

Choosing Between Fiberglass vs Polycarbonate Roof Panels for Your Patio or Carport

Getting the Right Cover Over Your Head

When you start planning a patio cover, carport, or pergola roof, one of the first real decisions is what material to put overhead. You want something that lets in light but keeps out the weather, something that lasts more than a few seasons without turning brittle or cloudy. For most homeowners in Austin, the choice comes down to two reliable options: fiberglass panels and polycarbonate panels. Both are lightweight, translucent, and far easier to install than glass or metal. But they behave quite differently once they are up there, and the differences matter more than most people realize.

I have spent years working with both materials on all kinds of structures, from small backyard pergolas to full-size carports. The question of fiberglass vs polycarbonate roof panels comes up almost every time someone calls about a new cover. There is no single right answer. It depends on what you want from the roof, how much sun your site gets, and what kind of abuse the panels will take. Let me walk you through the real trade-offs so you can make a choice you will not second-guess later.

How They Are Made and Why That Matters

Fiberglass panels are made by embedding glass fibers in a polyester resin, then curing the sheet into a rigid, corrugated shape. The result is a panel that feels substantial and has a slightly textured surface. The corrugated roofing profile gives them stiffness, so they can span longer distances between supports without sagging. Fiberglass panels are usually available in a range of translucencies, from nearly clear to heavily diffused. They block UV radiation fairly well out of the box, but the resin does degrade over time if it is not protected.

Polycarbonate panels, on the other hand, are extruded from a thermoplastic polymer. They come in two main types: single-wall sheets that are essentially thin, flexible panels, and double-wall panels that have a hollow, insulated structure similar to twin-wall greenhouse glazing. The double-wall versions are much stronger and provide better insulation. Polycarbonate is famously tough. It is the material used in bullet-resistant windows and safety goggles. Lexan is one well-known brand, and Sunlite is another common name in the roofing world. Polycarbonate panels are also naturally UV resistant because manufacturers co-extrude a UV-protective layer onto the surface. That layer prevents yellowing and keeps the material clear for years.

Light Transmission and Heat Control

If you are covering a patio or pergola, light transmission is probably a big part of your thinking. You want the space to feel bright and open, not like a cave. Translucent panels solve that, but not all translucency is the same.

Fiberglass panels typically transmit less light than clear polycarbonate. A standard fiberglass sheet might let through 60 to 80 percent of visible light, depending on the color and thickness. The light is diffused, which means it spreads out softly instead of casting harsh shadows. That is great for a pergola where you want dappled light and a comfortable atmosphere. But if you need a lot of brightness, like over a dark carport or a workshop, fiberglass can leave the space feeling dimmer than you expected.

Polycarbonate panels, especially the clear or opal varieties, can transmit 80 to 90 percent of visible light. That makes a big difference in how the area feels. The trade-off is solar heat gain. Clear polycarbonate lets in more infrared radiation, which can turn a patio cover into a greenhouse in the summer. Double-wall panels are better in that regard because the air gap slows heat transfer, but they still let in more heat than fiberglass. Some manufacturers offer polycarbonate sheets with a reflective coating or a tint that reduces solar heat gain. Those are worth looking into if you are in a hot climate like Central Texas.

Strength and Impact Resistance

Here is where polycarbonate really pulls ahead. A good polycarbonate panel can take a direct hit from a falling branch or a baseball without cracking. It is about 250 times stronger than glass and many times stronger than fiberglass. That impact resistance is a huge advantage if you live in an area with hail. Austin gets hail storms often enough that it is a real concern. I have seen hail punch right through fiberglass panels, leaving holes that leak and let in pests. Polycarbonate panels, especially the double-wall kind, shrug off most hail without a scratch.

Fiberglass is strong, but it is more brittle. It can handle normal wind loads and the occasional bump, but a sharp impact will crack it. Once a fiberglass panel cracks, it tends to splinter and the damage spreads. Repair usually means replacing the whole sheet. Polycarbonate dents and scratches but rarely shatters. That toughness is why you see polycarbonate used in security glazing and machine guards. For a carport that takes daily exposure to falling objects, kids playing nearby, or the occasional basketball, polycarbonate is hard to beat.

