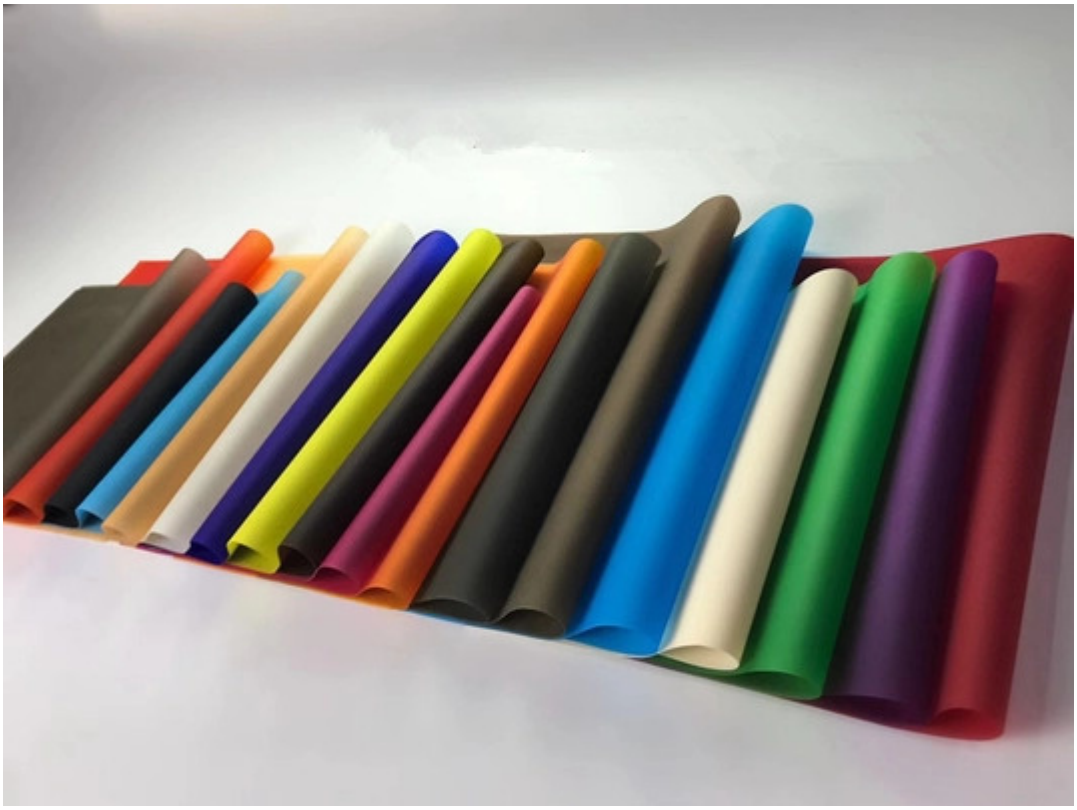
2024 Guide Book-PVB Glass vs EVA Glass, Which One is the Best Option?



When make a comparion of PVB glass vs EVA glass, we need to know what is laminated glass? – Laminated glass, also called VSG glass, known as safety glass, is the strongest and most durable product among various glass products in the world. As the name suggests, laminated glass is composed of multiple layers of glass, such as double-layer glass, triple-layer glass, and quadruple-layer glass, and more.

In addition, apart from glass, the interlayer film in the middle of the glass is also important. There are usually three types of interlayer films: EVA, PVB, and SGP. With so many

choices, what are their differences? Today, let me first talk about PVB glass vs EVA glass.

1-Belief Introduction

What is PVB glass?

PVB glass also called PVB sandwich glass, which is widely use for different building project and automotive industry. They often use two, three or four glass panels with PVB combination, PVB stands for Polyvinyl butyral, it’s a transparent plastic material that possesses excellent adhesion, toughness, and clarity.

