

# Foundite

高端TPU膜材和EVA膜材专业制造商

PROFESSIONAL MANUFACTURER OF HIGH-END TPU & EVA Films

## 盛鼎高新材料有限公司

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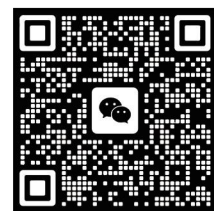
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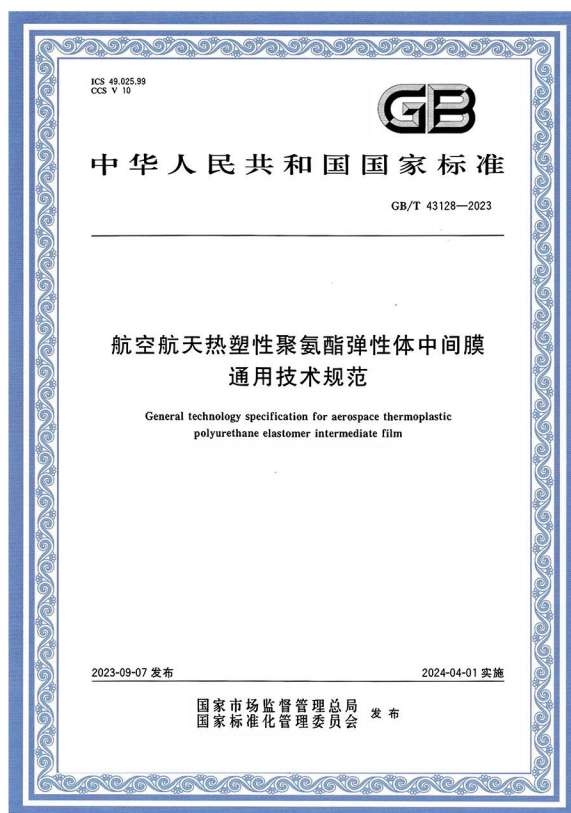
## CATALOGUE

### 《航空航天热塑性聚氨酯弹性体中间膜通用技术规范》 国家标准,主持起草单位

One of the main drafting units of national standard "General Technical Specification for Intermediate film of Thermoplastic Polyurethane Elastomers in Aerospace"

### 独具CNAS 认证的 TPU 中间膜检测中心.

Unique CNAS certified TPU interlayer film testing center.



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# Foundite

盛鼎高新材料有限公司位于山东省日照市岚山化工产业园区，是专注于高分子（TPU）材料和夹胶EVA膜材的研发生产、销售、服务于一体的国家高新技术企业。先后通过了ISO9001、ISO14001、ISO45001、DCMM、知识产权标准化体系认证。荣获山东省专精特新中小企业、山东省瞪羚企业山东省技术创新示范企业等荣誉称号。

公司凭借雄厚的技术力量，锲而不舍的工匠精神，在产品研发上心无旁骛、拔新立异，经过十几载的岁月时光，先后开发了一系列独树一帜的全新产品，并拥有66余项自主知识产权。主持编写的国家标准《航空航天热塑性聚氨酯弹性体中间膜通用技术规范》已于2023年9月发布，2024年4月实施。

公司依靠科技创新，突破了光学级热塑性聚氨酯弹性体（TPU）膜材的原材料合成与稳定造粒大宽幅TPU中间膜稳定挤出成型等核心技术壁垒。产品广泛应用于航空、舰船、装甲车辆、高速列车等玻璃透明件，防弹防爆、高端建筑安全玻璃飞机涂层防护，隐形车衣等领域，实现了进口替代。夹胶EVA膜材广泛用于装饰玻璃、普通建筑玻璃等领域。公司拥有先进的研发中心、实验室和现代化生产线，保证产品质量。公司生产的产品性能符合欧洲REACH、RoHS 和美国FDA质量要求，已出口墨西哥、巴西、俄罗斯、伊朗、新加坡、印度等国家和地区，产品已达到国际领先水平。