UV Resistance and Longevity

Sunlight is the enemy of all plastic roofing. Ultraviolet radiation breaks down the polymer chains, leading to yellowing, brittleness, and loss of light transmission. Both fiberglass and polycarbonate panels have UV resistance, but they achieve it differently.

Fiberglass panels typically have a gel coat or a surface film that blocks UV rays. That coating works well for several years, but it can wear thin, especially on panels that face direct sun all day. Once the coating degrades, the resin underneath starts to break down. The panel becomes yellow and chalky, and its strength drops. Cheap fiberglass panels might start showing wear in three to five years. Better ones, like those from Sunlite or Tuff Curb, can last ten years or more if they are properly maintained.

Polycarbonate panels have a co-extruded UV layer that is actually part of the sheet, not just a coating. That layer is more durable and lasts longer. Good polycarbonate panels, like Lexan or Sunlite, come with a ten-year or even twenty-year warranty against yellowing. In real-world conditions, they stay clear and strong much longer than fiberglass. The trade-off is that polycarbonate is softer, so it scratches more easily. If you have trees that drop debris or if you walk on the roof during maintenance, you will see those scratches. But scratches are cosmetic. They do not weaken the panel the way UV degradation does.

Installation and Hardware

Installing either type of panel is similar, but there are details that matter. Both materials work with corrugated roofing profiles and can be fastened with roofing screws into aluminum framing or steel purlins. Galvalume is a common choice for the substructure because it resists rust and holds fasteners well.

The key with fiberglass is to drill pilot holes slightly larger than the screw diameter. Fiberglass can crack if you drive screws too tight or if the panel expands and contracts against the fastener. You need to use neoprene washers and gaskets to create a watertight seal and allow for thermal movement. Fiberglass expands and contracts more than polycarbonate, so leaving a little room at the ends of the panels is important.

Polycarbonate panels, especially the double-wall type, require special attention to the edges. The open channels need to be sealed with tape or a cap to keep dirt and insects from getting inside. If you skip that step, the panels will look dirty from the inside and lose their insulating value. Polycarbonate also expands and contracts a lot with temperature changes. You need to use larger washers and leave a generous gap at the ends. Some manufacturers sell a specific edge profile or gasket kit for that purpose.

Cost and Value

Fiberglass panels are generally cheaper upfront. A standard fiberglass sheet costs less than a comparable polycarbonate sheet, sometimes by 30 to 50 percent. If you are on a tight budget or covering a large area like a carport, fiberglass can save you real money. But you have to

factor in the shorter lifespan. If you replace fiberglass panels after eight years while polycarbonate lasts fifteen or more, the total cost of ownership might favor polycarbonate.

Polycarbonate panels also hold their appearance better over time. That matters if the roof is visible from the street or if you plan to sell the house. A clear, bright polycarbonate roof looks newer and cleaner than a yellowed fiberglass roof. For a patio cover or pergola that is part of your outdoor living space, the visual difference is worth something.

Making the Choice

When someone asks me about [fiberglass vs polycarbonate roof panels](#), I start with the climate and the use. If you are in a hot, sunny area and you want a pergola with soft, shaded light, fiberglass is a good fit. It blocks more heat and gives that diffused look. If you need a carport that can take hail and still let in plenty of light, go with polycarbonate. For a patio cover that gets afternoon sun, consider double-wall polycarbonate panels with a tint or reflective coating. They cost more but they will keep the space cooler and last longer.

Do not forget the substructure. Aluminum framing or Galvalume purlins work well with both materials. Use the right roofing screws and gaskets for the specific panel type. A good installation with proper hardware makes more difference than the panel material itself. I have seen cheap polycarbonate panels last fifteen years because they were installed right, and expensive fiberglass panels fail in three years because the screws were too tight.

If you are still unsure, talk to a local roofer who has experience with both. Austin Roofing Company, for instance, installs translucent and corrugated fiberglass roof panels for patios, carports, and pergolas around Austin. They can show you real examples and give you a price comparison for your specific project. The best way to decide is to see both materials side by side and think about what your space actually needs.