Solid Polycarbonate Sheet for Outdoor Project

-----Factory & Material Overview

ZhongShan GoodLife Sun Sheet Co.,Ltd.

Address: No.8, Yifu Road, Nantou Town, Zhongshan City, Guangdong Province, China.
Postal Code: 528427

For more information, please kindly visit our website:
polycarbonate-panels.com

Meeting Industry Needs with Reliable Solutions Since 2000

Zhongshan Goodlife Sun Sheet Co., Ltd., established in 2000, is a leading foreign-invested enterprise in China specializing in high-quality Polycarbonate panels and endurance panels. With over HKD 100 million invested in state-of-the-art production equipment from OMIPA (Italy) and premium raw materials from Bayer (Germany), we deliver exceptional products that meet global standards.

Quality Comes First! We ensure every polycarbonate sheet meets production standards, with uniform UV distribution and 10-year aging resistance, always focusing on customer satisfaction.

Our Equipment – OMIPA Production Line (Italy) with Swiss ABRO Feeding System

Our solid polycarbonate sheets are produced using an advanced OMIPA extrusion production line from Italy, integrated with a Swiss ABRO material feeding and dosing system — a combination that ensures superior product consistency and stability

OMIPA UV system

The OMIPA production line ensures:

- Stable extrusion process
- Precise thickness control
- Uniform sheet density
- Consistent surface quality

Combined with high-quality Bayer raw materials, our equipment allows us to produce solid polycarbonate sheets with excellent optical performance, stable mechanical strength, and long-term outdoor durability.

Swiss ABRO Feeding & Dosing System

The Swiss ABRO system delivers material into the extruder with highly accurate and consistent dosing, resulting in:
– Uniform raw material distribution
– No color variation (no color shift) across sheets
– Stable UV/IR masterbatch distribution
– Reliable performance from batch to batch

This level of ingredient control is critical for engineering-grade polycarbonate sheets, especially when dual-side UV protection and IR performance are required for outdoor applications.

Combined System Benefits

Together, the OMIPA production line and ABRO feeding system allow us to produce solid polycarbonate sheets with:
– High optical clarity and consistent color
– Stable mechanical performance
– Excellent weather resistance for long-term outdoor use

This combined equipment configuration provides a production advantage that supports project-level quality requirements, making our sheets reliable for architectural and outdoor engineering applications.

Raw Material System

Raw Material System – Bayer Polycarbonate

For solid polycarbonate sheets used in outdoor applications, raw material quality is critical.

We use Bayer polycarbonate raw materials as the base material, combined with a professional UV and IR system, to ensure stable performance under high temperature and strong sunlight conditions.

