



**ACRYLICPOOL®**

TRANSPARENT QUALITY

**ACRYLIC  
TECHNOLOGY  
HIGHLIGHTS  
INFORMATION**

# ACRYLIC TECHNOLOGY HIGHLIGHTS INFORMATION

Development of construction technology, brings new fascinating solutions and materials. One of them, known all over the world, is slowly breaking through in our market.

This is the so-called acrylic or PMMA for short. PMMA is also known as acrylic glass, Plexiglas, organic glass, and technically it is a polymer of methyl methacrylate.

The most important feature of acrylic is that it is a material with transparency.... air. The largest PMMA panel we know of is 70 cm thick. Even with this impressive thickness, there is absolutely no loss of color or contrast.

## PMMA IS A MATERIAL "AIR-LOCKING IN ANY SOLID".

PMMA has high mechanical strength and impact resistance. In practice, it can be called a material, even armored. PMMA, on the other hand, is a relatively flaccid material. It can be assumed that where 15 mm quartz glass is enough, in the case of PMMA we need a 30 mm panel.

In addition to its perfect transparency, PMMA lends itself very well to thermoforming, which means that we can basically get any shape we want, and this is a huge advantage over quartz glass.

PMMA has infinite "patience" with the mechanical sample. It can be milled, sanded, drilled and tapped at will. "Forgives" also mistakes in mechanical processing, because, for example, you can pour liquid acrylic over an improperly machined hole and get the first state.

Another brilliant feature of acrylic is the possibility of complete renovation. Even with a large degree of surface deterioration, or extensive damage deep into the material. Our most extreme case, was the repair of a large panel, which.... was driven into by a forklift.

**THESE CHARACTERISTICS  
OF ACRYLIC MAKE IT  
IT IS MUCH EASIER  
AND SAFER TO INSTALL  
THAN GLASS.**

**WHERE QUARTZ GLASS  
GLASS UNDERGOES COMPLETE  
DESTRUCTION,  
ACRYLIC COMES OUT  
COMPLETELY WITHOUT  
SHANKING.**

Acrylic adheres in a way not known in quartz glass. The bonding is completely transparent, creating only a slight optical blemish that is really hard to see. Thanks to this, it is possible to obtain, for example, a uniform wall of several or even dozens of meters in length.

Acrylic is completely resistant to weathering, chlorine, coagulants, acid rain or exhaust deposits. Acrylic cleans up quite easily with detergents and soft (demoralized) water.

The use of acrylic is an obvious choice in the swimming pool industry, large-scale aquaristics, or industry. It is also an interesting, and not yet known in our country, choice in facades and small architecture.

There was also a period of great fashion for furniture made of acrylic. Fortunately, this is a bygone period. Acrylic offers remarkable possibilities for greenery in an enclosed space. Acrylic does not retain UVB or UVC radiation, as happens with quartz glass. As a result, plant growth is not inhibited, and the light has the same spectrum as outside.

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Acrylic technologies in the swimming pool industry are becoming increasingly fashionable, sought-after and attractive. The use of PMMA ( acrylic) material adds a new dimension to swimming pools both functional and aesthetic.

THE MOST COMMON APPLICATIONS OF ACRYLIC IN THE SWIMMING POOL INDUSTRY ARE:

UNDERWATER WINDOWS WITH FOUR POINTS OF SUPPORT

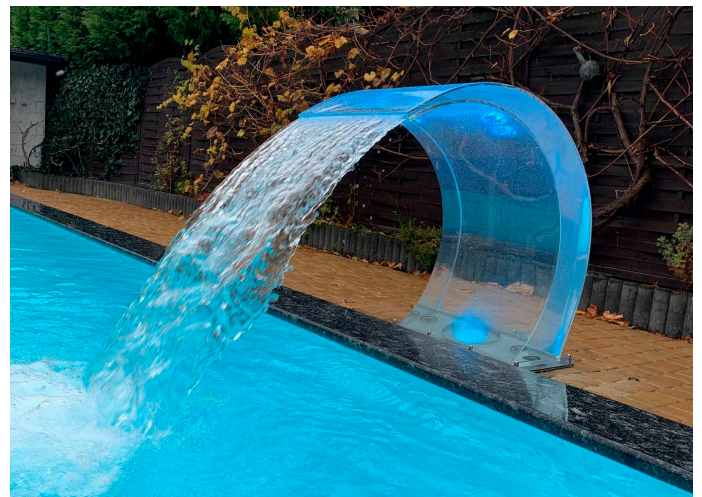
UNDERWATER WINDOWS WITH TOP LINE FREE (THREE SUPPORT POINTS)

