

HOW-TO

THE DIFFERENCE BETWEEN VINYL AND FIBERGLASS WINDOWS AND DOORS

Knowing the differences between vinyl and fiberglass windows and doors can help you decide which material is best for your home.

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Knowing the difference between the materials used to make windows and doors can help you make a more informed decision when you are ready to make a purchase. What are the differences between vinyl and fiberglass? Which one is stronger and performs better in the elements? Which one is cheaper? Learn more about the strengths and weaknesses of these materials so you know what to look for when you decide to invest in new windows and doors.



What is Fiberglass?

Fiberglass is a manufactured material, so you will find a wide variety of quality and performance standards. Marvin offers two types of fiberglass that both provide great insulation and have the advantage of dimensional stability that is very similar to window glass, so the glass and the fiberglass frame expand and shrink at similar rates. This makes for premium durability. Avoid fiberglass with high concentrations of plastics and vinyl, or with sawdust and wood fillers. Premium fiberglass used in window construction is made simply with fiberglass fibers and resins that have high strength and do not sag or become brittle in extreme heat or cold. Some windows combine the weather resistance of fiberglass or fiberglass cladding on the exterior with wood interiors that respond better to stain or paint.

The two different types of fiberglass that Marvin offers are Ultrex® fiberglass and high-density fiberglass.

- Ultrex fiberglass is a strong, durable, fiberglass proprietary to Marvin. It is used for the exteriors of Marvin [Elevate](#) products and the interiors and exteriors of Marvin [Essential](#) products. Ultrex fiberglass is eight times stronger than vinyl and three times stronger than vinyl/wood composites.
- High-density fiberglass is a fiberglass that shares many of the same characteristics of Ultrex but is even stronger. It is used for the exteriors of Marvin [Modern](#) products and mimics the clean look, feel, and strength of aluminum and steel with better insulating qualities.

What is Vinyl?

Vinyl windows made from vinyl (usually PVC) are less costly, low-maintenance, and if the frames are not hollow, they are decent insulators. Because dark exteriors can soften or sag from heat or direct sunlight, most vinyl windows are white or buff, so the color selection is limited. They can also become brittle in very cold temperatures.





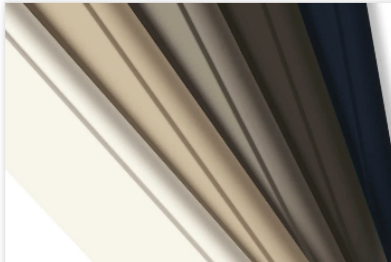
What is the difference between fiberglass and vinyl?

Most plastic, vinyl, and vinyl-based composites are made using thermoplastic materials. Thermoplastic materials are polymers that can be softened through heating before being processed and then left to cool and harden. Once cooled, they show no changes in chemical properties, meaning they can be re-melted and re-used several times. When exposed to the sun, thermoplastic materials begin to soften. That means products made from these materials (like windows and doors) start to not fit their openings in hot climates, making them difficult to open and close. It can also cause seals to become compromised.

Marvin pultruded fiberglass is a thermoset material created through a chemical process. It is fundamentally more than the sum of its parts by the end of the manufacturing process. A thermoset fiberglass composite won't soften or melt when exposed to environmental temperatures. As a result, it is more resistant to pressure and temperature than vinyl-based composites.

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