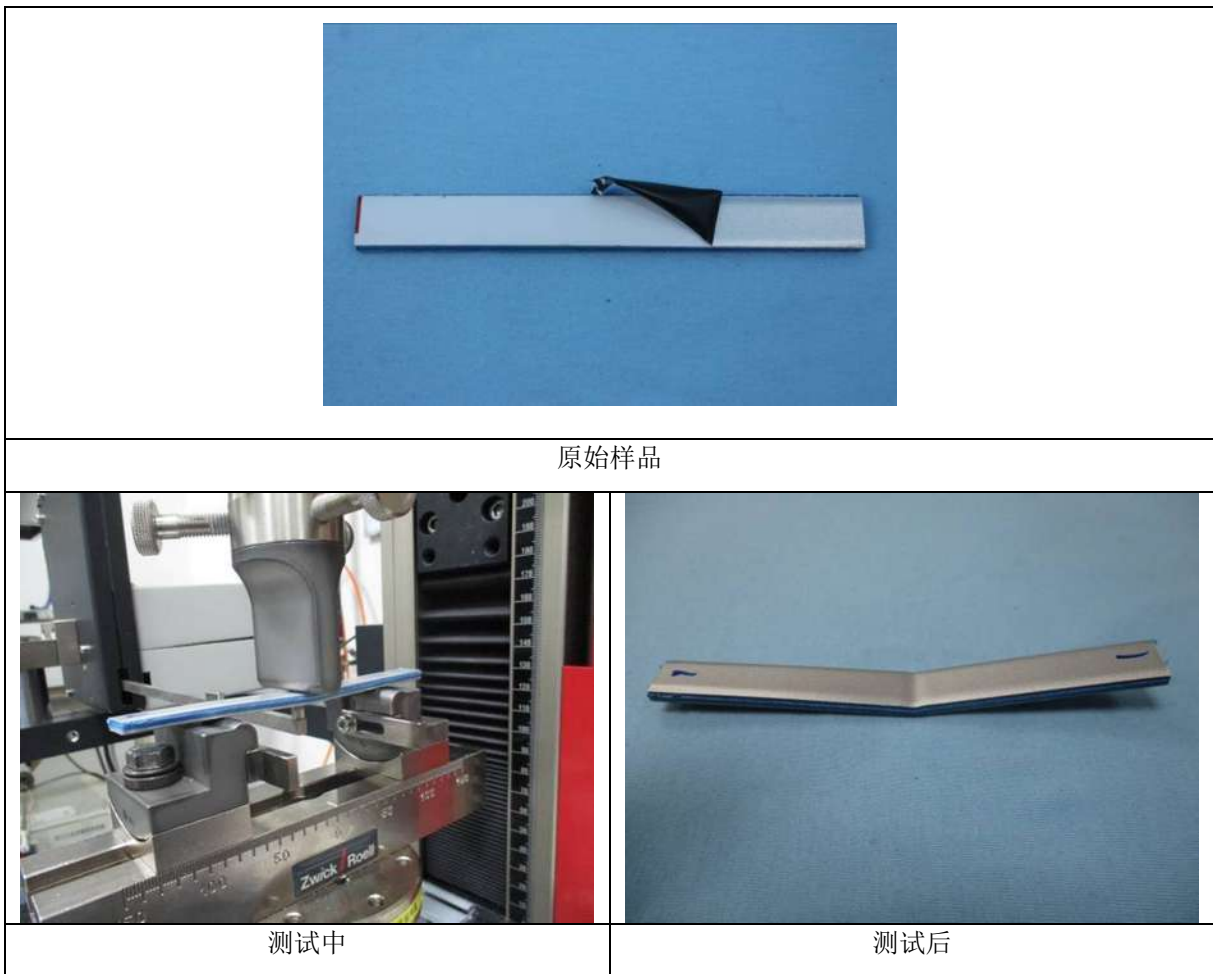
日期 : 2016.11.23

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备注:

1. 带保护膜面朝向负载。
2. 测试前撕掉试样的保护膜。

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18. 测试项目: 单位面积质量

样品描述: 见照片

测试方法: 参照 ASTM D5947-11 和客户要求

测试条件:

