



CHEMICAL BOND 3 PLACES

574.00



# Pool design with acrylic

When you want a pool that takes your design to the next level and is truly extraordinary, acrylic can help make that dream come true. Reynolds Polymer Technology, Inc. (RPT) is the leader in thick gauge acrylic panel manufacturing for use in aquariums and scientific endeavors. This experience translates seamlessly into the swimming pool industry with R-Cast® acrylic panels that add sophistication and beauty to make any pool project exceptional.

Whatever you'd like to accomplish with your pool, acrylic can enhance that design. Before you get started, though, there are a few design factors for you to consider.

R-Cast® acrylic panels for pools come in a couple of standard sizes or can be completely customized to suit your needs. RPT is an expert in fabricating these panels however needed for your pool:

- Standard Sizes: L panel: 72" x 186" (1.83m x 4.72m) or BG Panel: 9' x 23' (2.7m x 7.0m)

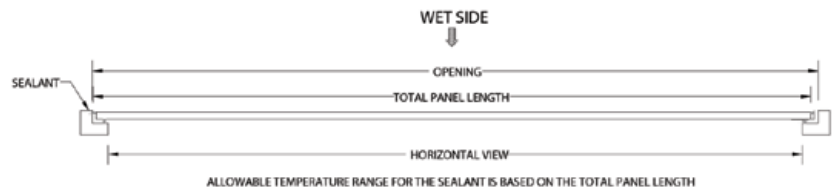
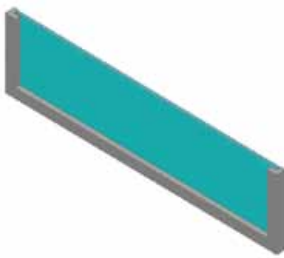
Using R-Cast® acrylic in your pool requires careful evaluation to ensure proper performance for your enjoyment for years to come. RPT's Engineering team reviews your design against various design criteria ranging from temperature fluctuations where the panel will be installed, to panel deflection criteria, to budget. This information, combined with detailed analyses, determines how best to build your pool window using some of the examples below.

## Types of Panels

### Continuous Monolithic Panel

This is a single panel with uninterrupted views. This is the maximum, unobstructed panel size possible for your project that offers the largest view inside the pool. Depending on the size of the panel, it can either be a single panel or a chemically bonded panel.

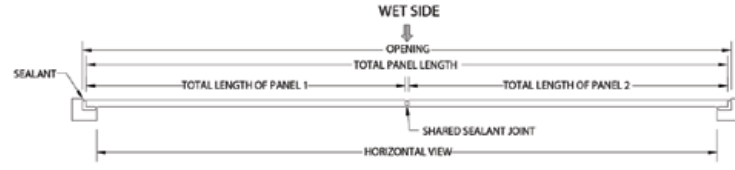
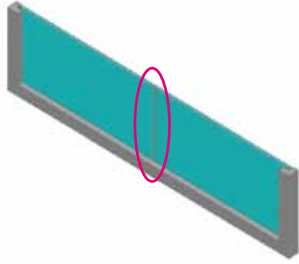
*Bonded Panel* | When the panel size required for the pool window exceeds our standard cast sizes, bonded panels are an option. The chemical bonding of acrylic produces an invisible seam that adheres multiple panels together. This achieves an identical look to the Continuous Monolithic Panel as the view is completely unobstructed and allows for the maximum viewing size possible.



*This pool's bonded panel creates a monolithic window allowing uninterrupted views along the length of the acrylic wall.*

## Panel with Sealant Joint

This option uses smaller panels adhered together with silicone sealant to achieve the full length required of the panel. Sealant joints present some **potential cost savings** over the more expensive option of bonding panels. The silicone joint is visible in the panel, but not overly obtrusive.



