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FAQ

Designing with Resin

Questions about Connection:

Can I fasten my resin panels together with bolts or cables?

Yes, the rule of thumb for drilling holes in all polymer types is to be sure the edge of the hole is 3X the diameter of the hole from the edge of the material. Always leave some wiggle room between the parts as plastic expands and contracts with heat, cold and moisture. Rubber washers and collars are useful to hold parts firm while allowing expansion contraction room.

Can I glue the edges together with epoxy?

Epoxies are two part adhesives that are made to cure over various lengths of time. Choose the epoxy made for your polymer type and remember to ask if it will remain clear over time, some epoxies will yellow with age and UV exposure. Another method for attaching edges together is solvent bonds. To create a beautiful and sturdy bond, edges must be completely flat and touching in all parts of the seam to make this effective and invisible- a technically challenging process. There are many tricks to getting a beautiful seam and this is generally best left to the experienced and skilled fabricators. We are glad to fabricate to your specifications in our shop.

Is my LightBlocks sheet as strong as glass?

There are several ways to measure strength. An acrylic LightBlocks sheet is 50% stronger than glass, while a LightBlocks Polycarbonate or PETG sheet may be many more times stronger. Acrylic is strong enough to be used for glazing hockey rinks to protect spectators from flying pucks. In a bullet resistant grade, LightBlocks acrylic will withstand 6 shots from a 357 Magnum fired at a distance of 6" from the wall! Similar results can be obtained from a mere 1/2" thickness of polycarbonate.

Plastic, however, is more flexible than glass and must be supported at closer intervals. Please see our deflection chart in the tech spec section for specifics. A 1/2" sheet of acrylic will need to be supported every 30" to remain flat when suspended. Remember,

if there is extra stress such as table or counter top design, you will need to design extra support.

Can you make curved parts with LightBlocks?

Yes, this is done in 3 different ways.

Simple Heat forming

This is done by placing flat sheets of polymer in an autoclave over a wooden form and heating the plastic till it relaxes into the shape of the form. The sheet must be cooled very slowly to retain the shape. A too rapidly cooled sheet will continue to tighten the radius over time. Use this method for simple shapes of all sizes where small quantities are needed.

Cold forming

As plastic is flexible it may be safely forced into a curve by clamping the sheet along two sides. Each polymer has it's own maximum safe bending radius. An advantage of cold forming is that no mold is needed and any quantity can be economically made.

Vacuum Forming

In this method a heated sheet of polymer is sucked around a form by removing the air from the chamber with a vacuum. The mold for this type of forming allows for complex shapes, deep draws and large production runs.

How 'exact' is the thickness of my polymer sheet?

Plastic thickness varies a good deal from manufacturer to manufacturer and is never perfectly the same across a sheet unless a military spec. plastic is requested. This costs quite a bit more than regular plastic. It is best to make sure the channels and mounts have some room to allow for this quality. It is possible to address the thickness issue on the edges of a panel to allow it to fit into a frame with a tight tolerance. Room for expansion must always be allowed.

What should I allow for Expansion/Contraction?

Remember-everything expands and contracts with heat, cold and moisture, not just the plastic. Allow for this quality in your designs by designing in spaces between panels and in your attachment methods, channels, frames, etc. The amount to allow is available for each polymer from the manufacturer, but a good rule of thumb is to allow 1/16" for every 4' of width.

What is the Chemical Resistance of LightBlocks?

Different polymers react to various solvents differently. Our Resin Coat on LightBlocks gives an increased tolerance to common chemicals and cleaners. The rule of thumb is to specify the opposite polymeric type from the solvents you expect to be in the vicinity of your completed project, such as laboratory counters, etc. Pair polar polymers with non-polar solvents and you will be safe.

All commercial and home cleaning and antibacterial solutions are safe for use on LightBlocks. LightBlocks has passed the clean-ability test for Boston's Children's Hospital intensive care wards.