

加工玻璃质量控制程序

QUALITY CONTROL PROCEDURE OF THE PROCESSING GLASS

济南长荣玻璃有限公司

JINAN EVERGREEN GLASS CO LTD

编制：

审核：

批准：

加工玻璃质量控制程序

QUALITY CONTROL PROCEDURE OF THE PROCESSING GLASS

一、加工玻璃产品认证 (processed glass product certification)

中国国家安全玻璃 3C 产品认证

CCC China Safety Glass Certification

中国国家中空玻璃认证

China insulating Glass Certification

美国 SGCC 安全玻璃认证

SGCC Certification (USA)

美国 IGCC 中空玻璃认证 (ASTM E 2190.....)

IGCC Certification (USA) 澳大利亚和新西兰标

准认证 (AS/NZS2208.....) Australia and New

Zealand Certification

Float Glass 浮法玻璃 ASTM C1036 (Q3等级以上)
& AS/NZS4667&AS/NZS1288

Tempered glass 钢化玻璃
AS/NZS 2208&ASTM C1172

Heat strengthen glass 半钢化玻璃
&Frit glass 彩釉玻璃

ASTM C1048/1651

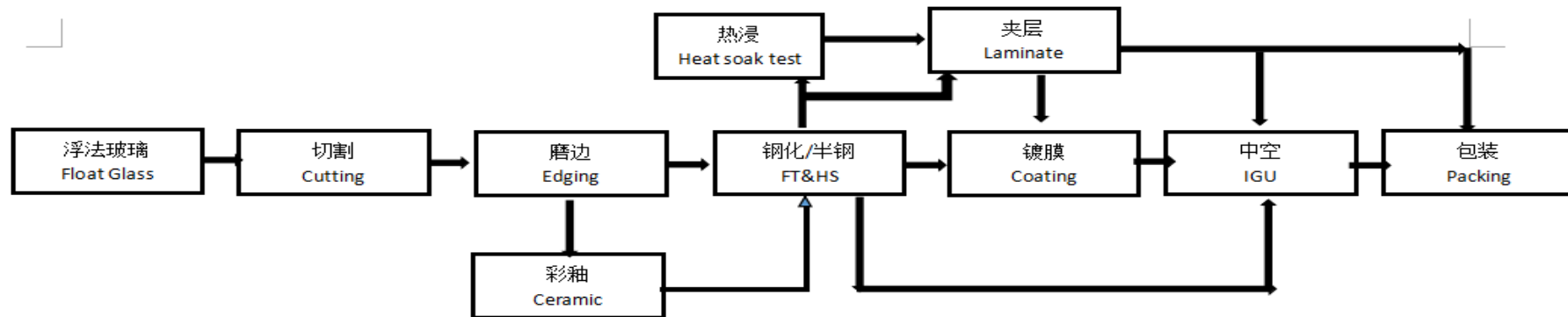
Heat Soak Test 热浸处理 BS EN 14179-1 & EN14179-2标准
按2016版热浸标准认证

Low-E glass 低辐射玻璃
ASTM C1376

Insulated glass 中空玻璃
AS/NZS 4666 & ASTM E 2190

Laminated glass 夹胶玻璃
AS/NZS 2208:1996&ASTM C1172&ISO12534

加工玻璃生产流程(Glass production process)



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二、加工玻璃质量控制程序 (QUALITY CONTROL PROCEDURE OF THE PROCESSING GLASS)

1. 原片 (Raw glass)

序号 NO.	工序名称 Process name	控制项目 The items to control the quality	控制标准 Control standards	检查设备和工具 The Equipment and Tools for checking	测试频次 Frequency to check	备注 Notes
1	原片浮 法玻璃 Float glass	原片 Raw glass	参照 ASTM 标准 C1036- Q3 Refer to ASTM C1036-Q3	目测 Visual check	每包一次 Once a package	
		厚度公差 Thickness tolerance	6mm \pm 0.2 8~12 \pm 0.3mm	千分尺 Micrometer	每批次一片 Once per a batch	
			15mm \pm 0.5			

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2. 切磨(Cutting and Grinding)

