

SPECTRUM[®] ***Aquatics***

A **PLAYCORE** Company

Maintenance of Stainless Steel Railings And Equipment

A Guide to Care and Maintenance

2020



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All stainless steel will rust if exposed to adverse conditions such as chlorides (in swimming pools and marine environment) and other corrosive materials. However, proper maintenance procedures can prevent occurrence of damaging rust and correct rusting problems if it does occur.

Maintenance to Prevent Rusting and Corrosion

When a corrosive environment is present, stainless steel can be maintained to prevent rusting of the surface. The first and most important procedure is to make sure that the surface is passivated prior to installation of the equipment. This removes any free iron that may have been on the surface from machining, welding etc. Remember, stainless steel is around 70-80% Iron. After passivation a rust resistant chromium oxide layer forms on the surface over time, once protected by chromium stainless is considered to be 'passive' and requires little care.

After installation of stainless steel in a chloride or other corrosive environment (all swimming pools), procedures must be put in place to maintain stainless. Without care, all stainless in the pool air envelope will show surface rust. This tarnish and rust is due to chlorides reacting with oxygen and iron on the surface and in the inter-granular structure of stainless.

Daily rinsing with clean water is the best way to maintain the surface. This removes any chlorides that may have been splashed onto the surface in normal use. In addition, if ANY rust is visible it needs to be removed immediately, using a passivation product (Spectra-Clean System 1). This will remove the rust and re-passivate the surface. All areas passivated also require treatment with SPECTRA SHIELD to ensure salts do not find a way into the structure of the steel.

Maintenance of Stainless Steel that has Rusted Severely

Once the stainless steel has rusted to the degree where corrosion is flaky, that may indicate pitting. Pitting is permanent and pitted stainless requires more ongoing maintenance. But pitted or not, most rusted rails can be cleaned up with an aggressive cleaning approach.

Steps for Fixing and Maintaining Rusted Railings

- 1 Remove the rust with a Spectra-Clean System 1.
- 2 Seal the inter-granular structure with SPECTRA SHIELD.
- 3 Do regular inspections and follow-up care to remove tarnish & light rust as it appears.

Long term protection for surfaces of new stainless and old stainless can be attained by applying Spectra Shield to the surface after removing the rust and drying the surface. This forms a protective layer in the pits and inter-granular boundaries that prevents air and water from creating corrosion below the surface. Without the oxygen and salts from pool water making contact with the stainless, the rust will not grow.

NOTE: There are times other considerations that require effort not discussed above. For clarification and assistance you can call us to discuss your particular situation.

Procedures & Techniques for Stainless Steel Care & Sealing

Initial Treatment of Stainless

1

Clean rails with passivation materials.

- Start with a dry railing
- Apply passivation chemicals Spectra-Clean System 1 to rail (spray or wipe on)

NOTE: This chemical must be re-sprayed or re-applied as required to maintain a wet surface for 30 minutes.

- After 10 minutes, agitate the surface with a non-abrasive pad (3M Scotchbrite white). If visible rust does not seem to disappear, use a mildly abrasive pad (3M Scotchbrite grade maroon).

NOTE: Existing rails where there is visible crusty rust will usually require a maroon pad. Do not use a coarser 3M pad than maroon, as green and higher will scratch surface, thus creating more corrosion points.

- Re-apply chemical and agitate as required.
- After 30 minutes of wet contact, very thoroughly hose off stainless.

NOTE: Unrinsed chemical will dry white; remove all off the chemical so there is no residue after drying.

- Hand dry so that watermarks do not develop.

2

Thoroughly dry stainless.

The Stainless Steel needs to be more than dry to the touch. Seams & crevices (as well as pit pockets) must be bone dry in order to accept the sealer. The best practice is to allow steel to dry 48 hours (or more). If treating steel during pool operation, allow 4+ hours air dry & heat gun treatment to ensure water in pockets & seams etc. fully evaporates.

3

Apply Spectra-Shield Sealer

Sealing is the fastest part of the procedure. Use a cotton rag and apply sealer onto steel so that steel is wet with sealer (very wet, not just damp). Allow sealer to stay on rail for 10 minutes then use a dry cotton rag to wipe excess away.