试样: 301 mm × 301 mm × 4.49 mm

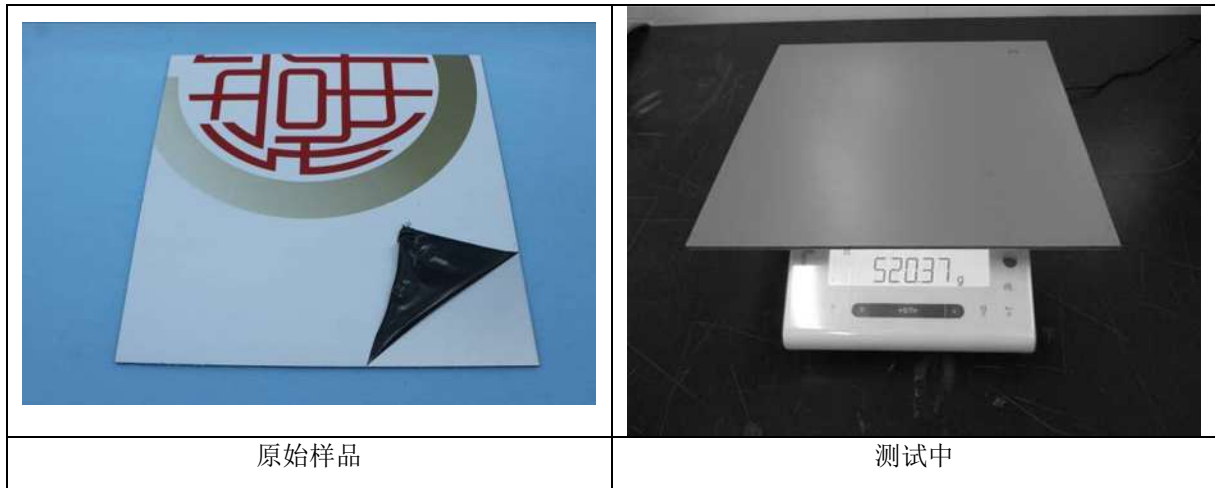
实验室环境条件: 23±2℃, 50±5%RH

测试结果:

测试项目	测试结果
单位面积质量	5735 g/m ²

备注: 测试前撕掉试样的保护膜。

测试照片:



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19. 测试项目: 剥离强度

样品描述: 见照片

测试方法: ASTM D903-98(2010)

测试条件:

试样宽度: 25 mm

分离速度: 152.4 mm/min

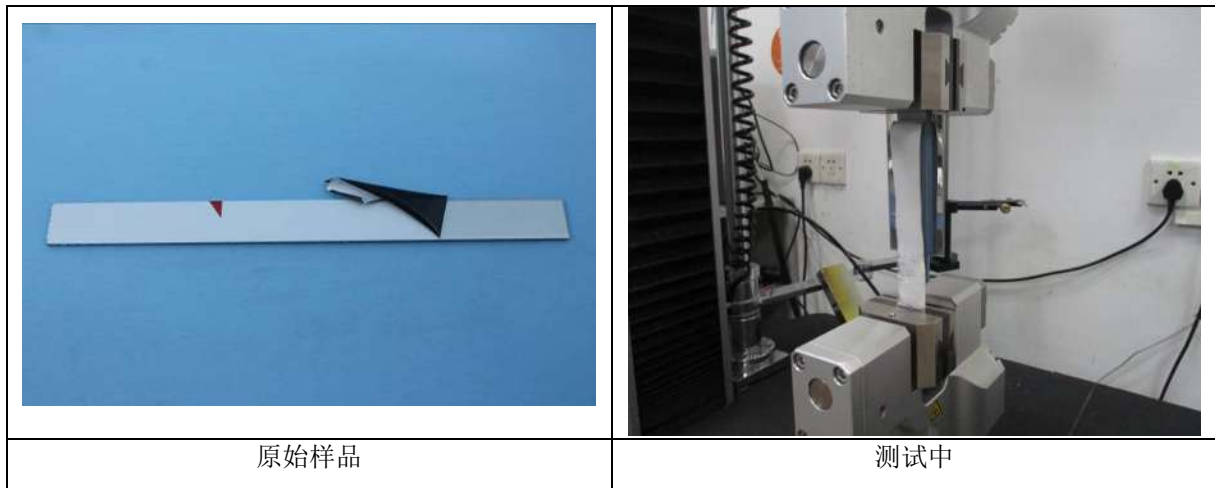
实验室环境条件: 23 ± 2 °C, 50 ± 5 % RH

测试结果:

测试项目	测试结果
剥离强度	1.06 kgf/mm

备注: 测试前撕掉试样的保护膜。

测试照片:

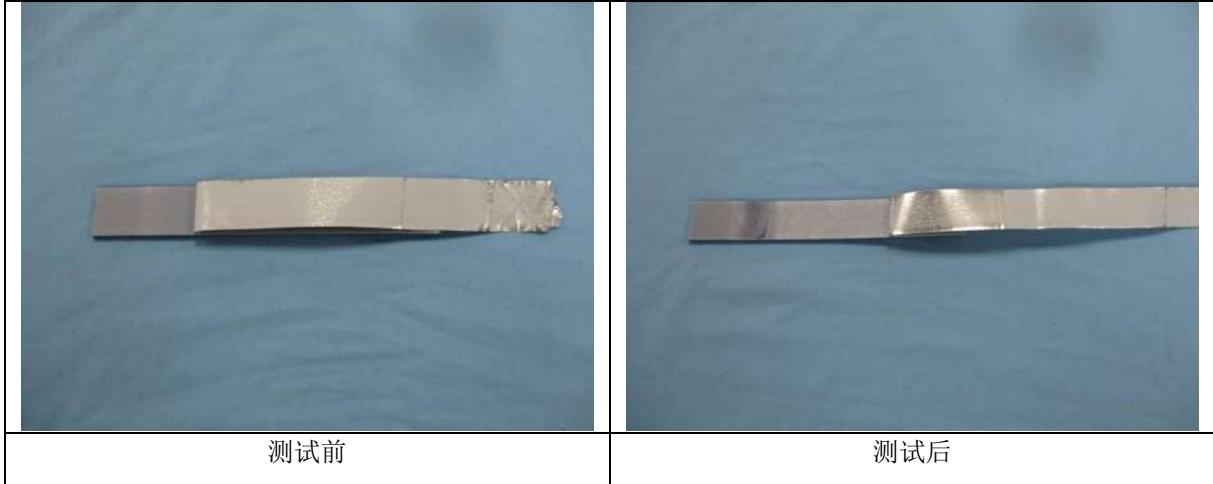


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20. 测试项目: 弯曲剪切强度

样品描述: 见照片

测试方法: ASTM C393/C393M-16

测试条件:

试样: 201 mm × 75.6 mm × 4.32 mm

芯层厚度: 3.33 mm

测试速度: 6 mm/min

跨距: 150mm

实验室环境条件: 23±2℃, 50±5%RH

测试结果:

测试项目	测试结果
弯曲剪切强度	1.75 MPa (见备注 1)