IF A PANEL IS SEALED TO AN ADJACENT PANEL, THE ALLOWABLE TEMPERATURE RANGE FOR THE SHARED SEALANT JOINT IS BASED ON THE TOTAL OF TWO PANEL LENGTHS

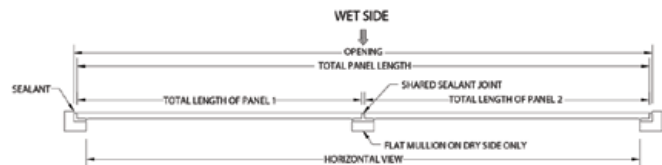
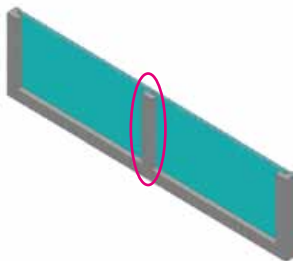


The sealant joints between the panels in this pool allow for larger views directly into the water while using multiple smaller panels. The sealant minimizes the amount of obstructed views while maximizing overall window size.

## Panels with Mullions

Mullions are structural supports added between panels to reduce the amount of deflection (bowing) and allow for proper expansion and contraction of the panels. A mullion allows larger viewing areas by dividing the overall length of the window into smaller panels. Mullions can be made of a number of materials, including steel, concrete, or fiberglass reinforced plastic (FRP), though RPT recommends concrete for water-tightness. Because mullions provide additional support to counter the deflection in a panel, thinner panels can be used, thus reducing the cost of the project. Panel thickness drives mullion size, so a thicker panel requires a wider mullion. By nature of being supports for the panel, mullions do interrupt views of the panel looking into the pool. However, when aesthetics are the most important factor, mullions may, upon evaluation by our Engineering department, be removed in place of utilizing a thicker panel.

*Shared Sealant Joint with Dry-Side Mullion* | There is less deflection with this type of installation compared to a panel using only a silicone joint. Here, the panels are joined together with a silicone joint and a mullion only on the dry-side of the panel.

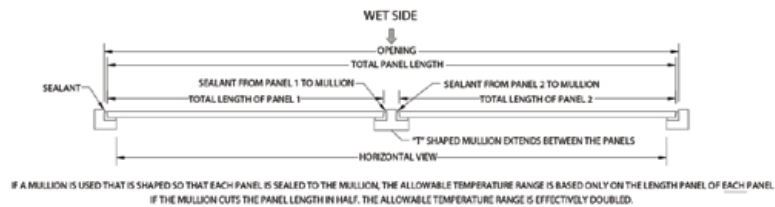
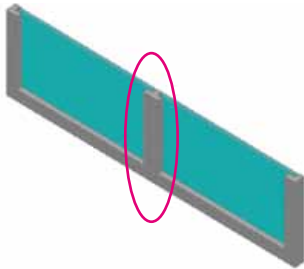


IF A MULLION IS USED BUT THE PANELS ARE STILL SEALED TO EACH OTHER, THE ALLOWABLE TEMPERATURE RANGE FOR THAT SHARED SEALANT JOINT IS BASED ON THE TOTAL OF THE TWO PANEL LENGTHS



These steel dry-side mullions provide structural support for the silicone butt-joint panels in this exhibition pool. To protect the silicone sealant on the wet-side of the panels from the dolphins, each mullion clamps over the top of the panel with a protective covering inside the pool.

*T-shaped mullion* | This installation is recommended if a monolithic or bonded panel is not viable for a project. A T-shaped mullion separates each panel and ultimately reduces the amount of deflection of a panel, allows the use of a thinner panel to potentially reduce costs, and improves the temperature range capabilities.

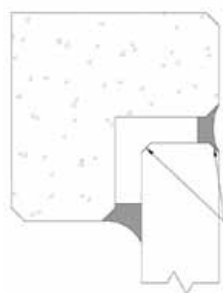


The T-shaped mullions here, which are oversized for aesthetic reasons, allow for sufficient expansion, contraction and minimal deflection of the R-Cast® acrylic panels that allow visitors to look directly into the swim reef at this resort.