公司秉承绿色、可持续发展的经营理念，以顾客需求为中心，务求为顾客提供低成本、差异化、全方位的高质高效解决方案；坚持质量第一、顾客至上的质量方针，贯彻“一站式”服务宗旨，主动、有效、快捕地为顾客排忧解难，用专业化、规范化的服务与合作伙伴共创辉煌。

Shengding High-Tech Materials Co., Ltd. is located in the Lanshan Chemical Industrial Park, Rizhao City Shandong Province. It is a national high-tech enterprise dedicated to the research development production, sales and service of polymer (TPU) materials and laminated EVA films. The company has successively obtained certifications from ISO9001, ISO14001, ISO45001, DCMM, and intellectual property standardization systems. It has been honored with titles such as Shandong Specialized Refined Unique, and Innovative Small and Medium-sized Enterprise, Shandong Gazelle Enterprise and Shandong Technology Innovation Demonstration Enterprise.

The company, leveraging its robust technological prowess and unwavering dedication to craftsmanship, has maintained a singular focus and pioneered innovative breakthroughs in product development. Through over a decade of persistent efforts, it has successfully created a series of groundbreaking products and secured ownership of more than 66 proprietary intellectual property rights. Notably, the company spearheaded the formulation of the national standard "General Technical Specifications for Aerospace-Grade Thermoplastic Polyurethane Elastomer Interlayer Films", which was officially released in September 2023 and is scheduled for implementation in April 2024.

Through scientific and technological innovation, the company has overcome the core technical barriers in the raw material synthesis and stable granulation of optical - grade thermoplastic polyurethane film materials, as well as the stable extrusion molding of wide - format TPU interlayer films. Its products are widely used in various fields such as glass transparent components for aviation, ships, armored vehicles, and high - speed trains, bullet - proof and explosion - proof applications, safety glass for high - end buildings, aircraft coating protection, and paint protection films, achieving import substitution. The laminated EVA film materials are extensively used in decorative glass, ordinary architectural glass, and other areas. Equipped with advanced R&D centers, laboratories, and modern production lines, the company ensures product quality. The company's products fully comply with stringent European REACH, RoHS and U.S. FDA quality standards. With exports spanning markets including Mexico, Brazil, Russia, Iran, Singapore, India and other countries/regions, the products have achieved world-leading technological benchmarks in the global industry.

The company adheres to the business philosophy of sustainable development, focuses on customer needs, and strives to provide customers with low-cost, differentiated, all-round high-quality, and efficient solutions; adheres to the quality policy of quality first and customer first, and implements the "one-stop" service purpose, actively and effectively and quickly solving problems for customers, and creating a brilliant future with partners with professional and standardized services.



# 我们的优势

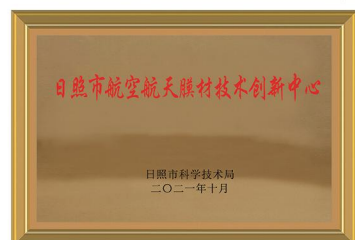
## OUR ADVANTAGES

- 光学级热塑性聚氨酯弹性体从原料合成到挤出成膜。  
Optical grade thermoplastic polyurethane elastomer from raw material synthesis to extrusion film.
- 《航空航天热塑性聚氨酯弹性体中间膜通用技术规范》国家标准，主持起草单位。  
One of the main drafting units of national standard "General Technical Specification for Intermediate film of Thermoplastic Polyurethane Elastomers in Aerospace"

- 具有独立自主知识产权，拥有完整工业生态链企业。  
An enterprise with independent intellectual property rights and complete industrial ecological chain.
- 独具CNAS认证的TPU中间膜检测中心。  
Unique CNAS certified TPU interlayer film testing center.