NOTE: Spectra shield is not water soluble and is difficult to remove. Be Careful to minimize amount of sealer that hits deck, glass or other surfaces.

Spot Treatment Follow-up Care

Any area of rail that was not passivated or where sealer did not 'take' will begin to show rust after treatment (usually due to either not dry enough prior to sealer application or not sealed). If this occurs, re-treat using this procedure adapted for smaller scale.

1

Thoroughly clean specific spot using Spectra-Clean System 1 spray; keep area wet with Spectra-Clean System 1 for 30 minutes.

2

Area must be very dry before final step; for small areas at an aquatic center a heat gun is an ideal solution.

NOTE: Areas need to be heated to the point that the metal is warm to hot; resulting in evaporation of water in crevices, seams and pits (heat to hot-to the touch).

3

Once spot has cooled, apply SPECTRA SHIELD generously to surface (surface should be very wet, but doesn't need to be dripping).

4

After 10 minutes, wipe area with dry cotton cloth.

Care of Common Miscellaneous Deck Items

These procedures are just variations of SPOT cleaning as outlined above that have been adapted to specific deck problems we have found over time.

Floor Drain Covers and Other Similar Removable Items

These small removable items (floor drain grates, some escutcheons, and some compression anchor parts) can be treated by removing them. We recommend acquiring spares to allow removal and treatment. Remove small items and follow a variation of application procedure from above.

1

Soak in Spectra-Clean System 1 in a bucket or other plastic container. The plastic container must be free of any contaminants or residue of any sort.

2 Heavy corrosion may require a stainless steel brush and or green Scotchbrite. Scrub with Scotchbrite as required to remove all corrosion.

3 Rinse very thoroughly.

4 Allow to air dry 24 hours or more, ideally off pool deck and in a warm environment. Or apply heat with heat gun as required to ensure all pits and crevices are DRY.

5 Soak in SPECTRA SHIELD in a bucket for 10 minutes. Remove from bucket and dry off excess sealer with dry cotton cloth.

Anchors Embedded in Cement

Anchors in cement where rust is appearing need to be treated in place. (Stanchion post anchors and some compression anchors).

1 Remove post or grab bar if the is one, so anchor is empty.

2 Remove lids to anchor if present.

3 Clean with Spectra-Clean System 1 using a Scotchbrite pad to agitate. Coarseness of Scotchbrite pad should match amount of corrosion. Some heavy corrosion may require a stainless steel brush and or green Scotchbrite. Scrub with Scotchbrite as required removing all corrosion.

4 Rinse very thoroughly.

5 Dry the entire anchor inside and out with a clean cotton towel to remove excess water. Treat anchor with heat gun both at the flange at deck surface and the interior of anchor. The goal is to get enough heat onto metal that it's fairly hot to touch and all water in pores and seams evaporates both on top and inside.

- 6 The final step is an application of SPECTRA SHIELD. Apply SPECTRA SHIELD generously to surface (surface to be very wet but not dripping). After 10 minutes wipe area with dry cotton cloth.

Wall Plates, Door Hardware, Fountains, and Other Similar Stainless Items

These pieces use the same procedure as spot cleaning as outlined above. However, where you cannot hose a piece of equipment, use multiple wet rags to wipe off passivation materials prior to drying and treating with SPECTRA SHIELD.

- 1 Thoroughly clean using Spectra-Clean System 1 Spray; keep area wet with Spectra-Clean System 1 for 30 minutes
- 2 Remove Spectra-Clean System 1 with wet clothes/sponges.
- 3 Area must be very dry before final step; for small areas at an aquatic center a heat gun is an ideal solution.

NOTE: Areas need to be heated to the point that the metal is warm to hot; resulting in evaporation of water in crevices, seams and pits (heat to hot-to the touch).

- 4 Once spot has cooled, apply SPECTRA SHIELD generously to surface (surface should be very wet, but doesn't need to be dripping).
- 5 After 10 minutes, wipe area with dry cotton cloth.

*Please contact your local distributor or
Spectrum Aquatics' Customer Service to order parts 800-791-8056.
Or visit our website at www.spectrumproducts.com