## Top Edge Finishes

When it comes to the exposed top edge of your pool wall, the edge finish completes the sophisticated look and ensures safety. Typically, the Radius edge and Bullnose edge are requested most frequently for our pool panels, though we can certainly create a custom edge finish if you desire. The Chamfer edge is standard on all sides of the window that are sealed into the concrete, but is not available on the top edge due to its remaining edge sharpness.



RPT CHAMFERS ALL SUPPORTED EDGES FOR MATERIAL HANDLING AND SAFETY

### Chamfer

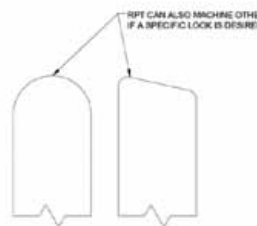
*This edge finish simply removes the extra sharp corners for safety, handling & improved shipping. This edge is used for all sill and jamb edges, but never for the exposed top edge.*



RPT RADIIUSES ALL UNSUPPORTED EDGES FOR AESTHETIC REASONS

### Radius

*While this is our standard offering, you may specify the exact size of the radius you would like on your panel. This finish safely rounds the edges while keeping the top edge flat.*



RPT CAN ALSO MACHINE OTHER IF A SPECIFIC LOOK IS DESIRED

### Bullnose & Custom

*This is an optional edge finish for your pool panel. Bullnose edges are completely rounded at the top and offer a completely edge-free finish to the panel. Other custom edges available by request.*

## Panel Supports

Because all R-Cast® panels and panel thicknesses are built to industry standard deflection criteria and other design criteria, reducing perceived deflection is purely an aesthetic undertaking. However, there are three options to do this:

- 1) Add more bearing surface - the amount of acrylic in contact with the concrete - to the channel;
- 2) Use a thicker panel; or
- 3) Reduce overall panel size

### 3ss Simple vs 3ss Cantilever

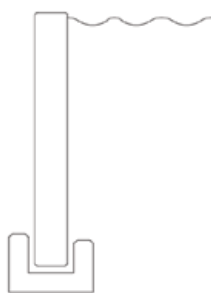
The distinction between simple 3 Sided Support (3ss) and 3ss cantilevered installations is the channel that the panel sits in. In 3ss simple, the channel that the panel sits in is shallow and resembles a U shape. Cantilever support, however, uses a much deeper channel to set the panel in. Additionally, the wet side of the cantilevered channel is slightly lower than the dry side channel to ensure optimum viewing area.

### 3ss Simple

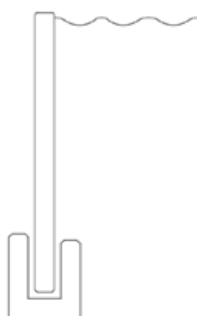
3ss simple support always uses channels at the sill (bottom) of the panel. On occasion, the design requires channels at the jambs (sides) if the panels will remain dry or if there is excessive freeboard - the amount of acrylic above the waterline. 3ss simple typically requires a thicker panel, which many prefer for aesthetic reasons.

### 3ss Cantilever

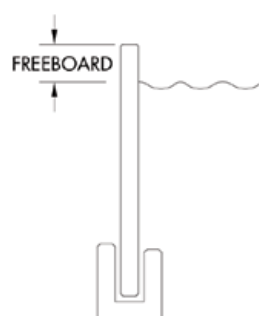
Cantilever installations maintain the same design criteria as 3ss simple and the viewing dimensions typically remain the same, but the deeper channel allows for a thinner panel to be used. As such, cantilever installations are sometimes used to reduce the cost of the panel even though the panel must also be taller so that it can sit deeper into the channel.