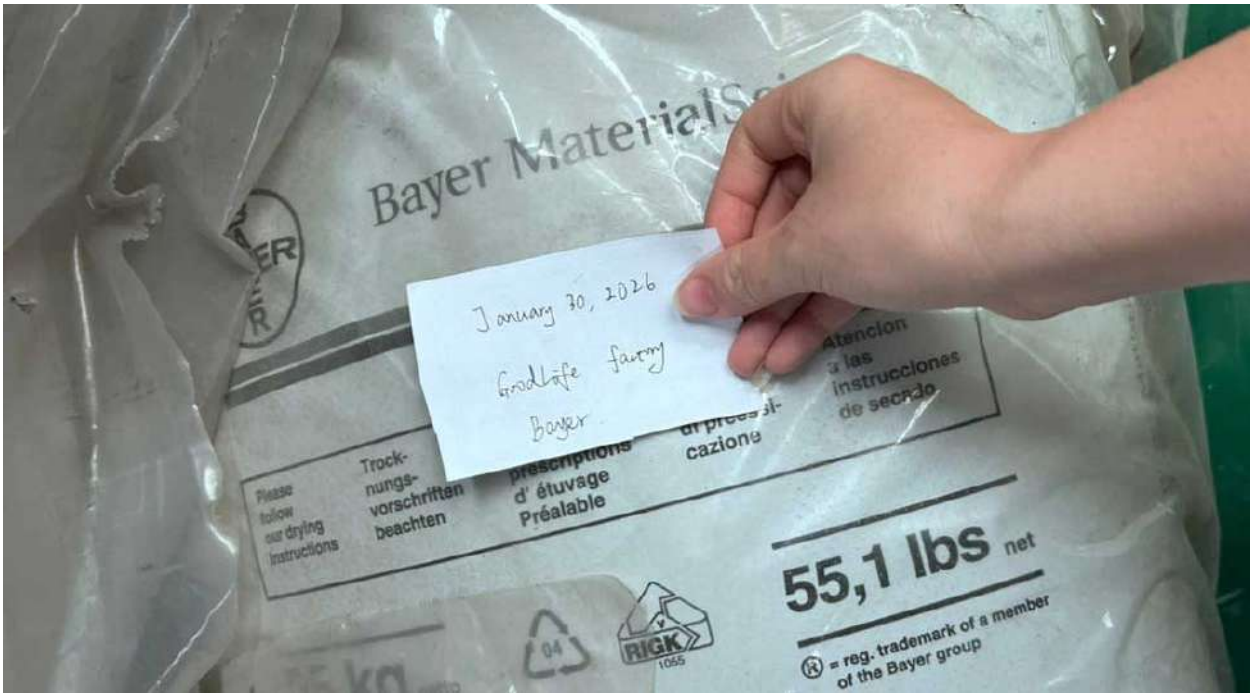
Bayer Polycarbonate Resin

Provides excellent impact resistance, transparency and mechanical stability, ensuring long service life for outdoor applications.

Bayer UV Protection System

Ensures uniform UV distribution on the sheet surface, effectively preventing yellowing, aging and performance degradation under long-term sunlight exposure.

Bayer IR System (Infrared Control)



Designed to reflect infrared radiation and reduce heat accumulation, improving thermal comfort while maintaining good light transmission.

Especially suitable for hot climate regions and outdoor roofing projects.

Certificates & Test Reports

The following certificates and test reports are provided to demonstrate the material system and previous test performance of our solid polycarbonate sheets.