序号 NO.	工序名称 Process name	控制项目 The items to control	控制标准 Control standards		检查设备和工具 The Equipment and Tools for checking	测试频次 Frequency to check	备注 Notes
2	切割/磨边 Cutting / Grinding	玻璃流转信息 glass flow information	卡物一致 Glass in conformity with card		目测 Visual check	每架一次 Once per a rack	1. S:玻璃面积 (m ²) 2. 中心区域是 指 各边边长 80%的长 度所 限定的矩形 区 域, 之外的区 域 为边部区域 。 1. S: area of one plate glass(m ²). 2. The central area is considered to form a rectangle defined by the center 80 % of the length and width dimensions centered on a lite of glass. The remaining area is considered the outer area.
		尺寸公差 Dimensional tolerance	L≤2000	L>2000	卷尺 Tape	抽检 (1 次/2 小 时) Sampling inspection(on e per 2 hour)	
			±2	+ 2, -3			
		对角线公差 The diagonal tolerance	≤3mm				
		边部质量 Edge quality	爆边: 穿透厚度≤1/2d、平面方向≤2mm、长度≤d, (d 为玻璃厚度) chips:Depth≤1/2d, Horizontal≤2mm, Length≤d, (d:glass thickness)		卷尺/钢直尺/读数显 微 镜 Tape/ Steel ruler/ Reading microscope		
		外观质量 Appearance quality	点状缺陷 Point blemishes	允许个数 Allowed number			
			φ ≤0.5mm	允许 Allowed			
			0.5mm < φ ≤1.5mm	3 个/ 片 3 /			
			1.5mm < φ ≤2.0mm	2 个/ 片 2 /			
			φ >2mm	不允许 None allowed			
点状缺陷间距不小于 300mm Allowed with a minimum separation of 300 mm							
	划伤: 中心区域≤50*0.5mm 边部区域≤ 75*0.5mm Scratches: Central area≤ 50*0.5mm Edge area	每片玻璃允许 1*S 1*S/piece					

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3. 彩釉 (Silk-screen printing)

序号 NO.	工序名称 Process name	控制项目 The items to control the	控制标准 Control standards	检查设备和工具 The Equipment and Tools for checking	测试频次 Frequency to check	备注 Notes				
3	彩釉 Silk-screen printing	玻璃清洗 Glass washing	无水迹和污染物 No obvious water trace and contaminant	目测 Visual check	全检 Whole quanti	<p>1、非可视彩釉玻璃观察条件应在观察表面的反色光下进行,玻璃样片垂直放在一个不透明背景的材料支架上,距离样片 3 米处观察样片玻璃面。</p> <p>2、中心区域是指各边边长 80% 的长度所限定的矩形区域,之外的区域为边部区域。1. The ceramic frit spandrel Glass shall be supported in a vertical position in front of an opacity background, inspected in reflection, at a distance of 3m.</p> <p>2. The central area is considered to form a rectangle defined by the center 80 % of the length and width dimensions centered on a lite of glass. The remaining area is considered the outer area.</p>				
		尺寸公差 Dimensional tolerance	参照切、磨 Refer to cutting and grinding	目测 Visual check	抽检 (1 次/半小时) Sampling inspection (once per half hour)					
		缺陷 Defects	控制要求 Standards of control							
			针孔\疵点 Pinhole /spot				直径 Diameter	$\phi \leq 0.5$	$0.5 < \phi \leq 2.0$	$2.5 < \phi$
							中部区域 Central area	不允许集中	3*S	0
		边部区域 Edge area					不限	6*S	0	
		釉料划伤 The scratch of the frit	宽 $\leq 0.1\text{mm}$ Width $\leq 0.1\text{mm}$				$0.1\text{mm} < \text{宽} \leq 0.5\text{mm}$ $0.1\text{mm} < \text{Width} \leq 0.5\text{mm}$	$0.5\text{mm} < \text{宽} < 0.5\text{mm}$ Width		
			长度 $\leq 50\text{mm}$, 4*S L $\leq 50\text{mm}$, 4*S				长度 $\leq 50\text{mm}$, 1*S L $\leq 5\text{mm}$, 1*S	不允许 None allowed		
		丝网印 Silk-screen printing	3 米观察不明显允许 It shall not be visible from a distance of 3m							
		耐酸性 acid resistance	参照标准 ASTM C 1048 Refer to ASTM C 1048				盐酸溶液 Hydrochloric acid solution	每周 1 次 Once per 7 days		
耐碱性 Alkali resistance	参照标准 ASTM1048-18 Refer to ASTM1048-18			NaOH 溶液 NaOH solution	每周 1 次 Once per 7 days					

