



06.
CARE AND
MAINTENANCE

06.1. DIRT, DUST AND FINGERPRINTS

If contaminations or staining have occurred in spite of the best care being taken, cleaning is possible in principle, but this is often arduous, time-consuming and costly. Firstly, the type of contamination must be established, so as to remedy this in a targeted way.

Possible types of staining may be:

- **Paint and mortar sprays, plaster dust, cement**

They mostly occur through transport or processing of paint or mortar or subsequent trade work at places which have not been properly covered. As long as the splatters and deposits are still quite fresh and liquid, the stains can to a large extent be removed with water or appropriate solvents. It is always recommended that this kind of splatter is removed as quickly as possible.

Older splatters of this kind or encrustations of contaminations on bright elZinc® titanium zinc can be cleaned by vigorous rubbing with stainless steel wool or a scrubbing machine. The places that have been worked on should then be given subsequent treatment with acid-free façade oil or titanium zinc passivation oil.

With pre-weathered elZinc® titanium zinc, the removal of dried out contaminations poses considerable difficulties. It may therefore be advisable for small contaminations that are less noticeable not to be removed but rather to wait for these contaminations to be covered over by natural weathering.

- **Rust-red coloured iron oxide coating**

Red rust spots can occur if steel building components rust above elZinc® titanium zinc surfaces or due to rusting borings / swarf from the processing of the steel which have not been removed. These spots can also be removed from bright elZinc® titanium zinc by abrasive cleaning, as already explained previously.

With pre-weathered elZinc® titanium zinc, the removal of intensive rust spots is practically impossible, without destroying the pre-weathering layer (locally).

- **Traces of runs and stains from contaminated water or working materials**

Liquid working materials, such as those required for instance when cleaning masonry or sealing joints, can leave traces behind on the elZinc® titanium zinc through carelessness. Brownish to olive brown stains appear, when water running off from bitumen covered and PVC coated areas contains organic components which have been loosened by weathering. Fresh stains can be removed from bright elZinc® titanium zinc relatively easily by hard rubbing, if necessary supported by abrasive cleaning.

With pre-weathered elZinc® titanium zinc, the removal of intensive stains is only possible by means of appropriate special cleaning agents, provided that the stains have not coloured right through the pre-weathering layer. Old, intensive stains can hardly be completely removed on pre-weathered elZinc® titanium zinc, without destroying the pre-weathering layer (locally).

- **Discolourations due to flux residues that have not been removed**

Due to the lengthy effect of flux residues from soldering, acidic emulsions and oils, etc., discolourations occur that have penetrated deep into the surface of the titanium zinc and they can no longer be readily eliminated completely.

A treatment with chemical cleaning agents only leads to an impairment of appearance. In extreme cases, an abrasive treatment must be carried out “right to the base of the discolouration” until the stain is no longer noticeable after the onset of the natural formation of the top layer.

Because the area is made really extensively reactive by the cleaning, the places that have been worked on should then be given subsequent treatment with acid-free façade oil or titanium zinc passivation oil.

- **Zinc hydroxide - “white rust”**

Whitish discolourations may appear on new titanium zinc building components or on roof or wall areas which can arise due to the prolonged effects of moisture, e.g. through incorrect storage without the possibility of drying out or intensive dew formation.

Zinc hydroxide, a loose porous corrosion product, forms at the discoloured spots on the bright elZinc® titanium zinc. The staining is increased when the infiltrating moisture is slightly alkaline. Where there is a short-term effect, only a “foggy whitish discolouration” appears, which changes into the natural matt grey-blue colour in the course of the natural formation of the top layer without leaving any residue.

When white rust is not too prominent, it can be removed by brushing off (use semi-rigid bristles, not a metal brush!) and subsequent washing with clean warm water without there being any effect on the sheet thickness. Certainly, somewhat darker stains at first remain in these spots, but these are taken over by the surrounding material in the course of the natural formation of the top layer and are then no longer visible.

With pre-weathered elZinc® titanium zinc, the removal of white rust, when it can no longer be removed by neutral rinsing and light brushing with soft bristles, is only possible using appropriate special cleaning agents, provided that the stains have not coloured right through the pre-weathering layer.

- **Adhesive residues**

Adhesive residues from adhesive strips, or also protective films that have remained on the surface too long, do not as a general rule corrode either bright or pre-weathered elZinc® titanium zinc. It can certainly take a lot of effort to remove the adhesive residues cleanly.

You should not attempt to rub off the residues by really hard abrasion or even mechanically; a lot can often already be removed using warm water (without anything added). Resistant adhesive residues must be removed using special solvents which do not corrode the elZinc® surface.