# 荣誉资质

## HONORS AND QUALIFICATIONS



# 工厂实拍

FACTORY LIVE SHOT



\* 可根据客户实际需求进行定制  
Can be customized according to customer's actual needs

# 特种TPU膜材

## SPECIAL TPU FILM MATERIAL

### 适用于航空航天透明件, 舰船、军车用防弹玻璃产品

Suitable for aerospace transparent components and bulletproof glass products for naval vessels and military vehicles

### 产品特性

见光透过率达到90%玻璃转化温度低至-68°C

Characteristic: The visible light transmittance 90% and the lowest glass transition temperature is -68°C

能有效的吸收子弹的冲击力, 起到防弹的作用有效的保护舰船、装甲车辆内部人员和设备的安全。

Characteristic: Effectively absorb the impact of bullets, and effectively protect the safety of personnel and equipment in the vehicles and ships.

适用于功能性飞机、直升飞机风挡和舷窗、客机、高铁风挡玻璃高端汽车玻璃  
舰船舰桥玻璃装甲车防弹玻璃警用防爆车玻璃、特种车辆舰船  
军事指挥所的防弹玻璃防弹面罩、防弹盾牌防弹插板。

Suitable for functional aircraft, helicopter windshields and side windows, passenger aircraft, and high-speed rail  
Windshield glass, high-end automotive glass, ship bridge glass  
armored vehicle bulletproof glass Glass, police  
riot-proof vehicle glass, special vehicles, ships, and  
military command posts Bulletproof glass, bulletproof masks  
bulletproof shields, and bulletproof plates.

检测项目 INSPECTION ITEMS		性能指标 PERFORMANCE INDEX	测试标准 TESTING STANDARD
拉伸强度	TENSILE STRENGTH	≥42MPa	GB/T 43128—2023
撕裂强度	TEAR STRENGTH	≥40kN/m	GB/T 43128—2023
与无机玻璃的 粘接强度	BONDING STRENGTH WITH INORGANIC GLASS	≥22kN/m	GB/T 43128—2023
压入硬度	INDENTATION HARDNESS	80IRHD ~ 85IRHD	GB/T 43128—2023
玻璃化 转化温度	GLASS-TRANSITION TEMPERATURE	≤-68°C	GB/T 43128—2023
透光率	LIGHT TRANSMITTANCE	≥90%	GB/T 43128—2023
雾度	HAZE	≤0.3%	GB/T 43128—2023

\*表中展示数据均为典型值, 不可视为产品标准

The above values are shown as typical values and should not be used as specifications.

# 民用TPU膜材

## CIVIL TPU FILM MATERIAL

### 适用于高端建筑用特种玻璃

It is applicable to special glass for high-end buildings

建筑安全玻璃、银行珠宝柜台玻璃、医用防辐射玻璃

Applications: Safety glass for buildings、Bank jewelry counter glass、Medical radiation proof glass

### 产品特性

超强粘接力、超强透光率

Product Features: Super-strong adhesive force, light transmittance

检测项目 INSPECTION ITEMS	性能指标 PERFORMANCE INDEX	测试标准 TESTING STANDARD
拉伸强度 TENSILE STRENGTH	$\geq 35\text{MPa}$	GB/T 43128—2023
撕裂强度 TEAR STRENGTH	$\geq 35\text{kN/m}$	GB/T 43128—2023
与无机玻璃的 粘接强度 BONDING STRENGTH WITH INORGANIC GLASS	$\geq 10\text{kN/m}$	GB/T 43128—2023
压入硬度 INDENTATION HARDNESS	70IRHD ~ 80IRHD	GB/T 43128—2023
玻璃化 转化温度 GLASS-TRANSITION TEMPERATURE	$\leq -60^\circ\text{C}$	GB/T 43128—2023
透光率 LIGHT TRANSMITTANCE	$\geq 88\%$	GB/T 43128—2023
雾度 HAZE	$\leq 0.4\%$	GB/T 43128—2023

# EVA膜材

## EVA FILM MATERIAL

### 产品特性

透明度高、粘接性好，溢胶较少。

Characteristics: High transparency strong bonding, less glue overflow

盛鼎高新材料股份有限公司生产的EVA中间膜是由乙烯-醋酸乙烯共聚物为主要原料添加助剂经流延制成的一种薄膜材料行业内又称其为“改性EVA胶片”。公司拥有先进的研发中心,实验室和现代化生产线保证产品质量。

The EVA intermediate film produced by Shengding High tech Materials Co., Ltd. is a thin film material mainly made of ethylene vinyl acetate copolymer, with additives added and cast. It is also known as "modified EVA film" in the industry. The company has advanced research and development centers, laboratories, and modern production lines to ensure product quality.