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3. 彩釉

序号 NO.	工序名称 Process name	控制项目 The items to control the quality	控制标准 Control standards					检查设备和工具 The Equipment And Tools for checking	测试频次 Frequency to check	备注 Notes	
3	可视图案彩釉玻璃 Ceramic frit vision Glass	玻璃清洗 Glass washing	无水迹和污染物 No obvious water trace					目测 Visual check	全检Whole quantity	1、集中是指在任一直径 300mm 圆面积内超过 20 个 2、中心区域是指各边边长 80% 的长度所限定的矩形区域，之外的区域为边部区域。 3、S: 玻璃面积 (m ²) 1、In Dense means more than 20pcs in any circle of D300mm. 2、The central Area is Considered to form a rectangle defined by the center 80% of the length and width dimensions centered on a lite of glass. The remaining area is considered the outer area. 3、S: area of one plate glass (m ²).	
		尺寸公差 Dimensional tolerance	参照切、磨 Refer to cutting and grinding					目测/卷尺/钢直尺 Visual check Tape/ Steel ruler	抽检(1次/半小时) Sampling inspection (once per half hour)		
		针孔 Pinhole	直径 Diameter	$\phi \leq 0.5$	$0.5 < \phi \leq 1.2$	$1.2 < \phi \leq 2.5$	$2.5 < \phi$				
			中部区域 Central area	不允许集中 Not allowed the focus	4*S	2*S	0				
			边部区域 Edge area	不限 Unlimited	8*S	4*S	0				
		外观质量 Appearance quality	釉料划伤 The scratch of the frit	宽度 Width	宽 $\leq 0.1\text{mm}$ W $\leq 0.1\text{mm}$	0.1mm < 宽 $\leq 0.5\text{mm}$ 0.1mm < W $\leq 0.5\text{mm}$					0.5mm < 宽 0.5mm < W
			长度 Length	长度 $\leq 50\text{mm}$, 4*S L $\leq 50\text{mm}$, 4*S	长度 $\leq 30\text{mm}$, 1*S L $\leq 30\text{mm}$, 1*S		不允许 None allowed				
		图案完整 Pattern discrepancy	距离玻璃 2 米处不易见 Imperfections shall not be easy to see from a distance of 2					色差计 Color difference meter			
色差 The color difference	室外 3 米观察釉面无明显色差 The color difference shall not be visible from a distance of 3 m in outside.										

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4. 钢化

序号 NO.	工序名称 Process name	控制项目 The items to control the quality	控制标准 Control standards	检查设备和工具 The Equipment and Tools for checking	测试频次 Frequency to check	备注 Notes
4	钢化/半钢化 Fully tempering /heat- strengthening	玻璃流转信息 glass flow information	卡物一致 Glass in conformity with card	目测 Visual check	每架一次 Once per a rack	
		玻璃尺寸及外观质量厚度 Dimensional/ Appearance	同切、磨玻璃质量要求 Refer to cutting and grinding - 按 AS/NZS 2208:1996 测量玻璃长、宽尺寸、厚度、对角线	卷尺/钢直尺 Tape/ Steel ruler	抽检(1次/两小时) Sampling inspection(once per 2 hours)	
		弯曲变形 Bow and warp	弯曲度 $\leq 0.2\%$, 边部翘曲 ≤ 0.20 (距边部 20%的范围内), 波筋 $\leq 0.10\text{mm}$, 彩钢玻璃波筋 ≤ 0.20 Overall bow $\leq 0.2\%$, edge curl ≤ 0.20 (within 20% from glass edge), roller wave $\leq 0.10\text{mm}$ over 300mm span (peak to trough), roller wave of enameled tempered glass $\leq 0.20\text{mm}$	细线和玻筋仪 String, roll wave measurement		
		表面应力 Surface stress	半钢: 24~52MPa Heat strengthened: 24~52MPa 全钢: 不应小于 69MPa Fully tempered: $\geq 69\text{MPa}$	应力仪 Stress gauge		
		碎片试验 Fragmentation test	全钢碎片: 4~12mm 颗粒数 ≥ 40 粒 $\geq 15\text{mm}$ 颗粒数 ≥ 30 粒 Fully tempered: 4~12mm number of particles ≥ 40 $\geq 15\text{mm}$ number of particles ≥ 30	1100mm*360mm 框 /50mm*50mm 框/冲击锤 1100mm*360mm wooden platform, 50mm*50mm mask, centre-punch		
		霰弹袋冲击试验(钢化) Impact test (for kind fully tempered)	参照 AS/NZS 2208 Refer to AS/NZS 2208	霰弹袋冲击试验装置 Impact test frame	2 个月 1 次 Once/2 months	
		钢化玻璃热浸 Heat Soak for fully tempered glass	参照标准 EN14179-2016 Refer to EN14179-2016	热浸炉 Heat Soak Oven	根据客户要求 As per customer's requirements	
		抗冲击性能(钢化) Ball drop test(for kind fullytempered)	参照标准 AS2208 Refer to AS2208	钢球、落球冲击试验架 Ball, Ball drop test frame	2 个月 1 次 Once/2 months	