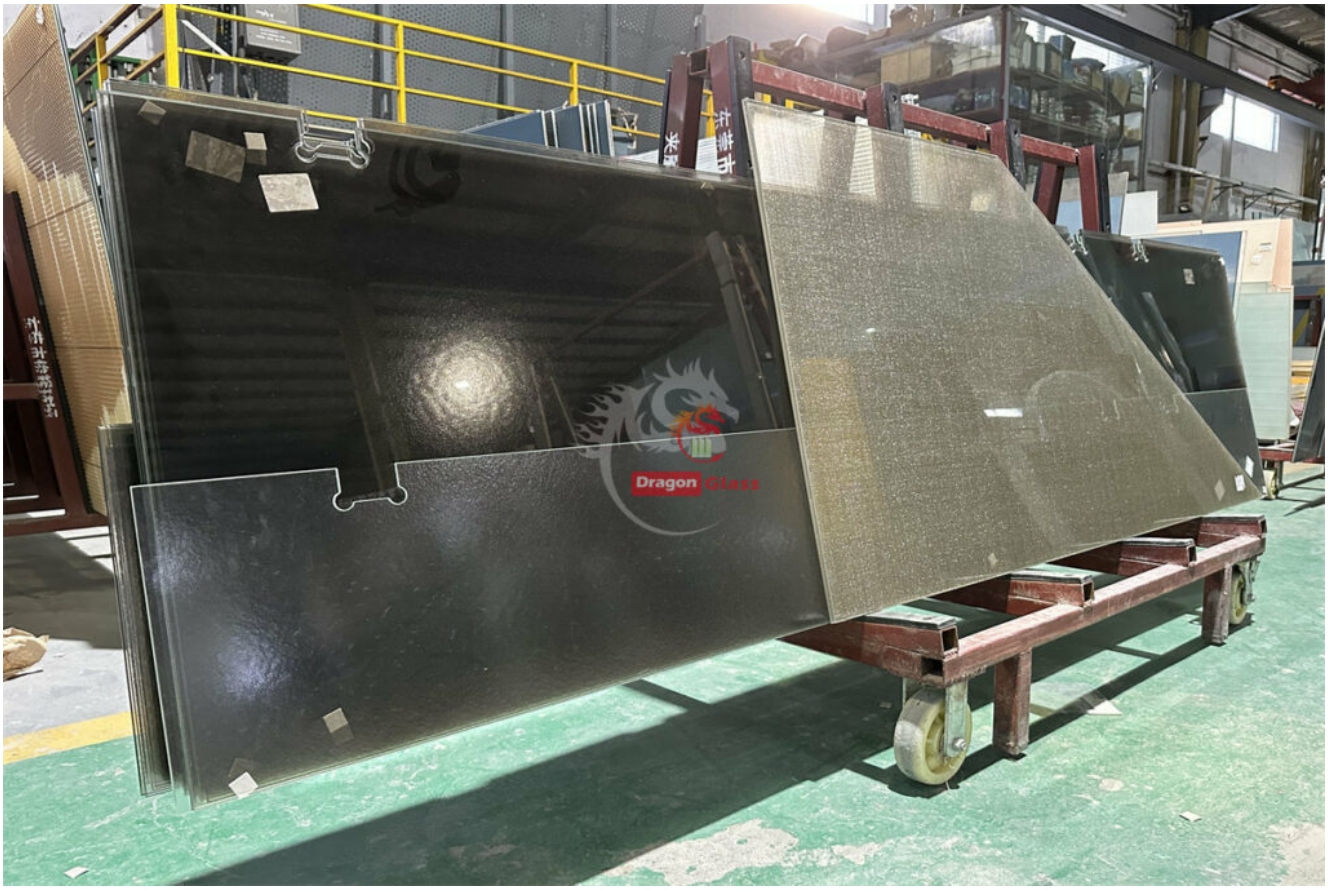
Because PVB is sandwiched between layers of glass. When the glass breaks, the PVB layer holds the broken pieces together, reducing the risk of injury from sharp shards. PVB film glass also offers other benefits, such as sound insulation and UV protection, making it a popular choice for applications such as architectural glazing, safety glass for buildings and automotive windshields.