### 超透EVA胶片

低温超透胶片对玻璃有很强的粘结力，具有坚韧、透明、耐高温、耐寒、粘结强度大、断裂伸长率高、耐湿、耐紫外加工温度低等特性。雾度低于0.5% (0.5MM)，透光率>90%

#### Ultra transparent EVA film

this kind of film has strong adhesion to glass, and has the characteristics of toughness, transparency, heat resistance, cold resistance, high bonding strength, high elongation at break, moisture resistance UV resistance and low processing temperature. Haze is less than 0.5% (0.5MM), light transmittance> 90%

### 彩色EVA胶片

色彩鲜艳、高透明度、耐冲击性、良好的耐久性;可以抵抗高温、潮气、紫外线等;

#### Color EVA film

Bright colors, high transparency, impact resistance, good durability; can resist high temperature, moisture UV rays.

### 白色玉砂胶片

白度高、粘结力牢固、持久耐候、玉润的效果、透丝不透视

#### White jade sand film

High whiteness, strong adhesion, long-lasting weather resistance jade-smooth effect, transparent but not see-through

### 普通夹丝玻璃EVA胶片

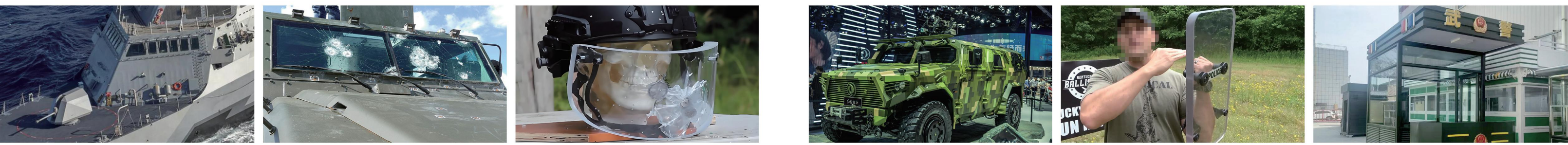
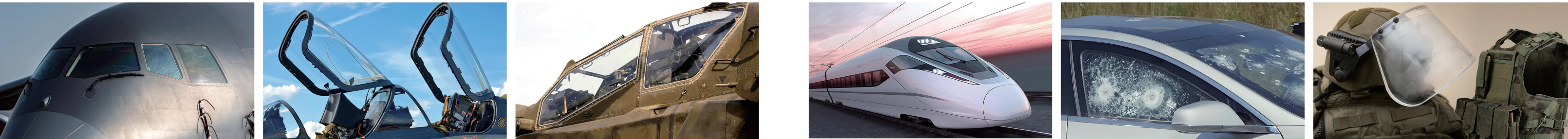
粘结力强，可粘结金属丝、网物、绢丝、PET等

#### Ordinary laminated glass EVA film

Strong bonding strength, can bond metal wire, mesh, silk, PET etc.