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5、弯钢化

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5	弯半钢化 Bend heat- strengthening	玻璃流转信息 glass flow information	卡物一致 Glass in conformity with card			目测 Visual check	每架一次 Once per a rack	
		玻璃尺寸 Dimensional	拱高 Height Tolerance s	厚度 $\leq 12\text{mm}$ thickness $\leq 12\text{mm}$	厚度 $> 12\text{mm}$ thickness $> 12\text{mm}$		卷尺/钢直尺 Tape/ Steel ruler	内圆弧 (每片) Inner curve each piece
				$L \leq 2000\text{mm}$: $\pm 3\text{mm}$	$L \leq 2000\text{mm}$: $\pm 4\text{mm}$			
			$L > 2000\text{mm}$: $\pm 4\text{mm}$	$L > 2000\text{mm}$: $\pm 4\text{mm}$				
			弧长 Girth Tolerances	$L \leq 2000\text{mm}$: $\pm 3\text{mm}$	$L \leq 2000\text{mm}$: $\pm 4\text{mm}$			
				$L > 2000\text{mm}$: $\pm 4\text{mm}$	$L > 2000\text{mm}$: $\pm 4\text{mm}$			
				$3\text{mm} \leq \text{thickness} \leq 6\text{mm}$	$8\text{mm} \leq \text{thickness} \leq 12\text{mm}$	thickness >		
			$L < 1000\text{mm}$	$\pm 2\text{mm}$	$\pm 2\text{mm}$	$\pm 4\text{mm}$		
			$1000 \leq L < 2000\text{mm}$	$\pm 3\text{mm}$	$\pm 3\text{mm}$	$\pm 4\text{mm}$		
		$L > 2000\text{mm}$	$\pm 3\text{mm}$	$\pm 3\text{mm}$	$\pm 4\text{mm}$			
表面应力 Surface stress	弯半钢: $24 \sim 52\text{MPa}$ Bend Heat strengthened: $24 \sim 52\text{MPa}$			应力仪 Stress gauge				
	弯全钢: 不应小于 90MPa Bend Fully tempered: $\geq 90\text{MPa}$							

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6. 夹层(Laminating)

