

LONG-TERM PROTECTION OF STAINLESS STEEL IN AESTHETIC OR CONSTRUCTIVE USE

Introduction

Vecom regularly publishes articles about the importance of pickling stainless steel in order to prevent corrosion. We would like to draw your attention in this bulletin to a concept newly developed by Vecom whereby stainless steel, even in a corrosive environment, can be kept in condition in the long-term.

Vecom had two concrete reasons to develop this concept. On one hand the large amount of aesthetically used stainless steel in constructions such as outer wall cladding, bridge railings, fences and waste bins where anybody can see that there is surface corrosion.



Photo above and below:
Corrosion on public stainless steel objects



On the other hand an often invisible, but very serious form of corrosion in supporting stainless steel constructions. We encountered the latter mainly in very corrosive environments, such as for example swimming pools (see photo on the next page).

In both cases the surface or accessibility makes regular pickling impossible and a protective coating will therefore have to be applied after an initial pickling treatment, which provides long-term protection to the chromium oxide film of the stainless steel. In aesthetic cases it is naturally necessary to maintain the original appearance of the stainless steel. This is of appreciably less importance in the case of a supporting stainless steel construction.

The concept: Vecinox® Enviro-Shield

“Simple to process” is an important requirement in the development of this concept. This was the reason that an identical basic treatment with Vecinox Stainless Steel Cleaner, a mildly acidic cleaning agent, was chosen for both aesthetic and constructive applications. This removes all contamination, corrosion products and returns the chromium oxide skin to its original condition. This is followed by flushing and drying. A clean stainless steel surface is essential for the action of the protective coating. An insufficiently clean surface can have a negative influence on the corrosion resistance of the stainless steel and can undo the effects of the Vecinox Protect. Vecinox Protect spray is applied lastly in aesthetic applications. This applies a protective transparent coating with a deep gloss on the material. Vecinox ProtectWax is preferred for constructive applications. As the name implies, this is a relative more wear-proof wax coating, which offers very long-term protection. Regular treatment makes a new pickling/acid treatment unnecessary with both Vecinox Protect products. The total concept will be put on the market this year under the name Vecinox Enviro-Shield.

Uses

As can be deduced from the above information, the Vecinox Enviro-Shield concept will in the first instance be used by municipalities and building supervisors to treat stainless steel in public use (bridge railings, benches) and architectonic processed stainless steel (outer wall cladding, and also lift doors and suchlike). Special attention will also be given to constructive stainless steel applications in swimming pools (subjected to a lot of chlorine vapour). Finally, Vecinox Enviro-Shield also offers good protection in industrial applications, such as stainless steel pipeline systems on drilling platforms or in coastal areas.



Processing in only 3 steps

If the surface has already been damaged by corrosion, the first step is treatment with Vecinox Stainless Steel Cleaner. Allow for a reaction time of 15 to 30 minutes and a start can then be made on step 2. The surface must be rinsed with (warm) demineralised water. The use of demineralised water is very strongly recommended because, contrary to tap water, it contains no chlorides or iron (compounds).

Washing off at high pressure is preferred for large outdoor surfaces and other situations that allow this. In an indoor situation, a good rinse with (warm) demineralised water and a good rub with a damp cloth will suffice.

Once the surface is good and dry the third and last step is carried out. The application of the protective coating. This consists of a Vecinox Protect spray on aesthetic surfaces, and rubbing this emulsion until a thin film is produced. The surface is then clean and the chromium oxide film of the stainless steel is fully restored and protected. In supporting constructions the last step consists of spraying with Vecinox ProtectWax. This needs no further treatment.

It is not possible to indicate an exact period in which the stainless steel will remain fully protected because this largely depends on the quality of steps 1 and 2 and the environment in which the stainless steel is found. Tests have however shown that the durability compared with untreated stainless steel is increased 20 to 50 times (figures 6 to 10). Regular treatment with Vecinox Protect spray or Vecinox ProtectWax keeps the surface intact.

Always first consult the Product Safety Sheets before using these products.

Total subcontracting

Total subcontracting can be necessary in the event of very large and/or intensive cleanings. Vecom has been carrying out such cleanings for decades with cleaning teams who are active daily at various locations at home and abroad. These teams can if needed provide training on location so that the client can subsequently carry out the cleaning himself



Serious form of corrosion in supporting stainless steel constructions.

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