

By inspecting and maintaining the colour coated products their lifetime can be extended significantly.

Product Lifetime

In the case of sheet metal products, it is customary to use two different measurements of life, the aesthetic and technical.

Aesthetic life is a measure of the time until the colour layer has changed so much that the look is no longer able to meet the requirements set. What is acceptable when it comes to the colour and gloss change, for sheet metal cladding, depends on who assesses it. Technical lifetime is the time until the plate is no longer able to protect the building or underlying structures. The technical lifetime is usually considerably longer than the aesthetic.

There are also lifetime differences between different coating systems and colours within the same system. Light colours will be less heated by the sun they have therefore generally longer lifetime than dark colours, which can become very hot. Lifetime also depends on whether the material is used for wall or roofing. Roofs facing south, where the slope is small, are more affected by the sun than the surfaces facing towards to north.

External factors affecting the lifetime

The environment around a building has a great affect how the colour ages. Heavily trafficked roads, polluting industries, etc. affect the lifetime of the plate's protective paint and zinc layer. Solar radiation also affects the paint layer's aging in two ways, by ultraviolet radiation and by heating. Both contribute in the long run to the colour deterioration.

Certain weather conditions and proximity to salt water, marine environment, also affects the intended colour aging. Sheet lifetime also depends on how much of the plate's cutting edge is exposed.

Folded plan sheet with folded clip edges are more capable for tougher environments than profiled sheet metal with exposed edges. Damage in the paint coating, which can occur both in construction and afterwards, can make the plate be less protective against environmental stresses. Colour coatings with thin layers are more sensitive to scratches and corrosion than the thick layer coatings.

Aesthetic product lifetime

The aesthetic lifetime is largely determined by adjusting product selection and construction design.

- Choose the right coating for the current environment.
- Select materials for fasteners and fittings so that electrochemical corrosion is not possible.
- Construct so that remaining water is avoided.
- Make a careful assembly and prevent scratches on the plate.
- Inspect the sheet regularly and improve paint damage in the surface layer directly when it's necessary.
- Rinse the plates that are not washed by rain water.
- Clean the hang gutters regularly.

Maintenance

For an effective maintenance an annual inspection of the building's sheet metal surfaces is required. At this annual inspection, the following should be checked and corrected: Paint condition, pigment changes, colour change or cracking of the surface, especially where the rain can not sweep clean the plate. Citing state and assessment if washing, cleaning, treatment of edge corrosion, improvement painting or repainting is necessary.

- Rubbish in the gutter, gully valleys and other water passages, where a damp surface is loosing the paint layer.
- Clogged water passages increases the risk of corrosion and related water leakage into the building.
- Clear gutters and water assets from the debris that bind moisture and corrosive substances.
- Rubbish on the plate increases the risk of corrosion, because the underlying surface is continuously wet, remove the debris so the plate surface can dry up.
- Damage in the colour layer increases the risk of corrosion.
- Verification of damage in the paint layer should be done even when the building is new.
- Consider improvements, repainting or replacing the plate depending on the extent and nature of injury.
- Loose fasteners, drill shavings or other metal that is directly on the roof and can cause corrosion, remove the sawdust and/or metal objects.
- Incorrect or improperly attached fasteners. These can cause both leakage and corrosion.
- Change the wrong fasteners, if the thread is broken, change to a larger dimension.
- Edge corrosion, cutting edges at the overlapping plates and the plate ends. Corrosion can spread if not treated in time. Make the damaged edge completely clean and paint, see section below.

Restoration of paint coating

- Clean the surface
- Use improvement paint for minor damages
- Treat corrosion damages
- Implement the repainting of the entire surface

Cleaning

It is often enough that the rain keeps the plate clean. The deposits of dirt that the rain is not able to rinse off, you can wash off with a soft brush and water, or a high pressure washer.

Be extra careful with surfaces that are in the so-called rain shadow, that is where the rain can not access to rinse the plate clean. Remember that hanging gutters can be filled with leaves, moss etc. and require flushing. In areas with polluted air you may need a detergent solution to clean the plate. You can use ordinary or industrial dishwashing detergent. Dosage recommended by the manufacturer. Rinse afterwards, use high pressure rinse if possible.

Washing advice

Stronger solutions than those recommended could damage the colour. Rinse thoroughly, so all the detergent residue disappears. Avoid organic solvents and abrasive detergent. Apply the cleaner from the bottom up, rinse from top to bottom. Work carefully, excessive washing does more harm than good.

Edge corrosion

Sometimes edge corrosion occurs. Cutting edges constantly exposed to water will exhibit small bubbles or exfoliation nearest edge. This is because the underlying zinc migrates to the naked plate edge. In aggressive environments edge corrosion arises and should be addressed if you want to maintain the plate intact.

Sand or scrape off any loose paint or corrosion residue, carpet down a narrow area of adjacent original color.

If the edge has red rust, grind or blast away all rust to clean the plate surface.

Clean with alkaline degreasing agent, such as 5% caustic soda with the addition of any detergent.

Paint with zinc-rich rust protection primer on the cleaned surface.

Paint the top colour, even in the less glossy surface.

At the edge corrosion see especially that colour encloses the cutting edge (the paint should take on bulbous form)

Edge corrosion at overlap-jointed sheet may be more difficult to treat by the bottom where it is not accessible for cleaning.

A solution to this is to seal the joint, ie trimming is carried out as described above and then apply a sealant over joint.

Treatment of scratches

Corrosion can also occur next to scratches in the paint layer encountered for example at shoveling of snow, the installation of satellite dishes, or in construction work.

If the colour layer has minor scratches, they can be repaired by improvement paint. One such measure involves the use of a narrow brush, paint only in the place that has been scratched, air-drying paint is used.

As one might expect this new colour will appear different than the factory painted colour (because of aging). Therefore it is important that colour is applied only where it is needed.

Repainting

Colour changes, exfoliation, corrosion, or you simply want to change the colour, are examples of reasons why you want to paint on the plate surface

By repainting the plate its lifetime can be extended considerably.

Repainting of the exterior sheet metal should always be performed by professionals and with an approved colour system.

Suppliers of repainting systems on the market has instructions for how repainting should be done with each system.

An experienced painting contractor possesses the necessary knowledge to make the entire process from inspection to finished painting.

Painting work

Sheet metal surfaces should be dry and clean from dirt and grease before painted on. Remove loose paint and other particles with scraping and wire brushed.

Surfaces with red rust must be steel brushed carefully or blasted.

Clean with alkaline degreasing agent, such as 5% caustic soda with the addition of any detergent. Please use the high pressure rinse if possible. Rinse with clean water and let the plate dry.

Before starting the repainting the adhesion of the old colour should be controlled by the adhesion test. The principle of this test is to let the edge of a coin or a key be printed on the colour layer. If image is printed in the colour there is still adhesion. If scratching results in paint flakes, the adhesion has been lost and the colour layer must be removed before repainting.

NOTE! To reduce the risk of different colour shading the colour must be mixed thoroughly.

Do not paint in direct sunlight and in temperatures below five degrees. Ideally temperature should be at least 15 degrees. Relative humidity must be above 80% and should not exceed 65%.

Select colour scheme depending on surface and damage

When the zinc layer is gone the plate must be painted with a zinc-rich primer first. If the colour is gone, but zinc layer is intact, the plate should be primed with a wash primer.

If the old paint is intact, and there is adhesion between the zinc layer and paint layer, it can be painted over, after normal cleaning. Use brush, roller or spraying to do the work. Choose a thin and soft brush for the improvement painting of small areas.

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