序号 NO.	工序名称 Process name	控制项目 The items to control the quality	控制标准 Control standards		检查设备和工具 The Equipment and Tools for checking	测试频次 Frequency to check	备注 Notes
6	夹层 Laminating	玻璃清洗 Glass washing	无水迹和污染物 No obvious water trace		目测 Visual check	全检 Whole quantity	
		玻璃流转信息 glass flow information	卡物一致 Glass in conformity with card		目测 Visual check	每架一次 Once per a rack	
		PVB 的含水率 Moisture content of PVB	参照供应商要求 According to the supplier's specification		含水率测试仪 Moisture content of PVB gauge	每班、每更换规格 Once per a shift, once per a type changed	
		合片室的相对湿度 Relative humidity of atmosphere in	参照供应商要求 According to the supplier's specification		温湿度测量仪 Temperature and humidity meter	每班 Once per a shift	
		合片室的温度 Air temperature in clean room	参照供应商要求 According to the supplier's specification		温湿度测量仪 Temperature and humidity meter	每班 Once per a shift	
		叠差 Mismatch	L≤2000mm	L>2000mm	卷尺/钢直尺 Tape/ Steel ruler	抽检 (1 次/2 小时) Sampling inspection (once per 2 hours)	
		Reference Edge≤1mm , other side≤2mm	Reference Edge≤1mm , othe side≤2.5mm				

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6. 夹层(Laminating)

序号 NO.	工序名称 Process name	控制项目 The items to control the quality	控制标准 Control standards		检查设备和工具 The Equipment and Tools for checking	测试频次 Frequency to check	备注 Notes		
6	夹层 Laminating	外观缺陷 Apparent defects	点状缺陷 Point blemishes	允许个数 Allowed number	卷尺/钢直尺/读数显微镜 Tape/ Steel ruler/ Reading microscope	抽检 (1 次/2 小时) Sampling inspection (once per 2 hours)	1. S:玻璃面积 (m ²) 2. 中部区域是指各边长 80% 的长度所限定的矩形区域, 之外的区域为边部区域。 1. S: area of one plate glass (m ²) 2. The central area is considered to form a rectangle defined by the center 80 % of the length and width dimensions centered on a lite of glass. The remaining area is considered the outer area.		
			$\phi \leq 0.5\text{mm}$	允许 Allowed					
			$0.5\text{mm} < \phi \leq 1.0\text{mm}$	不允许集中 (3 处以上集中出现在 <200mm 范围内称之为集中出现) No concentrated (In Dense means more than 3pcs in any circle of D200mm.)					
			$1.0\text{mm} < \phi \leq 3.0\text{mm}$	$S \leq 2m^2$ 1 个 $S > 2m^2$ 1 个/m ²					
			$3.0\text{mm} < \phi$	不允许 None allowed					
		线状缺陷 Linear blemishes	中部区域 $\leq 50*0.5\text{mm}$ Central area $\leq 50*0.5\text{mm}$	1*S					
			边部区域 $\leq 75*0.5\text{mm}$ Edge area $\leq 75*0.5\text{mm}$	1*S					
		煮沸试验 Boil test	参照 AS/NZS 2208 Refer to AS/NZS 2208					目测、钢直尺 Visual check Steel ruler	每天一次 Once in 24h
		霰弹袋冲击 Impact test	参照 AS/NZS 2208 Refer to AS/NZS 2208					霰弹袋冲击试验装置 Impact test frame	每二月一次 Once in 2 months
		耐辐照 UV test	参照 AS/NZS 2208 Refer to AS/NZS 2208					紫外线辐照箱 UV radiation test chamber	1 月 1 次 Once per 1 month
耐湿性 water-vapor Resistance	参照 AS/NZS 2208 Refer to AS/NZS 2208		恒温恒湿试验箱 high temperature & humidity test chamber	每二月一次 Once in 2 months					
落球冲击剥离性能试验 Ball drop test	参照 GB 15763.3-2009 Refer to GB 15763.3-2009		钢球、落球冲击试验装置 Ball, Ball drop test frame	每二月一次 Once in 2 months					

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7. 弯夹层 (Bend Laminating)