Bayer

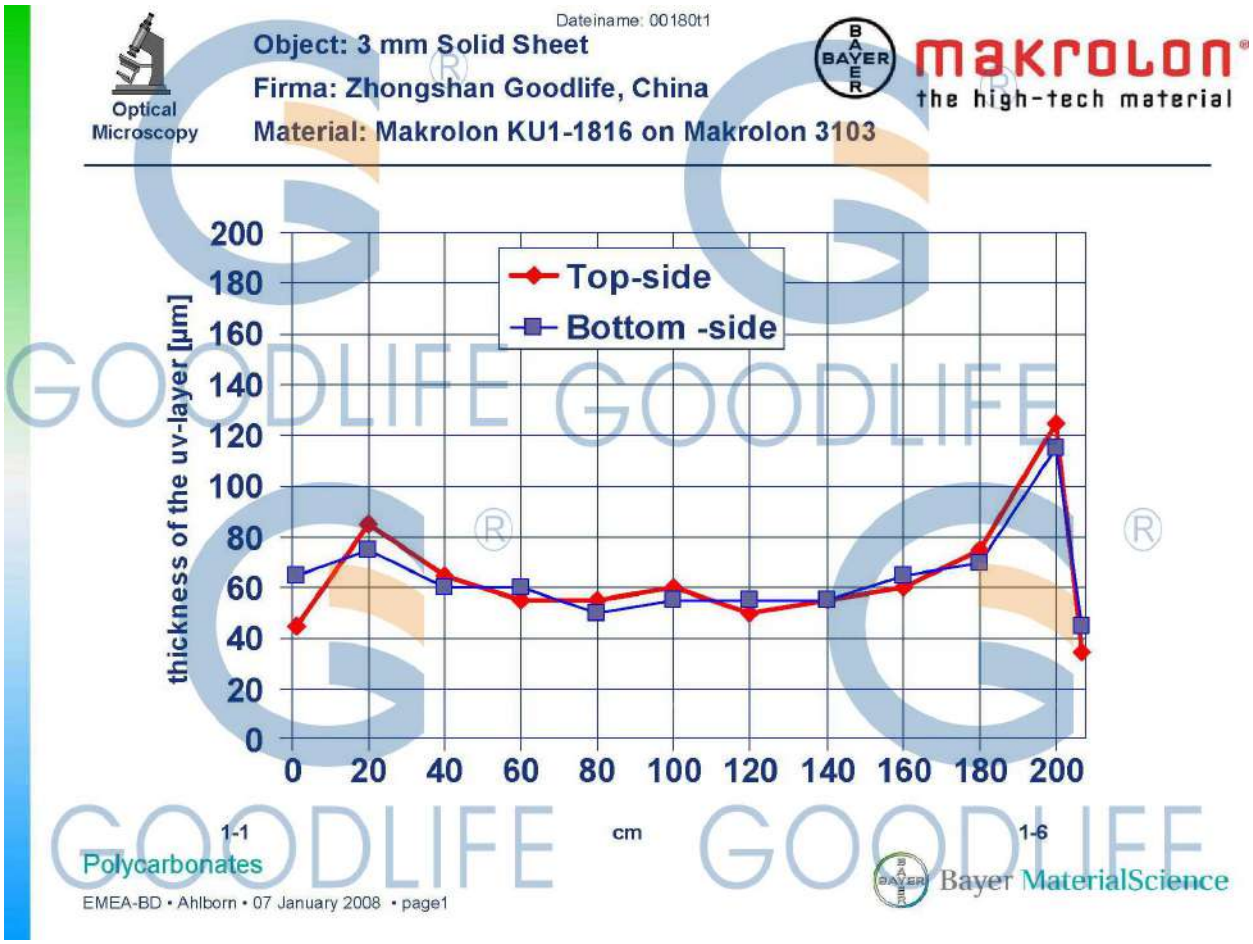
TO WHOM IT MAY CONCERN

It is to confirm that Zhongshan Goodlife uses Bayer's Makrolon® polycarbonate for multi-walled sheet and solid sheet applications.

Makrolon 1243 550115: For multi-walled sheet
Makrolon 3103 550115: For solid sheet
Makrolon DP1-1816 MAS 055 550054: UV cap layer material for both multi-walled and solid sheet
Makrolon DP1-1701 000000: anti-drip agent

Andy Tse
Head of Marketing Unit –Extrusion & Chemical Raw Materials, China
Bayer Polymers Co. Ltd.

Material certification from Bayer

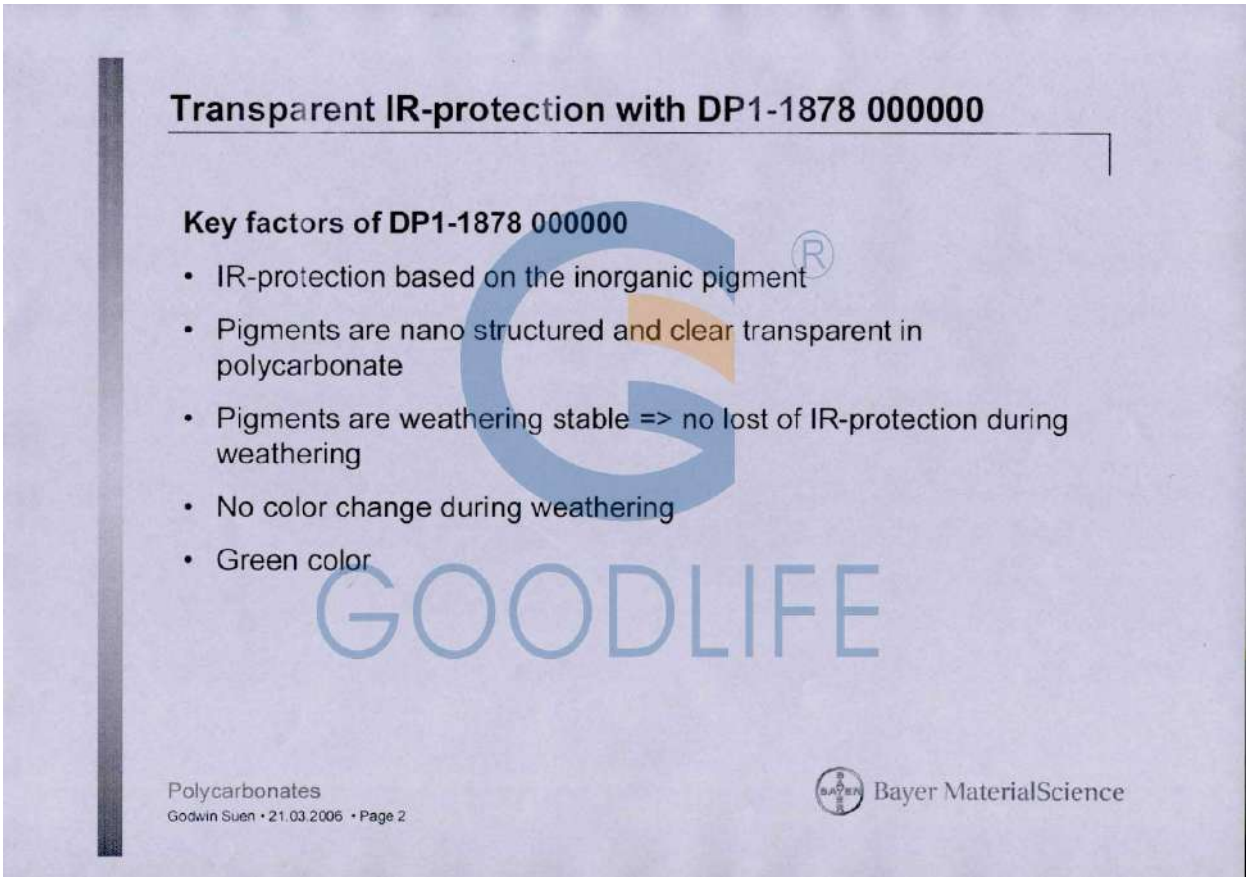


UV certificate from Bayer

Bayer Material Science

Transparent IR-protection Polycarboante sheet Guide


Bayer MaterialScience
Transparent IR-protection
for Polycarbonate Sheets
DP1-1878 000000
GOODLIFE
Polycarbonates
Godwin Suen • 21.03.2006 • Page 1


