

# Laser Cut Polycarbonate

Polycarbonate is extremely durable and impact resistant. It is thirty (30X) times stronger than acrylic. The added strength allows for thinner profiles thus allowing for greater design flexibility.

Polycarbonate is measured in millimeters like other plastics. Common sizes are . 6.3500-mm (1/4") all the way down to . 1.5875-mm (less than 1/16").

The 3.0000-mm and smaller thickness can be bent cold and will retain shape. While heat can be used for bending it changes the material properties and can lead to breaking at the point of the bend.

Bending requires the use of a sheet metal break, jigs, vice or something to make the bend. Blocks of wood and clamps work in some circumstances. Experimentation with scrap pieces is recommended.

There are many uses for Polycarbonate including robots used in harsh conditions. Thin pieces don't break easily, holes can be threaded, and the thinner materials can be bent without heat. Polycarbonate material features good shape retention and is often used for machinery guards because of the durability.

The edge quality leaves a lot to be desired when laser cut. A clean edge when cut with a laser is difficult (if not impossible) to obtain. In fact, some laser cutters won't even cut it because it can ruin a lens and requires frequent stopping and cleaning. Commonly, scraping the edge with a razor blade yields satisfactory results. In some cases parts can be stacked and then sand-blasted. After scraping or sandblasting, you should use a little solvent to clear the edges up if its necessary.

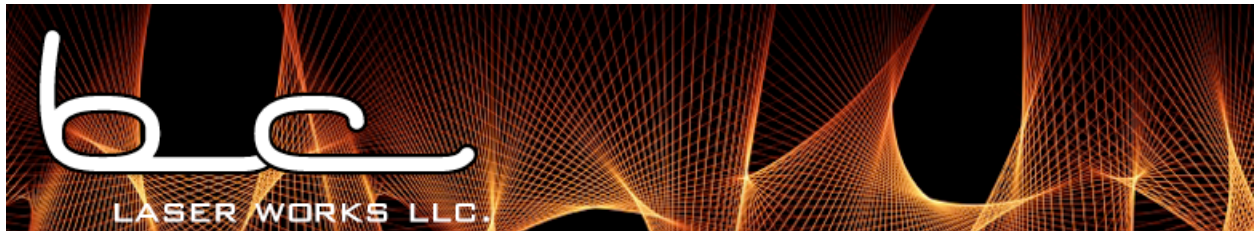
## Polycarbonates

*Polycarbonate comes in clear, white, matte, gray, bronze, black.*

*UL listed and UV stabilized.*

*Polycarbonate is available in reels as well as 4x8 sheets.*

*Silk screening and painting is possible with commercially available paints and inks.*



## Recommended Adhesives for Polycarbonate

- \* For solvent bonding use MDC (methylene dichloride).
- \* Apply to surfaces to be bonded and hold together under pressure until cured. Add 10% glacial acetic for best joint appearance.
- \* Urethane adhesives are also recommended.
- \* Weld-on #3 has yielded good results too, though BC Laser Works doesn't do much fabricating.



**Helping others design and develop their ideas**