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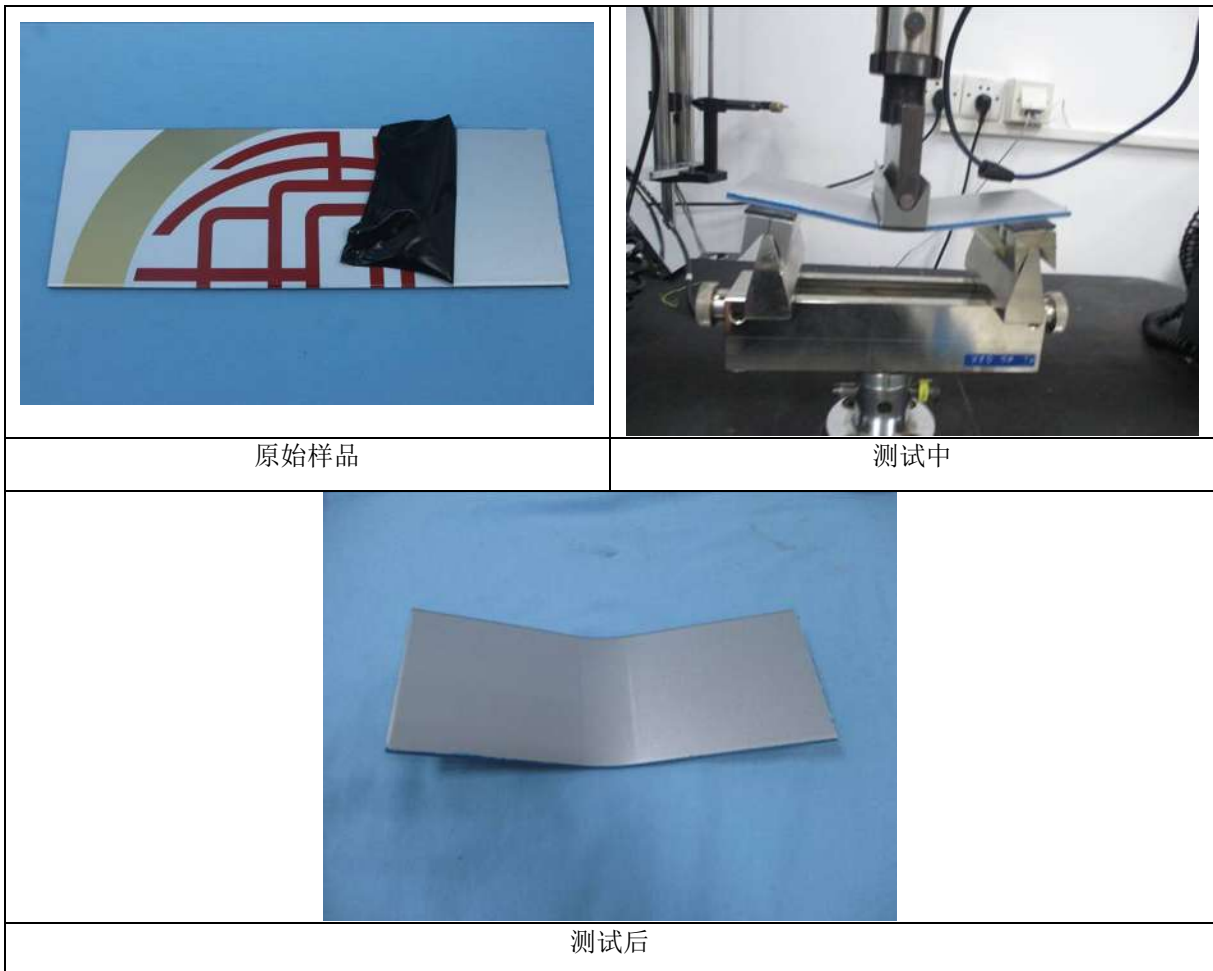
日期 : 2016.11.23

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备注:

1. 破坏类型: FAB
2. 带保护膜面朝向负载。
3. 测试前撕掉试样的保护膜。

测试照片:



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21. 测试项目: 剪切强度

样品描述: 见照片

测试方法: ASTM D732-10

测试条件:

试样厚度: 4.20 mm

冲头直径: 25 mm

测试速度: 1.3mm/min

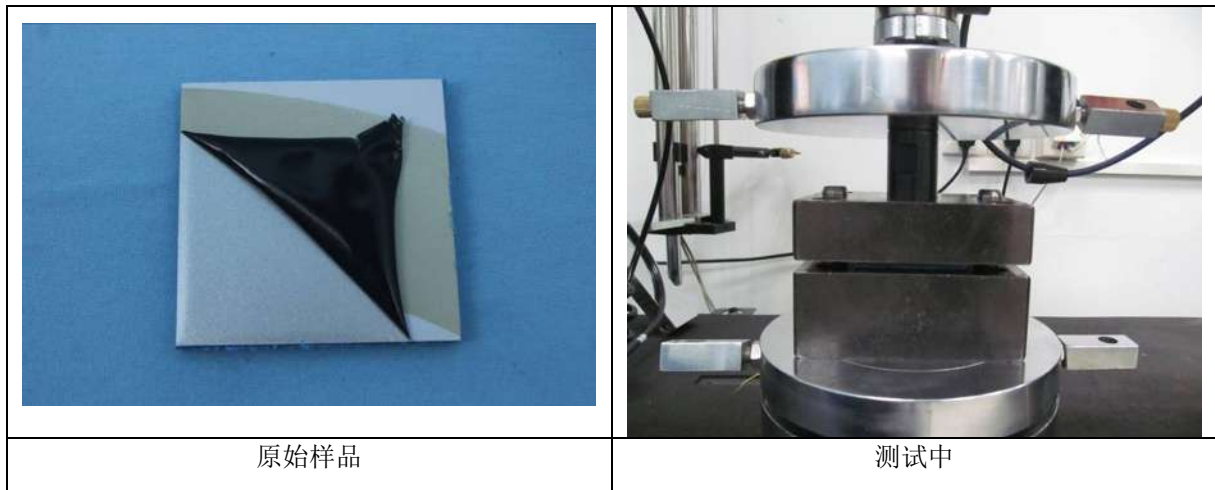
实验室环境条件: 23±2℃, 50±5%RH

测试结果:

测试项目	测试结果
剪切强度	31.6 MPa

备注: 测试前撕掉试样的保护膜。

测试照片:

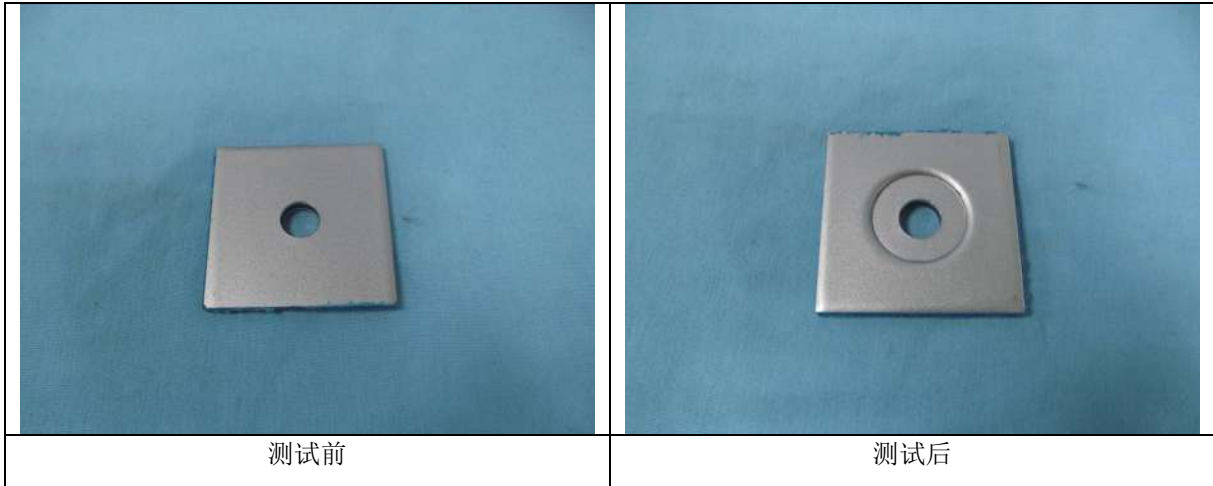


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22. 测试项目：平面拉伸强度

样品描述：见照片

测试方法：ASTM C297/C297M-16

测试条件：

试样：51 mm × 51 mm

测试速度：0.5 mm/min

实验室环境条件：(23 ± 2) °C，(50 ± 5) % RH

测试结果：

测试项目	测试结果
平面拉伸强度	6.65 MPa (见备注 1)