Transparent IR-protection with DP1-1878 000000
Key factors of DP1-1878 000000
• IR-protection based on the inorganic pigment
• Pigments are nano structured and clear transparent in polycarbonate
• Pigments are weathering stable => no lost of IR-protection during weathering
• No color change during weathering
• Green color
GOODLIFE
Polycarbonates
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Bayer MaterialScience

Transparent IR-protection with DP1-1878 000000

Mixtures of Makrolon 3103 550115 with Makrolon DP1-1878 000000

DP1-1878 %	1%	2%	3.2%	5%	8%
SC	0.79	0.69	0.61	0.53	0.43
g	0.69	0.60	0.53	0.46	0.38
Ty	79.9	73.7	65.4	58.5	44.2

SC: Shading Coefficient $\frac{\text{g value sample}}{\text{g value 3 mm glass}}$

g: energy transmittance

Ty: Light Transmission

Polycarbonates
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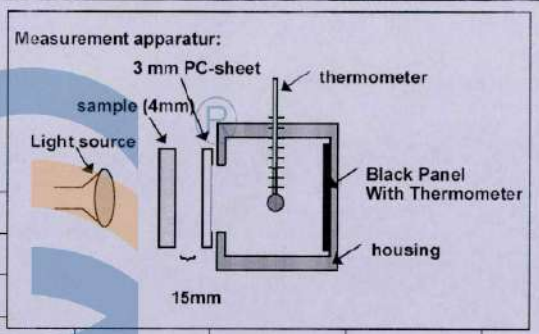
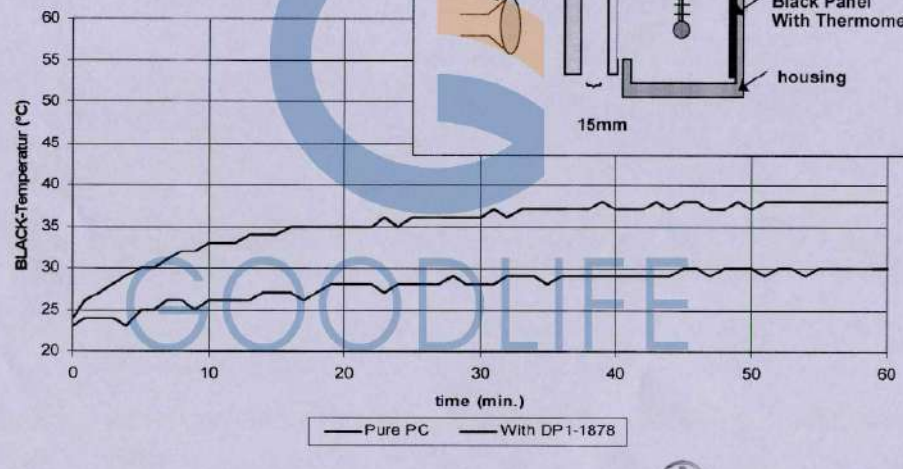
Transparent IR-protection with DP1-1878 000000

- No standardized (ISO) procedure available
- Practically relevant set-up chosen





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Transparent IR-protection with DP1-1878 000000

Standard colours including IR Protection

M.3100 751096 | M.3100 751095 | M.3100 551112

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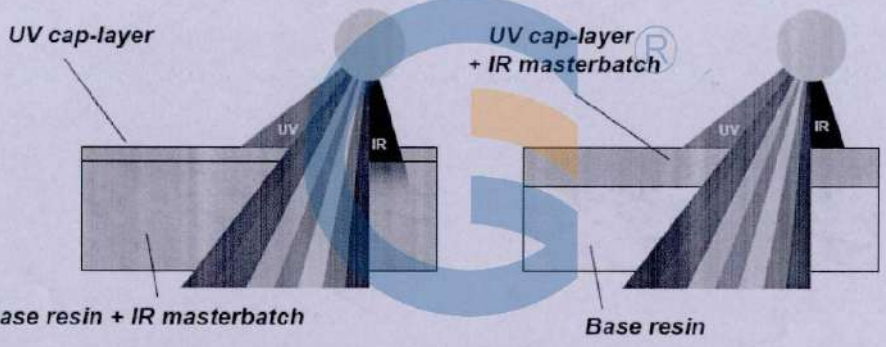
Bayer MaterialScience

Transparent IR-protection with DP1-1878 000000

Application of IR Protection: Solid Sheets



- For solid sheets, IR batch can either be added to the base resin or to the Coex layer.
- If IR batch is added to the coex layer, thickness should be increased in order to prevent from inhomogeneous colour distribution caused by variations in the coex layer thickness and to keep UV stability.