UNDERWATER WINDOWS WITH OVERFLOW ON THE TOP LINE, SO-CALLED "ZERO EDGE"

HANGING POOLS LOCATED ON TOP OF THE BUILDING

VORTEX FUNCTION ROLLERS

CONVEX LENSES OR CONCAVE TRANSPARENT SPOUTS (COBRA TYPE)



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It is crucial to know how to design acrylic and calculate the thickness as well as the installation technology. Acrylic has the ability to be mounted to any type of basin (ceramic, steel and foil). PMMA has high and stringent requirements for the maintenance of installation regimes (temperature, ambient humidity, dust-free conditions, properly prepared substrate, etc.).

Thus, each assembly is carried out to an altered standard. The ideal conditions for assembly or face bonding are 15 to 25 degrees. At temperatures below 10 degrees, it is necessary to install a heating tent, at high temps above 30 degrees, we need to cool the bonding with ice.

In practice, we mounted acrylics in falling snow, or one like it this year, at temperatures above 40 degrees. However, these were not pleasant assemblies.

Acrylic has high thermal insulation and resistance to mechanical damage, so year-round use, in our climate, is not a problem. However, in the case of year-round , outdoor pools, we do not recommend a pool with an overflow through the acrylic, the so-called "zero edge", because on the outside on the gutter can form ice.

In addition, in the implementation of outdoor outdoor pools, the thickness of acrylic panels is increased by about 30%. Such realizations are commonly carried out around the world suffice it here to recall the huge year-round pool in London, suspended between two skyscrapers.

In the case of pools involving acrylic, where the water will not be heated in the winter season, we recommend draining the water for the winter season, but this is only due to the relatively cumbersome cleaning of acrylic before the summer season. An extremely interesting use of acrylic is when the walls of the pool is also a window in the facade. Choosing the right thickness means that there is no excessive heat loss.

Acrylic, of course, is not a cheap material. However, in the overall implementation of the pool, the use of acrylic does not increase the cost of the pool by more than 20 to 30 percent. Of course, the share of acrylic may involve a larger surface or a glazed bottom or other unusual applications, and then its cost is increased.

Currently, the Polish market for pool acrylics, is in its infancy. Most implementations involve panels in one or two walls of the pool. These are hotel pools as well as private pools. As designers and pool companies become more aware of this material, more sophisticated or larger projects will appear.

The first advanced realizations in Poland are our hanging pool and gym on top of a hotel building in Poznan, a large swimming pool located on the roof of a hotel in Kielce, or our largest project - a tunnel and underwater window system in the deepest pool in the EU, the Divespot in Mszczonow near Warsaw.

The latter, the largest acrylic realization made by a Polish company, involved enormous technical challenges. Usually the installation of such a tunnel takes place at the bottom of the pool. In our case, it took place on a footbridge, suspended in a pool more than 40 meters deep. Also, part of the assembly had to take place on high scaffolding, then from water level using pontoons and the final work was carried out by divers after the pool was already flooded.

Worldwide production of acrylic is growing at a tremendous pace. Until two decades ago, Chinese-made acrylic was of much lower quality. The main problem was its yellowing after a period of several years. Currently, acrylic produced by top Chinese manufacturers even surpasses the parameters of acrylic produced in European Union countries. As a result, acrylic produced in China, has a 20-year guarantee against yellowing and is used all over the world.

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Thus, it can be assumed that currently acrylic is a material that is identical as to its physical and chemical parameters, regardless of where it is produced.

However, the installation of acrylic is difficult and requires a lot of knowledge and practice. This is mainly due to the fact that each installation has its own peculiarities and it is necessary to modify both the use of construction chemicals and the method of installation. With dozens of assemblies of windows and other solids made of acrylic, we basically did not repeat the installation process. A certain peculiarity belonging to acrylic is the fact that you can not flood the pool with acrylic panels immediately after installation, For each realization is determined the degree of polymerization and the maximum allowable flooding temp. Acrylic panels can also be subject to the phenomenon of self-sealing, this is due to the fact that the panel is installed on the so-called "floating seal" and it needs sometimes, time to seal. However, each installation of the panel ends up with a full seal, even when it requires resin infections when the reinforced concrete itself is not made precisely.





**ACRYLICPOOL**

Sp. z o.o.

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