# 应用场景

## APPLICATION SCENARIOS



# 应用场景

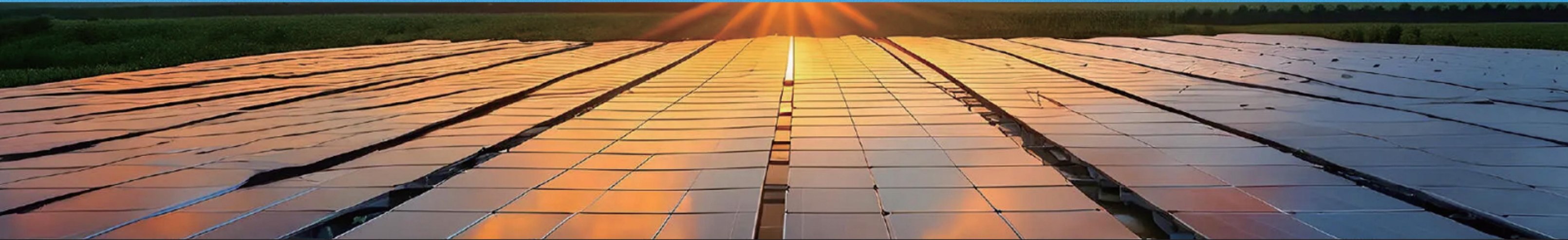
## APPLICATION SCENARIOS



# 应用场景

## APPLICATION SCENARIOS

EVA夹胶玻璃广泛应用于装饰玻璃、普通建筑玻璃、光伏、LED玻璃幕墙等EVA中间膜广泛应用于电流组件及各种光学产品。  
 EVA laminated glass is widely used in decorative glass, ordinary building glass, photovoltaic LED glass curtain wall etc., and EVA intermediate film is widely used in current photovoltaic components and various optical products.



