

# ACRYLIC

## PERFORMANCE GUIDE

QUALITY THAT COMES TO THE SURFACE®



This guide will help you to understand why cast acrylic has been and will remain the preferred choice for bath tub manufacturers. There is a greater variety of choices on the market than in decades past and it is important to understand where the best value lies.



We start with the original cast iron tub. These are still available for extreme retro design choice but their weight and tendency to chip caused them to fall out of favor long ago. Porcelain steel, which can be just the steel shell or with an added layer of polymer foam reduces the weight but still has the vulnerability to chipping and subsequent corrosion as the cast iron tubs. In addition, these tubs have a cold feel that most consumers find shocking and unpleasant as well as dissipating the heat of the water far faster. Most cast iron or enameled steel tubs use grouted tile surrounds. This grout is porous and allows discoloration and odor.



SETTING THE  
QUALITY

Today, there are polymer (plastic) tubs of different varieties. Tubs from polymeric materials are now the most common tubs. They can be divided into four categories.



### **CAST ACRYLIC**

Cast acrylic, being crosslinked and non-porous, is resistant to stains and solvents in a way that no other polymeric system can match. The hardness and high gloss of cast acrylic make it easier to clean. Scratches and minor damage can be buffed out since the acrylic color and chemistry is consistent throughout the thickness of the sheet. Color systems are stable and weatherable and the material maintains its high gloss appearance for many years. Crosslinked cast acrylic sheet has excellent hot strength which allows it to be thermoformed into difficult shapes and profiles with less thin spots and prevents blowouts and splits during forming.



### **GEL COAT/FIBERGLASS**

Gel coat and fiberglass tubs can be porous and always have a thin veneer layer. Any porous surfaces can hold, mold, mildew and odors. Cleaning of the surface is more difficult and with cleaning, the surface dulls from the abrasion. The gel coat is vulnerable to weathering and can fade and dull over time. When exposed to natural light, it will yellow over time. The porosity as well as microcracking that occurs over time is less hygienic as it allows a moist microenvironment for microbes. The advantage of this product is economy.



### **SMC (MOLDED THERMOSET FIBERGLASS)**

SMC is chemically similar to gel coat/fiberglass and thus prone to the same issues of gel coat/fiberglass with the added constraint of an extremely high tooling cost. In addition to the tooling costs, there are also high equipment costs for heated high tonnage presses. This is also an economy product.



### **EXTRUDED ACRYLIC/ABS**

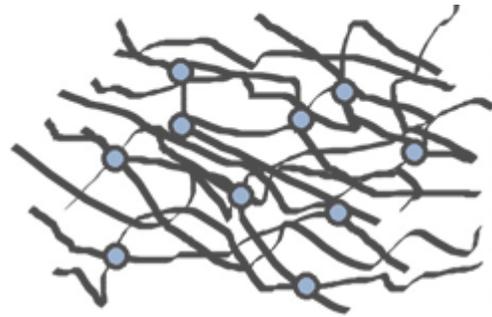
As with gel coat and SMC parts, UV and chemical resistance is far lower than cast acrylic, and thus is prone to yellowing and dulling of the surface. As the extruded acrylic is not crosslinked its hardness and chemical resistance is inferior to cast acrylic. Typically the acrylic layer of these sheets is only 10 to 15 percent of the total sheet thickness: thus, on a thermoformed part, you are left with a thin veneer acrylic layer.

# Y STANDARD

**CROSSLINKING** of acrylic is important in that it alters the properties of the acrylic. The molecular chains in the plastic are linked to form a network. In a very real sense, the entire acrylic sheet becomes a single molecule.



ENTANGLED POLYMER CHAINS



CROSSLINKED POLYMER CHAINS

This network gives the plastic superior resistance to staining and attack by common solvents. Only crosslinked cast acrylic can offer that level of stain and solvent resistance, providing longer lasting durability and beauty. From a manufacturing point of view, this gives the sheet better hot strength, providing less thinning during thermoforming and preventing splits and blowouts.

## RECYCLABILITY

Acrylic is the "greenest" plastic in existence. Even PET and PETG are not as recyclable. They can be reformed into fibers, which are industrially useful. However, acrylic can be depolymerized back to the monomer or base chemical from which it was made. No other plastic can make that claim.



### ENHANCED & CUSTOMIZED PERFORMANCE

Modified to meet your needs. Performance above our competitors.



### RELIABILITY OF SUPPLY

Our industry leading acrylic sheet outperforms others



### QUALITY

Our industry leading acrylic sheet outperforms others



### FLEXIBLE SERVICE

React quickly to customer needs



### HYGIENIC

Does not support microbial growth



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7350 Empire Drive, Florence, KY 41042 | +1.800.354.9858 | [www.aristechs-surfaces.com](http://www.aristechs-surfaces.com)

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