序号 NO.	工序名称 Process name	控制项目 The items to control the quality	控制标准 Control standards		检查设备和工具 The Equipment and Tools for checking	测试频次 Frequency to check	备注 Notes	
6	弯夹层 Bend	玻璃清洗 Glass washing	无水迹和污染物 No obvious water trace		目测 Visual check	全检 Whole quantity	全过程戴手套 (wearing gloves the whole process) 1. S:玻璃面积 (m ²) 2. 中部区域是指各边边长80%长度所限定的矩形区域, 之外的区域为边部区域。 1. S: area of plate glass (m ²) 2. The central area is considered to form a rectangle defined by the center 80 % of the length and width dimensions centered on a lite of glass. The remaining area is considered the outer area.	
		玻璃流转信息 glass flow information	卡物一致 Glass in conformity with card		目测 Visual check	每尺寸一次 Once per size		
		PVB的含水率 Moisture content of PVB	参照供应商要求 According to the supplier's specification		含水率测试仪 Moisture content of PVB gauge	每班、每更换规格 Once per a shift, once per a type changed		
		叠差 Mismatch	L ≤ 2000mm	L > 2000mm	卷尺/钢直尺 Tape/ Steel ruler	抽检 (每片) Sampling inspection (every piece)		
			≤ 3mm	≤ 4mm				
		缺陷 Blemish	area	≤ 2.5m ²	> 2.5m ²	卷尺/钢直尺/读数显微镜 Tape/ Steel ruler/ Reading microscope		抽检 (每片) Sampling inspection (every piece)
			气泡 Bubble	中部: φ ≤ 2.4mm 边部: φ ≤ 2.4mm Central: φ ≤ 2.4mm Outer: φ ≤ 2.4mm	中部: φ ≤ 1.6mm 边部: φ ≤ 2.4mm Central: φ ≤ 1.6mm Outer: φ ≤ 2.4mm			
内脏 Inside dirt	中部: φ ≤ 2.0mm 边部: φ ≤ 2.4mm Central: φ ≤ 2.0mm Outer: φ ≤ 2.4mm		中部: φ ≤ 1.6mm 边部: φ ≤ 2.4mm Central: φ ≤ 1.6mm Outer: φ ≤ 2.4mm					
Laminating	煮沸试验 Boil test	参照ANSI Z97.1 Refer to ANSI Z97.1		目测、钢直尺 Visual check Steel ruler	每天一次 Once in 24h			

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8. 镀膜 (Coating)

序号 NO.	工序名称 Process name	控制项目 The items to control the quality	控制标准 Control standards	检查设备和工具 The Equipment and Tools for checking	测试频次 Frequency to check	备注 Notes	
8	镀膜 Coating	玻璃流转信息 glass flow information	卡物一致 Glass in conformity with card	目测 Visual check	每架一次 Once per a rack	1. S:玻璃面积 (m ²) 2. 中心区域是指各边边长80%的长度所限定的矩形区域, 之外的区域为边部区域。 1. S: area of one plate glass (m ²) 2. The central area is considered to form a rectangle defined by the center 80 % of the length and width dimensions centered on a lite of glass. The remaining area is considered the outer area.	
		颜色控制 Colour control	$\Delta E \leq 2.5$	离线检测 Offline color check	首检和每四小时一次 First piece inspection and once per 4 hrs		
		外观质量 Appearance quality	针孔 Pinhole	中部区域 $\leq 1.5\text{mm}$ Central area $\leq 1.5\text{mm}$	灯箱/卷尺/钢直尺/ 读数显微镜 Lightbox /Tape/ Steel ruler/ Reading microscope		每车 Every batch
				边部区域 $\leq 2.0\text{mm}$ Edge area $\leq 2.0\text{mm}$			
				针孔在直径 300 圆形内, 不超过 3 个 Any of the circle with a diameter of 300mm, only allow three Pinholes.			
			划伤 scratch	中部区域 $\leq 50*0.5\text{mm}$, 允许 1*S Central area $\leq 50*0.5\text{mm}$, 1*S/piece			
				边部区域 $\leq 75*0.5\text{mm}$, 允许 1*S Edge area $\leq 75*0.5\text{mm}$, 1*S/piece			
				划伤在直径 300 圆形内, 不超过 3 个 Any of the circle with a diameter of 300mm, only allow three scratches.			
		耐磨性 Abrasion resistance	阳光控制镀膜玻璃: ASTM C 1376-16 Solar control coated glass: ASTM S1376-16	磨耗仪 Abrasion resistance tester	每月每客户牌号 1 次 Once per month for each customer		
		耐酸性 Acid resistance	阳光控制镀膜玻璃: ASTM S 1376-16 Solar control coated glass: Refer to ASTM S 1376-16	盐酸溶液、柠檬酸溶液 Hydrochloric acid solution, Citric acid solution	每月每客户牌号 1 次 Once per month for customer		
耐碱性 Alkali resistance	阳光控制镀膜玻璃: ASTM C 1376-16 Solar control coated glass: Refer to ASTM C1376-16	NaOH 溶液 NaOH solution	每月每客户牌号 1 次 Once per month for each customer				

