Maintenance Instructions and Limit Values for Stainless Steel Products

General information about stainless steel

Stainless steel comes in several qualities. What is commonly referred to as stainless steel is called EN 1.4401, but the extreme environment of bathing facilities and sewage treatment plants require steel of higher quality. Malmsten uses acid-resistant stainless steel of quality 1.4404 or 1.4462 in its products.

This steel is designed to better withstand the stresses in extreme environments, among other things molybdenum has been added. But even acid-resistant steel can be exposed to corrosion if the environment is too aggressive. The corrosion rarely occurs below the water surface, but the attacks usually occur 0 – 2 meters above the water surface.

Corrosion on stainless steel can be a serious indicator that the water quality is incorrect, that the maintenance is insufficient or that the ventilation is not successful in removing the trichloramine that forms in the pool.

It's important to follow these instructions to ensure the longevity and proper function of the product.

Here's a summary of the key points:

- Use Equivalent Quality Screws: When installing the product, make sure to use screws that meet the equivalent quality standard, such as EN1.4404 Stainless steel 316L. This ensures compatibility and durability.
- Avoid Contaminating Tools: Installation tools should not come into contact with any metal other than those of equivalent quality, such as SS 316L. This helps prevent contamination and maintains the integrity of the product.
- Protect the Product Surface: To prevent damage, avoid impacts or any form of physical damage to the product's surface. Keeping it in good condition is essential for its performance and appearance.
- Use Clean Water for Cleaning: When cleaning the product, use clean water, not swimming pool water. Avoid high-pressure washers or detergents, as they can potentially damage the product's surface or components.
- Ensure Proper Ventilation: Maintain good ventilation in the swimming pool area where the product is installed. Proper ventilation helps prevent moisture-related issues and ensures a healthier environment.

By adhering to these guidelines, you can help maintain the quality and functionality of the product over time.

If any stainless steel parts/surfaces show sign of rust, carry out the following immediately:

1. Rinse with fresh water, dry clean.
2. Polish the surfaces with professional polish, such as Autosol.
3. Carefully go over the surface with Scotch-Brite or similar.
   Rust stains are most likely superficial and relatively easy to remove.
4. Contact Malmsten for further consultation if 1-3 do not help.

Recommended interval cleaning

Daily:	Rinsing with fresh water (not pool water) and subsequent wiping must be done daily.
Weekly:	Wash with a soft brush or cloth on all parts over the water level, with non-chlorinated water. Polish the stainless steel products with Autosol Chrome Finish.
Yearly:	For increased longevity, professional cleaning is recommended once a year. Contact Malmsten for further information.
Note:	Steel wool or other material that risks scratching the surface must not be used. Avoid harsh chemicals that can damage the stainless steel, e.g. when cleaning floors and tiles.

MALMSTEN LIMIT VALUES FOR PRODUCT WARRANTY

Our stainless steel products are designed to meet the high demands placed on public facilities such as swimming pools and bathhouses. Using top-quality materials and a design that combines functionality and aesthetics, we offer solutions that are both durable and easy to maintain. Stainless steel guarantees a long lifespan, resistance to corrosion, and a hygienic surface that is easy to clean—perfect for environments where safety and cleanliness are essential.

Malmsten stainless steel products are manufactured from stainless steel EN 1.4404 (316L) with an electropolished surface.

Description	Technical Limit Values	Comments
Chloride Concentration	Maximum 500 mg/L at temperatures below 30 °C	To be checked during normal operational control. Recommended frequency: weekly. Must be recorded.
-"-	Max 400 mg / L at temperatures 30 °C and 34 °C	To be checked during normal operational control. Recommended frequency: weekly. Must be recorded.
-"-	Max 300 mg / L at temperatures < 35 °C	To be checked during normal operational control. Recommended frequency: weekly. Must be recorded.
Alkalinity	Project-specific	Should be discussed on a project-by-project basis due to incoming water values. To be checked during normal operational control. Recommended frequency: weekly. Must be recorded.
Iron	0.2 mg/L in fresh water 0.02 mg/L in pool water	To be checked during extended operational control. Recommended frequency: twice per year. Must be recorded.
Water Temperature	Max 37 °C	Applies to pools with Malmsten Movable Floors.
Shock chlorination		Cleaning without pool users. Must be carried out in a well-distributed manner. Not through spot treatments directly in the pool.