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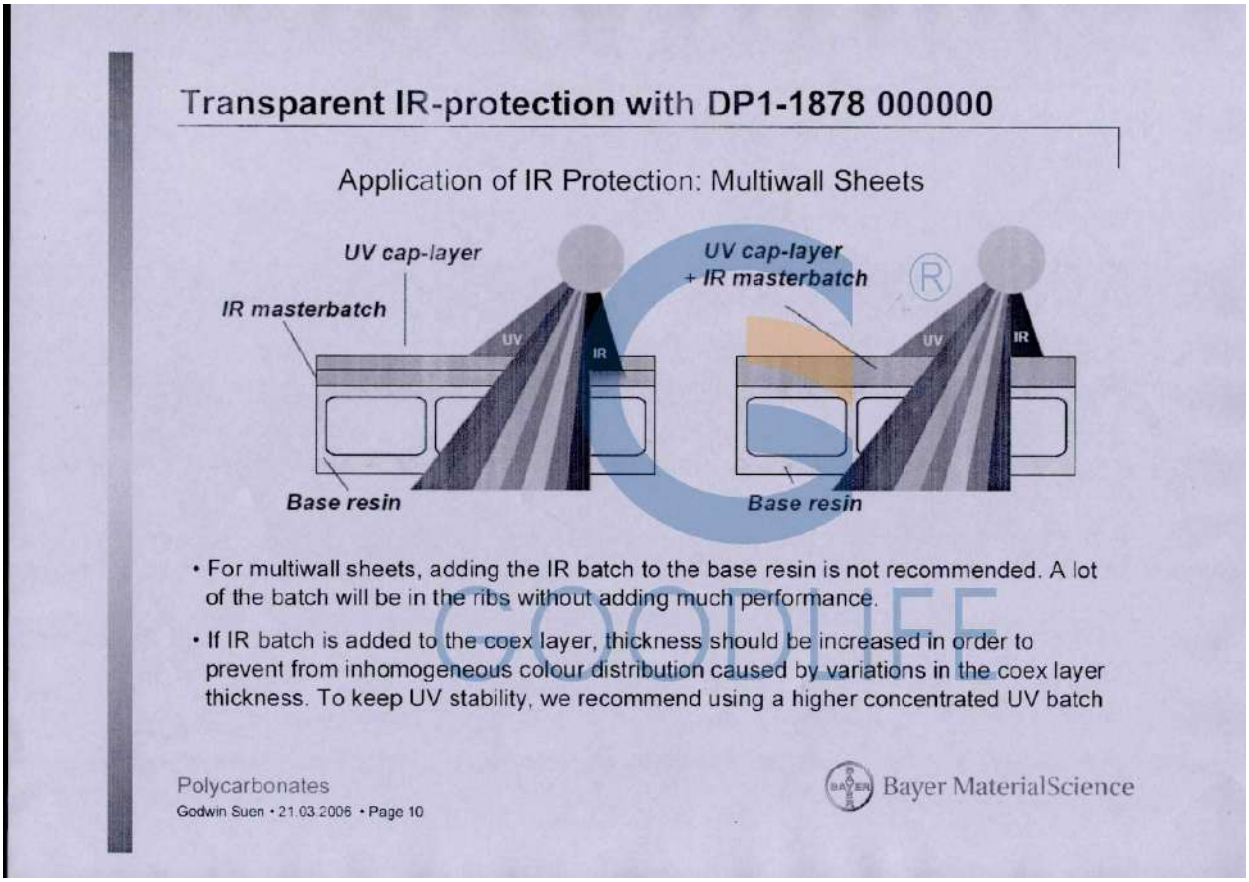
Transparent IR-protection with DP1-1878 000000
Application of IR Protection: Multiwall Sheets
UV cap-layer
IR masterbatch
UV cap-layer
+ IR masterbatch
UV
IR
UV
IR
Base resin
Base resin
• For multiwall sheets, adding the IR batch to the base resin is not recommended. A lot of the batch will be in the ribs without adding much performance.
• If IR batch is added to the coex layer, thickness should be increased in order to prevent from inhomogeneous colour distribution caused by variations in the coex layer thickness. To keep UV stability, we recommend using a higher concentrated UV batch
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Bayer MaterialScience

This is a high-tech product certificate issued by Guangdong Province, China, certifying that our Intelligent Temperature-Adjusting Sunlight Panel (IR Polycarbonate Sheet) was recognized as a high-tech product of Guangdong Province in 2011.