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加工玻璃质量控制程序

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QUALITY CONTROL PROCEDURE OF THE PROCESSING GLASS

9. 中空(Insulating)

序号 NO.	工序名称 Process name	控制项目 The items to control the quality	控制标准 Control standards		检查设备和工具 The Equipment and Tools for checking	测试频次 Frequency to check	备注 Notes	
9	中空 Insulating	每批使用的铝管 The lot of applicable spacer	参照供应商要求 According to the supplier's specification		目测 Visual check	全检 Whole quantity		
		干燥剂批号 The used desiccant lot	参照供应商要求 According to the supplier's specification		目测 Visual check	每桶一次 Once / Package		
		使用丁基胶批次 Used Butyl lot	参照供应商要求 According to the supplier's specification		目测 Visual check	一次/每包装 Once / Package		
		次密封胶的批号 The lot of used secondary seal	参照供应商要求 According to the supplier's specification		目测 Visual check	每桶一次 Once / Package		
		检查玻璃流转信息 Check the glass flow information	卡物一致 Glass in conformity with card		目测 Visual check	每架一次 Once per a rack		
		外观质量 Appearance quality	针孔、划伤 Pinhole, scratch	同镀膜质量要求 Refer to coating		目测/卷尺/钢直尺 Visual check Tape/ Steel ruler	抽检（每小时一次） Sampling inspection(once per 1 hour)	
			腔内污点 Stain in cavity	距离 3 米观察，没有影响视觉 The imperfections shall not be visible from a distance of 3 m				
		厚度公差 Thickness tolerance	±1.5mm, 夹层中空±2.0mm ±1.5mm, Laminated insulating glass: ±2.0mm		卷尺 Tape			
		尺寸公差 Dimensional tolerance	$L \leq 2000$	$L > 2000$				
			±2	+2, -3				

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QUALITY CONTROL PROCEDURE OF THE PROCESSING GLASS

9. 中空(Insulating)

序号 NO.	工序名称 Process name	控制项目 The items to control the quality	控制标准 Control standards	检查设备和工具 The Equipment and Tools for checking	测试频次 Frequency to check	备注 Notes
9	中空 Insulating	叠差 Mismatch	基准边 ≤1mm, 其他边 ≤2mm Reference edge ≤1mm, The other side ≤2mm	目测/钢直尺 Visual check/Steel ruler	抽检 (每小时一次) Sampling inspection (once per 1 hour)	
		丁基胶 Butyl	≥3.5mm, 不允许断胶 ≥3.5mm, break of primary seal shall not be allowed.	目测/钢直尺 Visual check/Steel ruler		
		玻璃清洗 Glass washing	玻璃表面无水迹和污染物 No obvious water trace	目测 Visual check		
		分子筛温升试验 Temperature rise test of desiccant	温差 ≥35℃ Temperature difference of desiccant ≥35℃	温度计、量杯 thermometer, Measuring cup	每批一次 Once per a batch	
		混合比例 Mixture proportion	参照试验标准 Refer to test standard	拉断时间 Snap time test	每次开机、换胶	
		混合状况 Mixture condition	参照试验标准 Refer to test standard	蝶形试验、目测 Butterfly test, visual check	每次开机、换胶	
		粘结性 Adhesion	仅有内聚力破坏 only cohesion failure happen	撕裂试验、目测 Tear test, visual check	每天一次 Once in 24h	
		露点 Initial dew-point test	-40° C, 无内表面结露现象 No condensation on air space side at -40° C	露点仪 Dew-point apparatus	每周一次 (10 片) Once per 7 days	
		紫外试验 UV Test	参照标准 AS4666 Refer to AS4666	耐紫外辐照机 Ultraviolet radiation test chamber	每三月一次 Once in 3 months	