Amazing color from Vanceva PVB, delivered for a mall project in Korea.

What is EVA glass?

EVA glass is another kind of sandwich glass, which often use for interior jobs because its have, because its special performance, can combine different materials, such as metal mesh laminated glass, fiber glass, or carved laminated glass and rattan glass, then reach a very good deocrative effects.

The EVA glass same as PVB glass, also have a safety performance, when glass breaking, the break pieces will be fixed on the films. EVA interlayer glass allows for various decorative options, making it popular for use in artistic and design-oriented projects.



Metal mesh glass delivered to Middle East hotal glass project

2-Features of PVB glass vs EVA glass

Polyvinyl butyral (PVB glass) and ethylene vinyl acetate (EVA glass) are two common interlayer materials used in the production of laminated glass. The following is a comparison of the characteristics of PVB glass and EVA glass:

1-Strength and Durability

- **PVB glass** offers excellent strength and durability. It can withstand impact and helps hold glass fragments together upon breakage, enhancing safety.
- **EVA glass** also provides good strength and durability. It is known for its excellent adhesion properties, resulting in strong bonds between glass layers. *So that’s why its can laminating different materilals in a very good conditions.*

2-Clarity

- **PVB interlayers for glass** typically offer high optical clarity, allowing for clear visibility through the glass.
- **EVA interlayers for glass** also provide good clarity, but some formulations may have slightly lower optical clarity compared to PVB.

3-Processing

- **PVB glass** requires a longer and more complex lamination process involving heat and pressure to bond the glass layers together effectively.
- **EVA glass** typically have a lower melting point than PVB, which allows for faster lamination cycles. EVA can also bond well with different types of glass and materials.

4-UV Protection

- **PVB** glass offer an excellent level of UV protection, helping to reduce UV radiation transmission through the glass.
- **EVA** glass may provide less UV resistance compared

to PVB, suggest using the interior.

5-Sound Insulation

- **PVB laminated glass** offers good sound insulation properties, helping to reduce noise transmission through the glass. Especially Acoustic PVB widely controls the noise in the buildings.
- **EVA laminated glass** may provide similar or less sound insulation compared to PVB, depending on the specific formulation and thickness.

6-Adaptability

- **PVB interlayer glass** are commonly used in a wide

range of applications, including architectural glazing, automotive windshields, and safety glass.

- **EVA interlayer glass** are versatile and suitable for various applications, including architectural, decorative, and solar panel encapsulation. Mostly use for interior jobs.

3- Specification of PVB glass vs EVA glass

Product Name	PVB interlayer glass, PVB laminated glass, PVB film VSG glass
Glass Thickness	3+3mm until 19+19mm, triple layers, quadruple layers also available
PVB Thickness	0.38mm, 0.76mm, 1.14mm, 1.52mm, 1.9mm, 2.28mm, 3.04mm, etc…
Size Range	Normal Size at 2440x3660mm, jumbo size reach 3300x13000mm
Color Type	Transparent, blue, green, yellow, red, pink, gold, and so on. Customized RAL/Panton color
PVB Type	Normal type, acoustic PVB
Delivery Time	15 days

Specification of PVB glass

Product Name	EVA interlayer glass, EVA laminated glass, EVA film VSG glass
Glass Thickness	3+3mm until 19+19mm, triple layers, quadruple layers also available
PVB Thickness	0.38mm, 0.76mm, 1.14mm, 1.52mm, 1.9mm, 2.28mm, 3.04mm, etc…
Size Range	Normal Size at 2440x3660mm, jumbo size reach 3300x13000mm
Color Type	Transparent, blue, green, yellow, red, pink, gold, and so on. Customized RAL/Panton color
Type	Laminate different materials, such as metal mesh, fiber, stone, rattan, cloth and so on
Delivery Time	15-20 days