## 公司专注设备+工艺+耗材+运维一站式服务

ONE STOP SERVICE FOR EQUIPMENT, PROCESS, CONSUMABLES, OPERATION AND MAINTENANCE

# 高压釜加工工艺

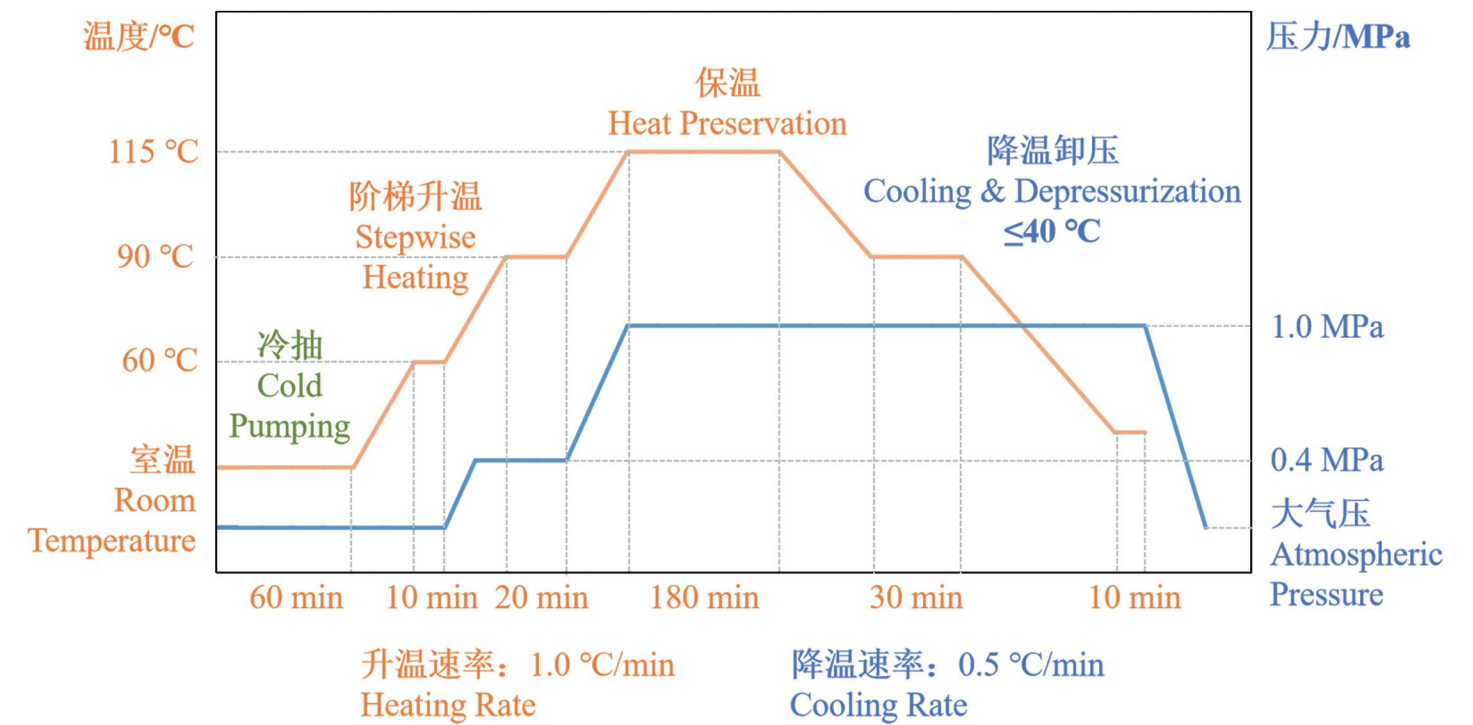
## AUTOCLAVE PROCESSING TECHNOLOGY

- ① 准备：准备所需的干净、无灰尘的玻璃、PC板材和TPU膜材。
- ② 合片：将TPU膜材夹在两块玻璃之间，确保胶片均匀地夹在两个玻璃之间并夹紧（根据需求可多层玻璃或PC板材组合）。
- ③ 冷抽：将合片后的夹层玻璃置于真空袋中，并放入高压釜，打开真空泵，在 $25 \pm 3^\circ\text{C}$ 下抽真空，真空度 $-100 \sim -102\text{ KPA}$ ，根据夹层玻璃大小调节冷抽时间30-120分钟。
- ④ 升温升压：冷抽结束后，按照工艺温度图（如下所示）进行多次升温操作。升温过程伴随着升压。根据自定工艺可先升温再升压，也可温度和压力同时升高。压力和温度的升高速率也根据自定工艺调整。根据夹层玻璃的结构、材质及粘接力需求调整高压釜的压力范围0.2-1.2 MPa。
- ⑤ 保温：升温到预定温度后，在此温度和压力下保持一定的时间。每增加6MM的夹层玻璃厚度，高温保温时间应延长20分钟。一般热压温度范围为 $90-120^\circ\text{C}$ ，推荐温度范围为 $95-115^\circ\text{C}$ 。
- ⑥ 卸压：待夹层玻璃温度降到 $48^\circ\text{C}$ 以下，方可进行卸压操作。根据自定工艺调整降温速率，如果制件中含有PC材质制件，建议降温速率低于 $1^\circ\text{C}/\text{MIN}$ 。



## 玻璃+TPU+PC板工艺图

G+TPU+PC Process Diagram



## 备注 (Notes)

- ① 生产前，确保真空设备正常运作，并在整个生产过程中保持真空状态。
- ② 将玻璃放入高压釜之前，请确保有对其进行清洁处理。
- ③ 上述的低温和高温均是指玻璃表面的温度。
- ④ 由于设备内外的温度差异，实际的设定温度可能会更高。
- ⑤ 建议使用一次性真空袋或夹层玻璃边部加垫框以减少边部压力造成的边部提前封边和应力不均现象。