3ss simple channel with standard bearing

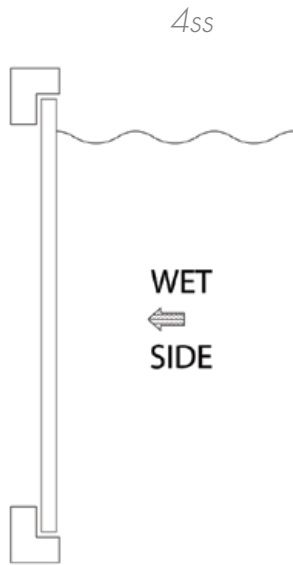


3ss Cantilever channel with additional bearing

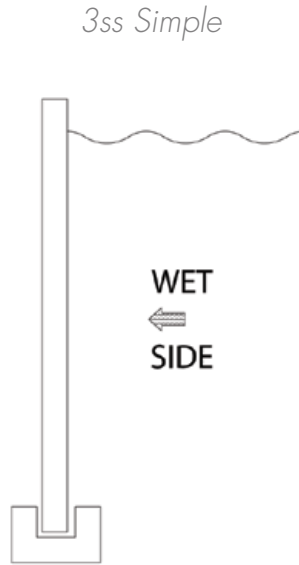


Freeboard shown with 3ss cantilever support

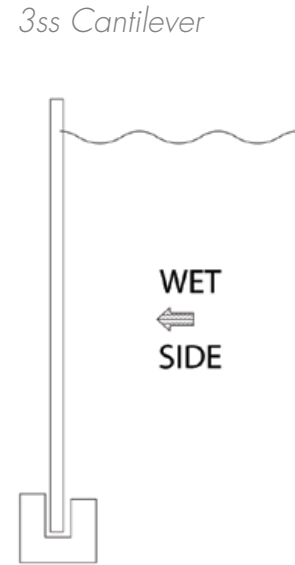
## Support Comparisons



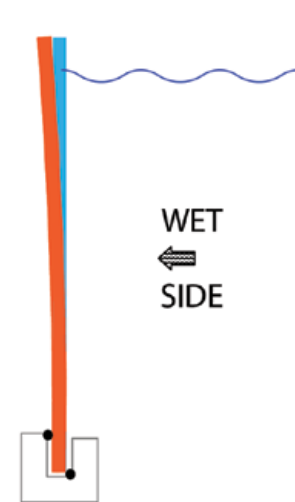
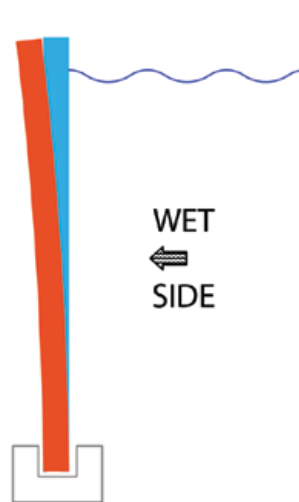
Simple four-sided support (4ss). Panel secured in head, jambs, and sill. The L-shaped channels are suitable in this set-up since the panel is secured on all four sides.



Simple three-sided support (3ss) with panel secured in channel and jambs. This is standard practice for RPT.



Cantilever support with panel resting in deep channel and jambs. Note the panel is thinner, which may result in cost savings.



The blue bar represents the stationary panel; the orange bar depicts panel deflection — expected panel movement under normal conditions. The deflection shown here is an exaggeration; actual panel deflection is not noticeable to the general public. Deflection is completely normal and expected, and our Engineering team reviews panel deflection to ensure it is within our tight standards. The black dots in the cantilever graphic represent the points at which the panel comes in contact with the channel. This is why the channel is so deep — that contact adds stability to a thinner panel to keep it safely in place and within allowable deflection range.

Whatever you'd like to accomplish with your pool, acrylic can enhance the design. Whether it's a simple flat panel or a complex, curved pool wall, R-Cast® acrylic panels can create extraordinary impressions of your pool design.

Contact us today to see how we can bring your dream pool to life.

sales@reynoldspolymer.com | 800.433.9293 (US/Canada) | +00 1 970.241.4700 (International)