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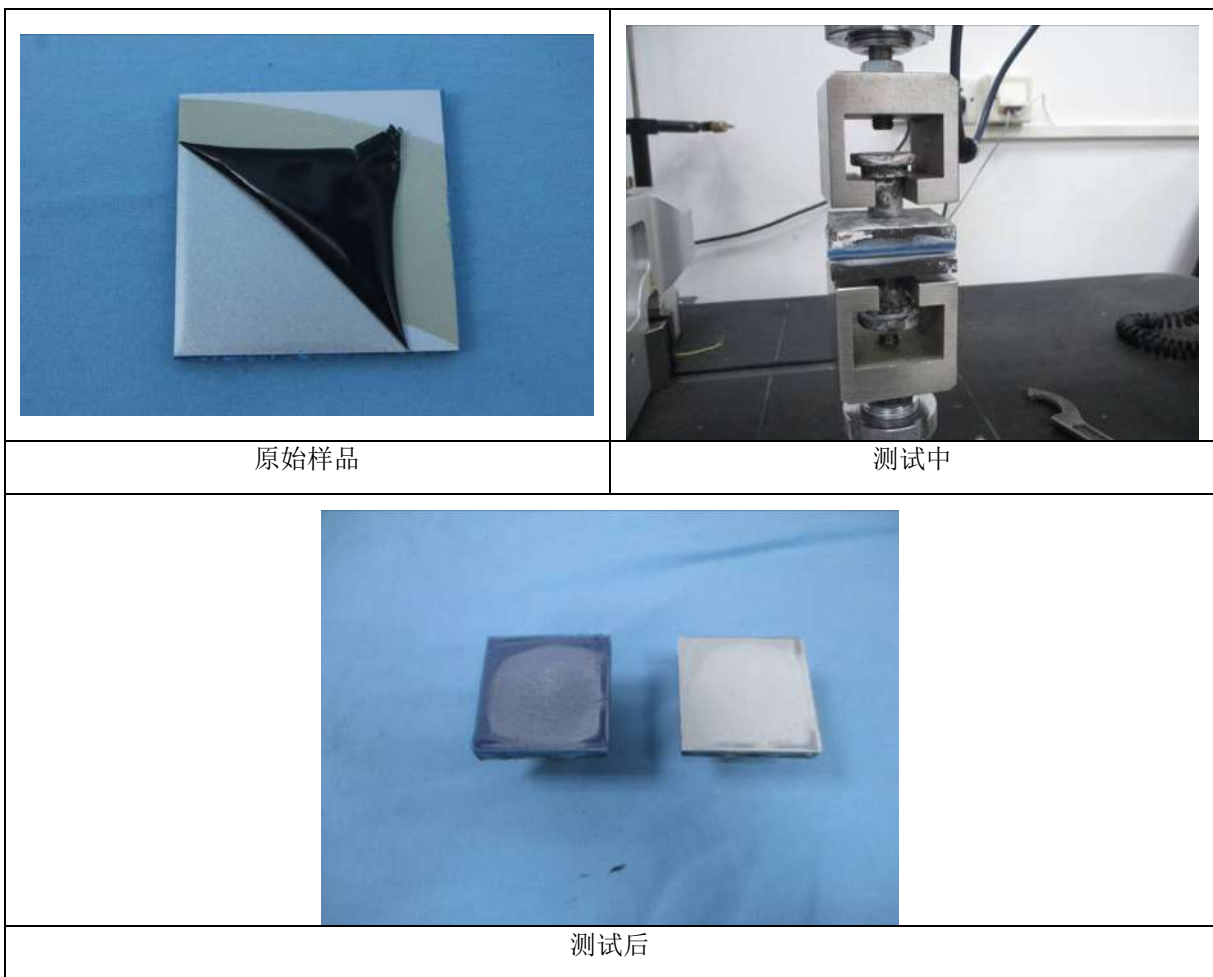
日期 : 2016.11.23

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备注:

1. 破坏类型: 面板-芯子的胶粘层内聚破坏。
2. 测试前撕掉试样的保护膜。

测试照片:



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23. 测试项目: 拉伸测试

样品描述: 见照片

测试方法: ASTM D638-14

测试条件:

试样: I 型

试样厚度: 4.27 mm

测试速度: 5 mm/min

夹头间距: 115 mm

实验室环境条件: 23 ± 2 °C, 50 ± 5 % RH

测试结果:

测试项目	测试结果
拉伸强度	48.6 MPa
拉伸屈服应力	48.6 MPa

备注:

1. 测试前撕掉试样的保护膜。
2. 测试试样从样品中截取。



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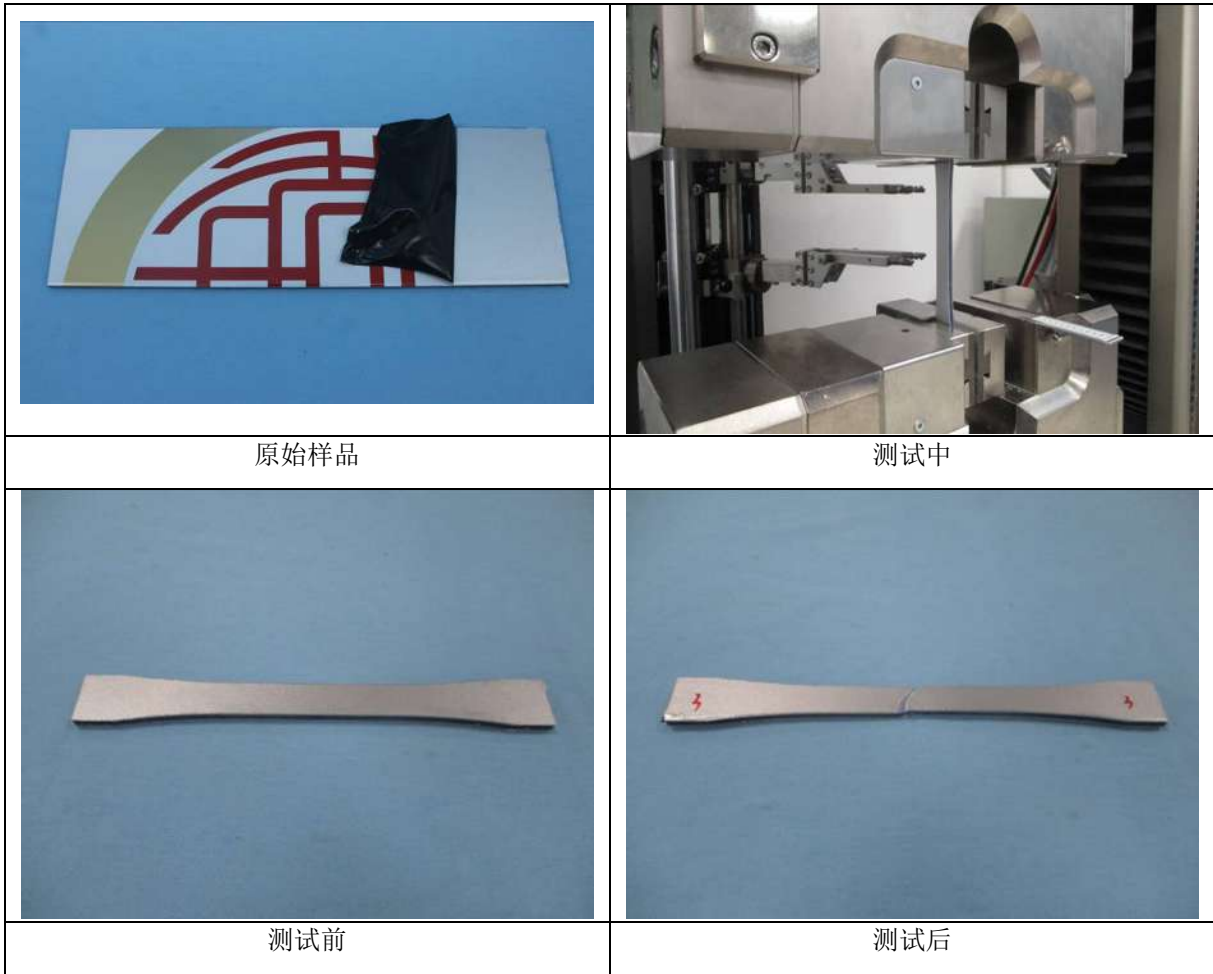
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24. 测试项目: 平面剪切强度

样品描述: 见照片

测试方法: ASTM C273/C273M-16

测试条件:

试样: 60 mm × 50 mm × 4.20 mm

试样芯子厚度: 3.39 mm

测试速度: 0.5 mm/min

测试类型: 拉伸测试

实验室环境条件: 23 ± 2 °C, 50 ± 5 % RH

测试结果:

测试项目	测试结果
平面剪切强度	6.65 MPa (见备注 1)
平面剪切模量	33.3 MPa

备注:

1. 破坏类型: SGM。
2. 测试前撕掉试样的保护膜。
3. 测试试样从样品中截取。
4. 此测试报告是报告编号 GZIN161001906CCM 的中文译本, 中英文版本如有歧义, 概以英文版为准。



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Guangzhou Branch Testing Service Construction Material Laboratory

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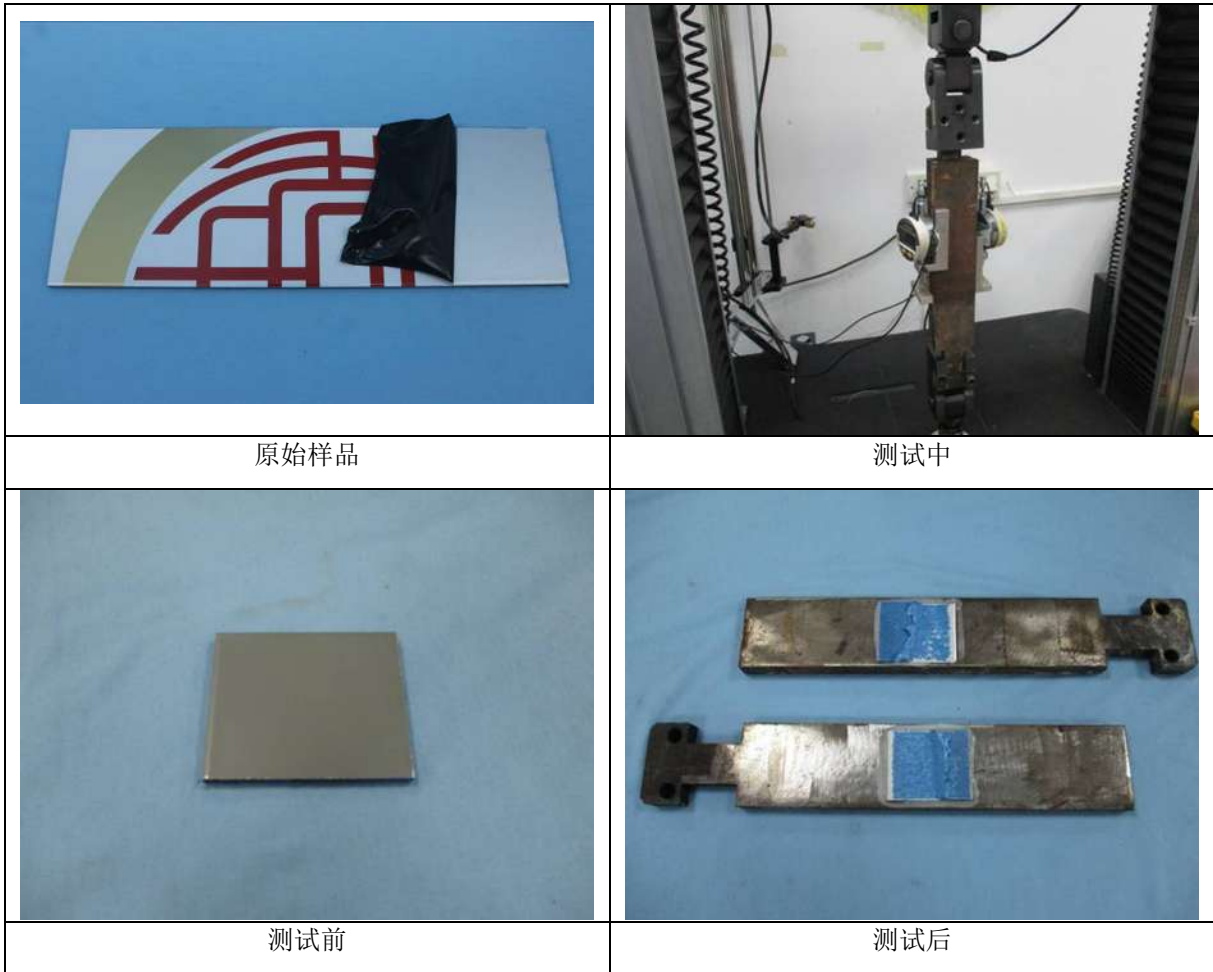
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