## 公司专注设备+工艺+耗材+运维一站式服务

ONE STOP SERVICE FOR EQUIPMENT, PROCESS, CONSUMABLES, OPERATION AND MAINTENANCE

# EVA夹胶炉

## EVA LAMINATED GLASS MACHINE

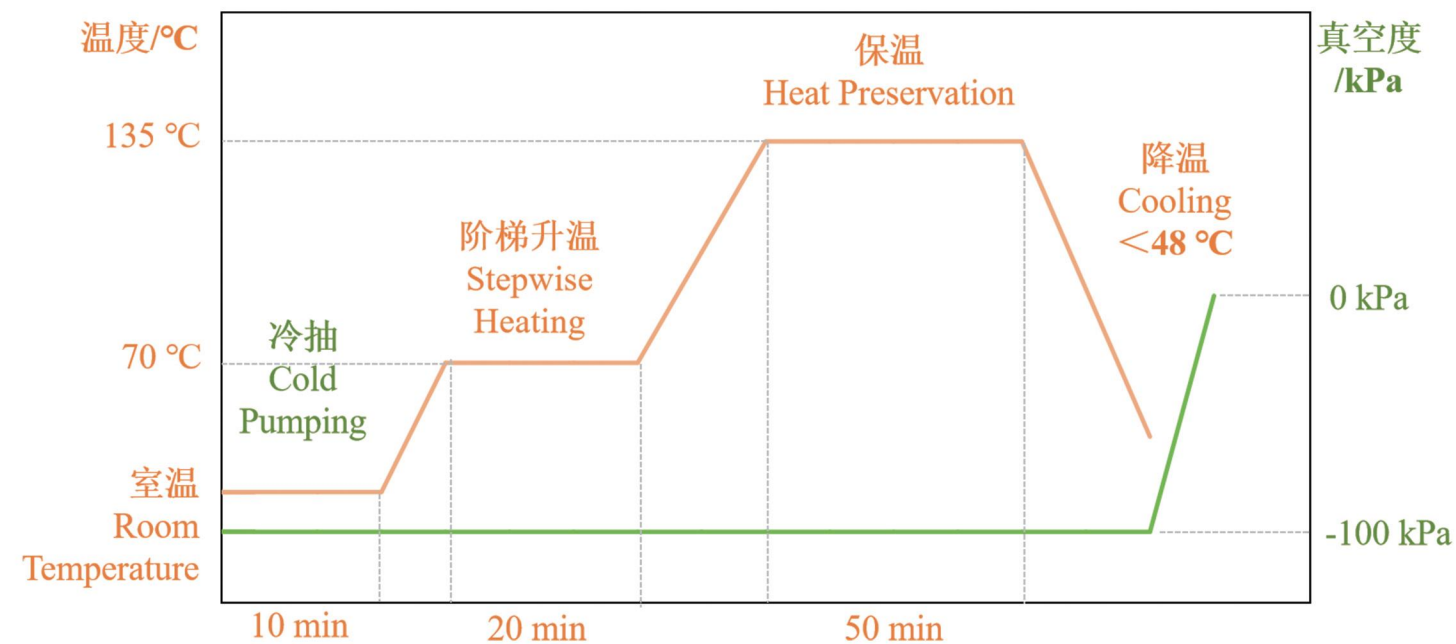
### 产品特点

- 1、A区B区两套炉体，独立控制，可同时生产不同参数的玻璃，循环工作，降本增效；
- 2、独立真空系统具备断电保压、油水分离、泄压报警、保养提醒、防尘降噪等功能；
- 3、多层独立加热，模块化区域加热控制，加热速度快、效率高、温差小；
- 4、设备保温层进行无缝化处理，减少热量流失，保温效果更强，更加节能省电；
- 5、采用PLC控制系统，全新人性化UI界面，设备状态全程可视化，所有程序可自动完成；

1. The machine have 2 operation systems, can laminate different kinds of glass with different parameters at the same time, realize cycle work, reduce costs and and increase efficiency.
2. The independent vacuum system has the functions of power failure and pressure maintenance, oil-water separation pressure relief alarm, maintenance reminder, dust prevention and noise reduction, etc.
3. Multi-layer independent heating and modular area heating control, make the machine has fast heating speed, hig efficiency and small temperature difference.
4. The insulation layer is seamlessly processed to reduce heat loss, the insulation effect is stronger, and it is more energy-saving.
5. The machine adopts PLC control system and the new humanized UI interface, the whole process of machine status can be visualized, and all procedures can be completed automatically.

### 玻璃(5mm)+EVA+玻璃(5mm)工艺温度图

G+EVA+G Process Temperature Diagram



\* 可根据客户实际需求进行定制

Can be customized according to customer's actual needs