The color of the smart temperature-control sheet in this image is a blend of the **inherent green hue** from the **Bayer smart granules** and a specific portion of **blue masterbatch**. Close to green。

We once produced this 10mm solid panel with IR functionality in 2008 at the request of domestic customers and conducted relevant domestic tests. This was the sample from that time.

This is the **Bayer smart temperature-control sheet** in its **natural color** after adding **2% smart temperature-control masterbatch**. The resulting shade is close to a **yellowish-green**.

This product has been tested by an accredited Chinese third-party laboratory.
The test confirms its solar control and infrared absorption performance.
With a shading coefficient of 0.40, it effectively reduces solar heat gain.

Optical and Thermal Performance Test Reportfor Architectural Glazing Materials

建筑玻璃光学热工性能

检 测 报 告

试件名称：10mm 红外吸收型聚碳酸酯实心板

Sample Name:10 mm Infrared-Absorbing Polycarbonate Solid Sheet

委托单位：中山固莱尔阳光板有限公司

Client:Zhongshan GOODLIFE Sun Sheet Co., Ltd.

检测类别：来样、产品检测（普通送检）

Type of Test:Commissioned test, product testing (standard submission)

检测日期：2008 年 8 月 4 日

Date of Test:August 4, 2008

报告总页数：5（含此页）

Total Pages of Report:5 pages (including this page)

报告编号：B2008（11）0029

Report No.:B2008 (II) 0029

Guangdong Jianke Construction EngineeringQuality Testing Center

广东建科建筑工程质量检测中心

二〇〇八年八月五日

August 5, 2008

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Optical and Thermal Performance Test Reportfor Architectural Glazing Materials

建筑玻璃光学热工性能检测报告

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Test Personnel: Wang Lina

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审　　核：
Reviewed by: Ma Ming

批　　准：吴培浩
Approved by: Wu Ruifa

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For samples not taken by this institution, the test results apply only to the submitted samples.

检测报告专用章

2008 年 8 月 5 日

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广东建科建筑工程质量检测中心
Guangdong Jianke Construction EngineeringQuality Testing Center

建筑玻璃光学热工性能检测报告
Optical and Thermal Performance Test Reportfor Architectural Glazing Materials

Client:	委托单位	中山固莱尔阳光板有限公司 **our company name:GOODLIFE**		
Manufacturer:	生产厂家	中山固莱尔阳光板有限公司 **our company name:GOODLIFE**		
	工程名称	----------		
	工程所在地	----------		
Sample Name:	试件名称	10mm 红外吸收型聚碳酸酯实心板 **10 mm Infrared-Absorbing Polycarbonate Solid Sheet**		
Specification / Model:	规格	10mm 红外吸收型聚碳酸酯实心板 **10 mm Infrared-Absorbing Polycarbonate Solid Sheet**	商 标	----------
Sample No.:	试件编号	B20080039	样品数量 **Quantity of Samples:**	3 件 **3 pieces**
Type of Test:	检测类别	来样、产品检测（普通送检） **Commissioned test, product testing (standard submission)**	检测时间 **Date of Test:**	2008 年 8 月 4 日 **August 4, 2008**
	送检见证			
Test Standards:	检测依据及	GB/T 2680-1994 《建筑玻璃可见光透射比、太阳光直接透射比、太阳能总透射比、紫外线透射比及有关窗玻璃参数的测定》GB/T 2680-1994 **"Determination of Visible Light Transmittance, Solar Energy Transmittance, Ultraviolet Transmittance and Related Parameters of Architectural Glass"** 《建筑门窗玻璃幕墙热工计算规程》JGJ/T 151-2007 **Test Method: GB/T 151-2007**		
Test Items:	检测项目	可见光透射比、可见光反射比、遮阳系数 **Visible Light Transmittance/Visible Light Reflectance/Shading Coefficient**		
Test Instruments:	检测仪器	紫外/可见/近红外分光光度计、傅立叶变化红外光谱仪 **UV/Visible/Near-Infrared Spectrophotometer Fourier Transform Infrared Spectrometer**		
Test Results:	检测结果	1、可见光透射比：31 %； **Visible Light Transmittance: 31%** 2、可见光反射比：7 %； **Visible Light Reflectance: 7%** 3、遮阳系数：0.40。 **Shading Coefficient (SC): 0.40**		
Remarks:	备注	1、产品描述：10mm 红外吸收型聚碳酸酯实心板； **Product Description: 10 mm Infrared-Absorbing Polycarbonate Solid Sheet** 2、附图 3 张。 **Three attached figures**		