Specification of EVA glass

Property	PVB	EVA
Thermal properties		
Typical Melting temperature (°C)	-	75°C
Melt flow index (g/10min)	1.3 (5kg)	25 (2.16 kg weight)
Glass transition temperature (Tg)	6 – 20°C	± -40 - -30°C
Mechanical properties		
Tensile strength (MPa)	23 MPa	15 MPa
Elongation at break (%)	250 %	>650 %
Optical properties		
Refractive index	1.48	1.48
Yellowness index	<16	<4
Maximum transmission	89%	91%
Moisture		
WVTR	>65 g/(m^2 day)	<50 g/ m^2 day)
Moisture uptake	+++	+
Electrical properties		
Resistivity	2 x 10^{13}	>1 x 10^{14}

Property of PVB and EVA films

Impact Performance comparison			
	Laminate Construction		
Test	PVB (Everlam)	EVA (EVASAFE Bridgestone)	EVA (Glaast)
MBH ECE R43 Annex 3. 2 (Automotive)			
A 2,260 Kg steel ball is dropped from > 4 meter on a laminated glass/windscreen. If the laminate holds the ball, increase drop height by 0.30 meter In case of failure, reduce dropheight by 0.30 meter. Mean break height is calculated on minimum 12 relevant samples	0.76 mm LAM551D in 332 laminate construction: 7,75 meter	0.80 mm caliper in 332 laminate construction: 3,35 meter	
EN 12600 (architectural - Pendulum test)			
1(B)1	332	no data	442/443
2(B)2	331	441	no data
3(B)3	331	441	no data
EN 356 (architectural - manual attack)			
P1A	332	443	no data
P2A	442	442 with PET film or 444	444
P3A	443		446
P4A	444		448
Note: 442 means: laminated glass: 4 mm glass/2 times 0.38 (or 0.40) mm interlayer/ 4 mm glass			

Impact performance data

4- Different brands of PVB and EVA for glass

International PVB Brands

Sekisui Chemical Co., Ltd. (Sekisui S-Lec)

Sekisui S-Lec is a major manufacturer of PVB interlayer films used in laminated glass for architectural glass project, automotive, and safety glass applications. – **Refer by Sekisui**

Kuraray Co., Ltd. (Trosifol)

Kuraray's Trosifol brand offers a wide range of PVB interlayer films for laminated glass project, known for their high quality and performance in safety, security, and sound insulation. – **Refer by Kuraray**

Eastman Chemical Company (Saflex)

Saflex is a leading brand of PVB interlayer films used in laminated glass for safety, security, and sound control. Eastman offers a range of Saflex® products to meet various performance requirements. – **Refer by Eastman**

International EVA Brands

Bridgestone Corporation (KURARAY EVAL™)

KURARAY EVAL™ is a brand of EVA interlayer films produced by Bridgestone Corporation, known for their high transparency, adhesion, and UV resistance. – **Refer by Kuraray**

SELEMIX

SELEMIX is a brand of EVA interlayer films manufactured by Sekisui Chemical Co., Ltd., offering excellent optical clarity, durability, and adhesion properties for laminated glass applications. – **Refer by Sekisui**