The removal of discolourations and contaminations is often only possible by means of processes and resources which are specifically tailored to the effect, once the media which are having the effect have already reacted with the high-quality elZinc® surface. In addition, it is often hard to assess whether the surface has already been damaged.

Since, where the effects are recent, the corrosion has only had a tiny impact due to the very effective surface treatment at the factory by ASTURIANA DE LAMINADOS, it is often more sensible to wait for the natural development (formation of the natural top layer), which in most cases provides a good covering and alignment of the surface discolourations or stains.

If there is any doubt, the expertise of the technical application consultancy service of ASTURIANA DE LAMINADOS is available to provide support; on no account is it advisable to make any use at all of "chemical metal cleaning agents", as these often affect the surface in a really aggressive way and, if necessary, must be neutralised or supplemented by a subsequent treatment of the cleaned areas.

If chemical cleaning agents are used, then an area which is not noticeable should always be cleaned as a trial and in particular the normal subsequent treatment / neutralisation of the cleaned areas should be tried out. If abrasive cleaning is carried out (bright-rolled elZinc® titanium zinc), the area must then always be passivated (façade oil), to avoid noticeable dark staining.

06.2. OXIDATION AND TEMPORARY DISCOLOURATIONS

The bright-rolled elZinc® surface runs on through the natural passivation process (natural formation of the top layer, “zinc patina”) up to the formation of the uniform matt grey colouring.

This process is certainly influenced and controlled by the weathering process, that is areas which have for instance been sheltered by a roof overhang from the direct impact of rain will react somewhat more slowly. And when there are dirt deposits (atmospheric gases or dust carried in by the wind) on the surface, the consistency of the natural reaction can be affected.

It should therefore always be assumed that the development of the change to a matt grey colour will not happen in a completely consistent way; in practice, there will regularly be areas which are already matter and also darker and other areas which still even have the metallic sheen of the fresh elZinc® surface.

Areas which have a flat pitch, which means that individual raindrops have an effect, can begin to show small dark stains at the spots where the raindrops have dried out, especially when the raindrops for instance absorb certain harmful substances from the air after a long dry period. These stain patterns merge in the course of the natural development and then form the characteristic consistent colour of weathered elZinc® titanium zinc.

The colour change (in the case of elZinc® titanium zinc: the formation of the “zinc patina”) is a common behaviour of all metals for construction, as all metals for construction only achieve their definitive colouring after a suitably long period of weathering.

When the characteristic colour of the passivated elZinc® surface is required right from the start, pre-weathered elZinc® titanium zinc should be used, as this colouring already anticipates the natural colouration which is to be expected. It should however be noted that (after the pre-treatment layer has weathered as planned and has been replaced by the natural top layer) the colour of the zinc patina is always (slightly) affected by local influences, so that there may be small changes of colour with respect to the condition when new depending on the exposure.



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06.3. MAINTENANCE OF ELZINC® ROOFS AND FAÇADES

elZinc® titanium zinc is maintenance-free.

The bright-rolled elZinc® titanium zinc goes through the natural passivation process until the relatively thick top layer is formed. When this top layer is damaged, for example by mechanical scratches, it reforms at these places.

With pre-weathered elZinc® titanium zinc, the pre-weathering layer applied at the factory is replaced by the natural top layer after a long period of weathering as a result of natural processes; this proceeds smoothly.

The natural top layer which is formed is very stable and protects the titanium zinc surface underneath it against corrosive atmospheric pollution. This gives elZinc® titanium zinc its durable protection, which is characteristic of elZinc® titanium zinc.

Dirt which is deposited on the top layer that has formed is sufficiently washed off by rain (self-cleaning), without there being any need for care products.

Only when for example salt deposits lead to heavy salt encrustations in the vicinity of the sea or in the area where de-icing salt which is used in winter gets onto the surface and settles there, must these encrustations and deposits be regularly washed off. Likewise, heavy chemical contaminations must be removed and neutralised.

It is not advisable to clean the surface using chemical cleaning agents as a care measure, since the natural top layer that has formed could be damaged by this. Only when the top layer which has formed is discoloured as a result of particularly intensive discolouring contaminations, can they be locally removed chemically or abrasively. The top layer automatically reforms in these places over time.

Further comprehensive information on creating, installing and forming details with elZinc® titanium zinc can be found in the comprehensive handbook "Installation and Processing Guidelines for elZinc® Titanium Zinc".

Please contact your ASTURIANA DE LAMINADOS representative to request your personal copy.