10 mm Infrared-Absorbing Polycarbonate Solid Sheet

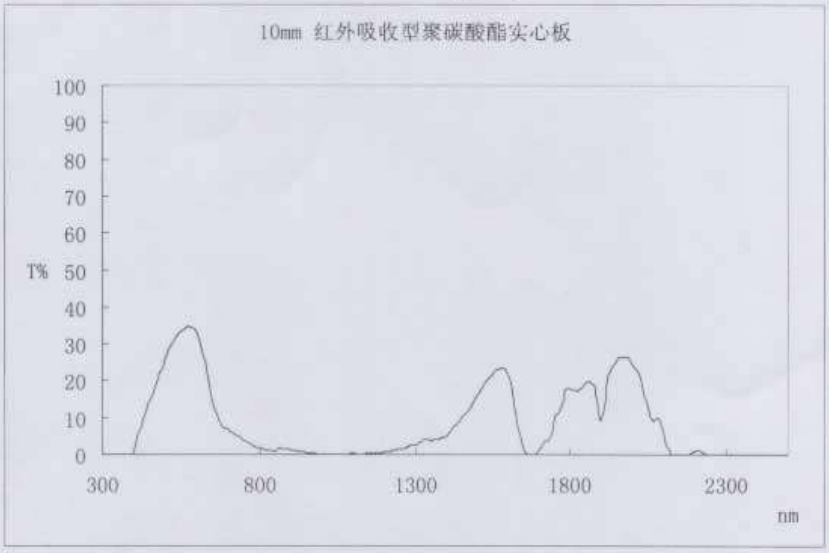

图 1 10mm 红外吸收型聚碳酸酯实心板太阳光透射比曲线

10 mm Infrared-Absorbing Polycarbonate Solid Sheet – Solar Transmittance Curve

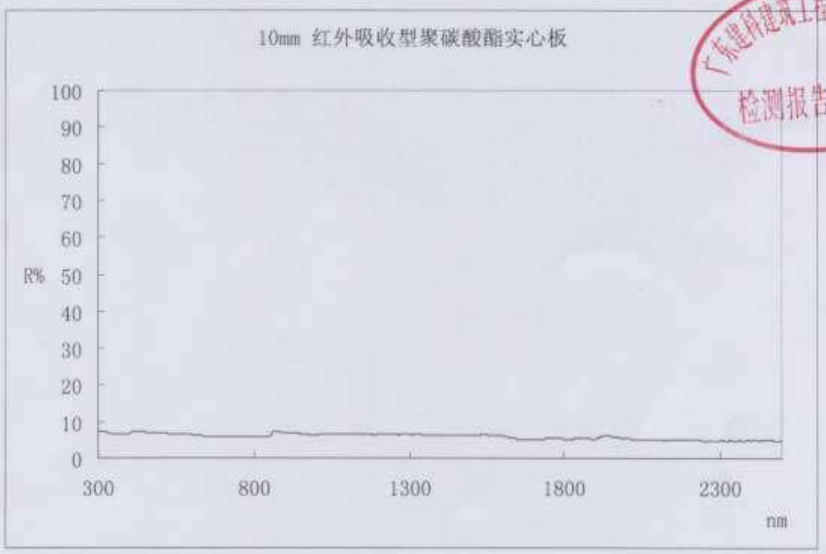

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图 2 10mm 红外吸收型聚碳酸酯实心板太阳光前、后面反射比曲线

10 mm Infrared-Absorbing Polycarbonate Solid Sheet – Visible Light Transmittance and Reflectance Curve