5- Applications

PVB Glass

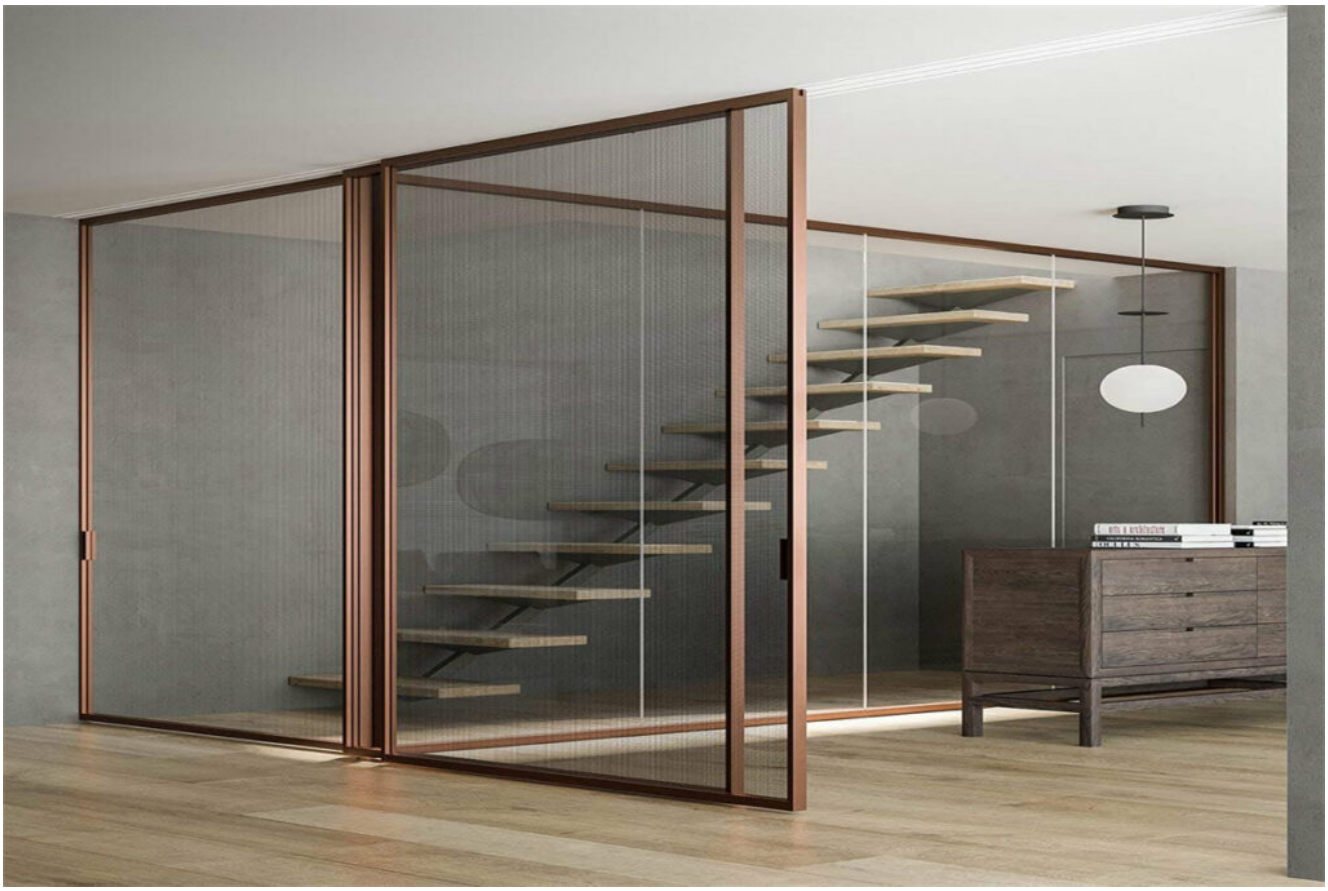
PVB laminated glass panel for railings and balustrades

PVB film glass for facade of the storefront

EVA Glass

Metal mesh eva glass for partitions

Decorative eva glass for shower room



Mesh eva glass for sliding door

We hope this article can truly help everyone, including contractors, property owners, and design companies, to better understand the differences between these two types of glass.

As a professional glass supplier, Dragon Glass has been deeply involved in this industry for over 30 years and will continue to focus on the glass market in the future, providing better products and services to everyone. If you have any questions or suggestions about this article, please feel free to contact us, and we will get back to you as soon as possible.