

Product information: Polystone® (PG/PGX) Sheets for swimming pool construction

1. General information

PG and PGX sheets are used very successfully in the construction of swimming pools. The key advantages of these materials are:

- Long service life
- Excellent surface quality
- Very good processability

Comparison with alternative pool systems:

- Compared to tiled pools: No mineral or corrosion-prone joints – therefore more hygienic and durable.
- Compared to GRP pools: Higher toughness and better stress crack resistance.

From a technical perspective, welded pools made of Polystone® sheets are today among the most reliable and durable solutions on the market – both for fabricators and for end customers.

2. Comparison of pool materials

Polystone® sheets offer decisive advantages over other materials:

	Stainless steel	Tiles	GRP	PVC/GRP	Standard PP	Polystone P PG / PGX	Polystone G PG / PGX
Optics	o	+	+	++	++	++	++
Color fastness ¹	++	++	+	++	o	+ ⁵	++
Chlorine resistance ²	++	+ ³	+	+	-/o	o/+	+
Chemical resistance ⁴	++	++ ³	+	+	+	+	++
Osmosis / permeation	++	+ ³	-	o	+	+	+
Impact resistance	+	o	-	o	+	+	+
Recyclability	+	-	-	-	++	++	++
Installation weight	-	-	+	-	++	++	++
Design flexibility	+	+	-/o	o/+	++	++	++

1 Differences depending on colors

2 Resistance against surface embrittlement caused by pool water with added chlorine or other radicals

3 Differences in tiles and grout materials

4 Urea, sunscreen, etc.

5 Advanced stabilization system

2a. Product Comparison: Polypropylene (PP) vs. Polyethylene (PE-HD) for swimming pool construction

Both materials – PP and PE – are generally suitable for pool construction and have proven themselves over many years. However, PE-HD (Polystone® G PG / G PGX) offers superior properties in several key aspects, in particular:

- Higher stress crack and chemical resistance
- Significantly better toughness under mechanical load
- Greater weather resistance – especially for outdoor pools
- Excellent weldability, even with high additive content

For long-term applications in private as well as commercial pool sectors – particularly for outdoor pools, high chlorine exposure, or fluctuating temperatures – PE-HD is clearly the preferred choice.

3. Optical properties

Despite state-of-the-art stabilization technology (e.g., Polystone® PG, PGX), superficial optical changes cannot be completely ruled out. These often appear light to white in color and result from:

- Disinfectants
- Temperature exposure
- Climatic influences

These visual effects are purely superficial and have no impact on strength, quality, or service life. They do not constitute a defect and are not covered by warranty.

Please note: Design modifications (e.g., overflow system instead of water level system, and permanent chlorine monitoring) have a positive effect on appearance. We are happy to advise you on this.

4. Recommendations for pool water treatment

To preserve material quality when using chlorine-based disinfection, the following measures are mandatory:

1. **Observe standard parameters**
 - EN 16713-3, DIN EN 16582-1, DIN 19643-1
2. **Correct dosing and application of chemicals**
 - Do not add liquid agents undiluted
 - Use chlorine tablets only in skimmers or dosing floats
 - With electro chlorination: check chlorine levels manually on a regular basis

3. Ensure water circulation

- Even distribution of disinfectants is necessary
- Avoid direct contact of undiluted chlorine with the sheet surface at all costs

4. Consider alternative disinfection methods

- When using gaseous chlorine, chlorine dioxide, or free radicals (e.g., DA-GEN), prior consultation with Röchling Industrial is required

⚠ Important: Direct contact between undiluted or insufficiently diluted agents and the sheet surface can cause irreversible discoloration.

5. Weather resistance

The materials contain several synergistically acting stabilizers of the latest generation, ensuring optimized UV resistance. Weather stability is continuously monitored and further developed through:

- Accelerated weathering tests
- Laboratory testing

Outdoor storage of up to 3 weeks is possible under normal weather conditions without adverse effects on material properties.

6. Scratch protection & film coating

- Sheets are supplied with protective film as standard
- The film protects against scratches during:
 - Transport
 - Storage
 - Installation

Handling instructions for protective film:

- Do not expose to sunlight, as the film may then become difficult to remove
 - Remove the film promptly after installation or after extended storage
 - If installation is delayed, protect the pool by other means
 - **No protective film is applied ex works to sheets with leather grain finish.**
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7. Weldability

PGX and PG sheets are generally very easy to weld. However, due to the additive content in PG and PGX products, it may be necessary to individually adjust the welding parameters.

If in doubt, or for special applications, please contact:

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