10 mm Infrared-Absorbing Polycarbonate Solid Sheet

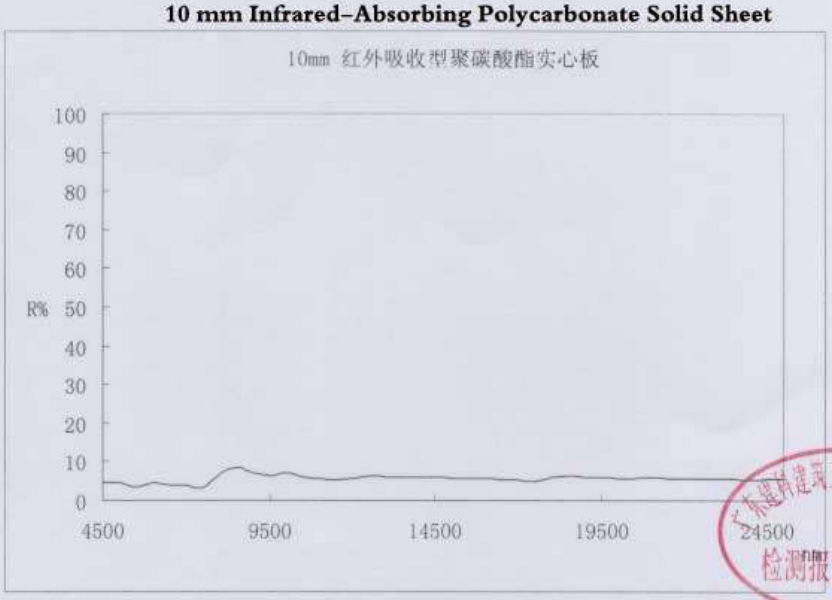


图 3 10mm 红外吸收型聚碳酸酯实心板热辐射光谱前、后面反射比曲线

10 mm Infrared-Absorbing Polycarbonate Solid Sheet – Infrared Reflectance Curve

（以下空白）

The above is the introduction of this product and the documents we already have. Regarding the 8mm solid polycarbonate sheet you inquired about, our OMIPA machine can produce it. The weight is 9.6 kg per square meter. It can be coated with UV protection on one side or both sides, with one-sided UV as the default. The choice depends on your needs. Considering your building, I recommend opting for double-sided UV. Our industry standard is 50MU, We can produce a UV coating thickness ranging from 50 to 100 microns, or more

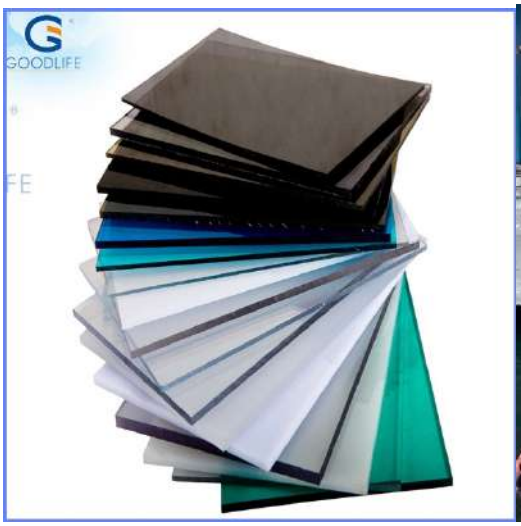
Our production line has a fixed width of 2.1 meters, with unlimited length. Therefore, if the required width is not 2.1 meters or a divisor of 2.1 meters (e.g., 1.05 meters), there will be material waste. For example, if you need a width of 1.22 meters, the waste would be 2.1 meters - 1.22 meters = 0.88 meters. We recommend choosing a width of 2.1 meters or 1.05 meters (a

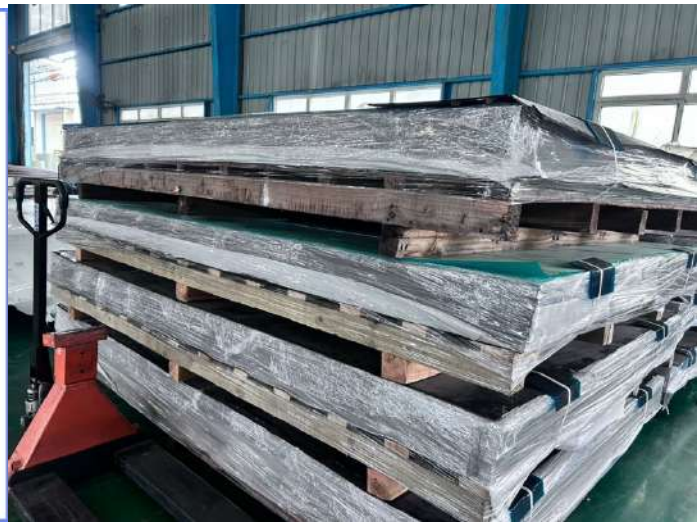
divisor of 2.1 meters, achieved by cutting in half during production). For length, there is no waste regardless of the size.

Due to the thickness, the sheets cannot be rolled and must be packaged flat. We recommend wooden pallet packaging, with 1.5 tons per pallet. Any color can be produced, but we hope the color requirements are not overly strict and that you can accept our existing color options, as creating custom color samples incurs high costs.

Please note one prerequisite: Bayer IR raw material inherently has a green tint. The more IR material used, the deeper the color will be.

The product and packaging are as shown in the images below.





Candice

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