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QUALITY CONTROL PROCEDURE OF THE PROCESSING GLASS

序号 NO.	工序名称 Process name	控制项目 The items to control the quality	控制标准 Control standards	检查设备和工具 The Equipment and Tools for checking	测试频次 Frequency to check	备注 Notes
9	中空 Insulating	气体密封耐久性 The durability of the gas seal	参照标准 AS4666 Refer to AS4666	老化试验箱、sparklike 便携式氩气测试仪 The weather cycle test apparatus, Sparklike gasglass handheld	1 年 1 次 Once per 1 years	
		初始氩气含量 Initial content of argon	参照标准 AS4666 Refer to AS4666	sparklike 便携式氩气测试仪 Sparklike gasglass handheld	抽检(1 次/1 小时) Sampling inspection (once per 1 hour)	
		气候循环和高湿试验 Weather cycling test and high humidity test	参照标准 AS4666 Refer to AS4666	外检 (IGCC 指定实验室) Outside inspection (IGCC authorized designated laboratory)	1 年 1 次 Once per 1 years	
		雾化试验 Fog Test	参照标准 AS4666 Refer to AS4666	外检 (IGCC 指定实验室) Outside inspection (IGCC authorized laboratory)	1 年 1 次 Once per 1 years	

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QUALITY CONTROL PROCEDURE OF THE PROCESSING GLASS

10. 中空(Insulating)

序号 NO.	工序名称 Process name	控制项目 The items to control the quality	控制标准 Control standards	检查设备和工具 The Equipment and Tools for	测试频次 Frequency to check	备注 Notes	
10	弯中空 Bent Insulating	每批使用的铝管 The lot of applicable spacer	参照供应商要求 According to the supplier's specification	目测 Visual check	全检 Whole quantity	丁基胶大于3.5mm, PIB thickness is more than 3.5mm,	
		干燥剂批号 The used desiccant lot	参照供应商要求 According to the supplier's specification	目测 Visual check	每桶一次 Once / Package		
		使用丁基胶批次 Used Butyl lot	参照供应商要求 According to the supplier's specification	目测 Visual check	一次/每包装 Once / Package		
		次密封胶的批号 The lot of used secondary seal	结构胶和胶枪由SYP提供 Material provided by SYP including extruding gun 参照供应商要求 According to the supplier's specification	目测 Visual check	每桶一次 Once / Package		
		检查玻璃流转信息 Check the glass flow	卡物一致 Glass in conformity with card	目测 Visual check	每架一次 Once per a rack		
		外观质量 Appearance quality	针孔、划伤 Pinhole, scratch	同镀膜、彩釉质量要求 Refer to coating, ceramic printing	目测/卷尺/钢直尺 Visual check Tape/ Steel ruler		抽检 (每片) Every piece
			腔内污点 Stain in cavity	镀膜3米、彩釉4.5米观察, 没有影响视觉 The imperfections shall not be visible from a distance of 3 m. for coating, 4.5m for ceramics printing			
		厚度公差 Thickness tolerance	$\pm 1.5\text{mm}$, 夹层中空 $\pm 2.0\text{mm}$ $\pm 1.5\text{mm}$, Laminated insulating glass: $\pm 2.0\text{mm}$		卷尺 Tape		
		尺寸公差 Dimensional tolerance	$L \leq 2000$	$L > 2000$	卷尺 Tape		
			$\pm 3\text{mm}$	$+3, -4\text{mm}$			

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QUALITY CONTROL PROCEDURE OF THE PROCESSING GLASS

11. 包装、发运(Packing & ship out)

序号 NO.	工序名称 Process name	控制项目 The items to control the quality	控制标准 Control standards	检查设备和工具 The Equipment and Tools for checking	测试频次 Frequency to check	备注 Notes
11	包装、发运 Packing & ship out	玻璃流转信息 glass flow information	卡物一致 Glass in conformity with card	目测 Visual check	每架一次 Once per a rack	
		核对(按箱/架) Check up the pallet	卡物一致 Glass in conformity with card	目测 Visual check	全数 Whole quantity	
		产品目录、尺寸 Product category dimensions	根据客户规范 As specified by customer	目测 Visual check	全数 Whole quantity	
		包装质量 Packaging quality	根据包装规范 According to packing specification	目测 Visual check	全数 Whole quantity	

技术质量部

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