



Life cycle of Rokcore panels

Air pollution and corrosion

When external walls are situated near industrial areas, major cities and coastlines, impurities and air pollution in the form of sulphur dioxide, nitrogen oxides, chlorine gases, soot and other types of dirt can accumulate. Air pollution combined with humidity can generate acids, such as sulphuric, nitric and hydrochloric acid, which have an adverse effect on coatings.

Corrosion does not take place in the absence of water. The corrosive effect of salts in the air depends largely on their moisture-binding



capability. When layers of salts form on the wall surface, they can increase the moisture level in contact with the surface which, to a great extent, determines the corrosive impact of the climate.

In coastal areas, corrosion is caused by salt from the sea accumulating on the wall surfaces. Wall areas protected by eaves will require cleaning.

Regular service to ensure longer lifetime

Facings

On average, the service life of an intact original paint coating is 25-40 years depending on coating type, building method and climatic conditions.

Over time, the surface appearance will change due to dirt build up, dulling of the surface or an alteration in colour tones. The greatest impact is caused by air impurities, UV and heat radiation. Dark surfaces are subject to the highest stress. On north facing walls, the surface temperature of dark paint surfaces may reach +80°C with light colours reaching 55°C.

The service life for dark colours is somewhat shorter than for light colours due to the higher thermal load.

If the integrity of the paint coating is compromised, the panel is still protected by the zinc coating. It is recommended that PVDF (PVF2) coatings are repainted for maintenance purposes after 20-30 years and polyester coatings after 15-20 years. This will restore the paint surface to almost new condition and it can be repainted again after 10-25 years, which will give it a service life of over 50 years.

Scratches and dents

Scratches and dents have an adverse effect on the service life of the panel and should therefore always be repaired. The damaged area is often small making the repair quick and easy if it is made immediately. It may become more difficult to repair after time. It may also be difficult to make the damage unnoticeable as the colour of the patch-paint may not completely match the old coating.

Cleaning of panels

Colour coated steel sheets

Dirty or stained areas can be washed with a soft brush and water. Water pressure cleaning (max 50 bar) can also be used, but the water-spray must not be applied too close or perpendicular to the coating. At panel joints, the waterspray should be directed at a downwards angle to avoid spraying pressurized water directly into the joints. Old coatings should be treated with special care.

Difficult stains can be removed using recommended detergents. The pH value of the detergent should be between 5-10.

Always wash the surfaces from the bottom upwards and carefully rinse off the detergent with water

after a few minutes, working from the top to the bottom. Finally, the rainwater systems should be rinsed with water.

If detergents suitable for painted coatings are not available, car shampoos and a car-washing brush can be used. However, car shampoo is not recommended if the panel surface is to be painted. They often contain wax, which may weaken the adhesion of the new paint.

Washing graffiti off PVDF surface

To wash graffiti off the surface, use detergent W-GRA or its equivalent. You will need a cloth, water and gloves for protection.

W-GRA or its equivalent is applied using a cloth or by spraying on the dry graffiti. Give the detergent 0.5 - 5 minutes to act, depending on the temperature. High temperature will accelerate and a low temperature will slow down the effect of the detergent. The working temperature should be above 0°C.

Check the effectiveness by wiping with a cloth. Use caution as extended contact with the cleaning agent may be harmful to the PVDF coating.

Wipe off the detergent and graffiti with a dry cloth and rinse the surface carefully with water or clean with a damp cloth followed with a dry cloth.

Panels in use

Deflection

Panels deflect due to load actions (wind pressure and suction) as well as the effect of the temperature gradient between the internal and external surfaces of the panel. This deflection has to be considered when designing panel connections to other structures.

Cut-outs and penetrations

If the cut-outs are larger than 200mm, structural integrity of the panel could be compromised. Please contact CSR Panel Systems for advice.

Cut-outs for penetrations are normally so small that no special measures are required. If a penetration is made in a fire-partitioning wall, the penetration must fulfill the same fire technical requirements as the wall.

Protection of load-bearing ceiling

Normal, occasional foot traffic may not be harmful to the panels. Panels subject to frequent foot traffic, for instance at entrance doors and where equipment is installed, have to be protected using 10-20mm thick, rigid rock wool slabs and load-distributing building boards. For other passages and installation

areas, protection with 15mm plywood is sufficient. Loads caused by permanent foot traffic have to be steered to the loadbearing frame.

Cut-outs may weaken the ceiling panels and foot traffic near the cut-outs should be avoided. Heavy loads, for instance caused by heavy equipment, always have to be checked. Also point loads caused by ladders etc. require protection.

Annual checking

Annual checking and service are very important for the condition of the whole building. In order to obtain optimum service life for facades, perform annual checks and required repairs in accordance with the table below. Annual checks performed and actions taken should also be registered.



Annual checking of facades	
To be checked	Action to be taken
Dirt on painted surface	Visually assess, is the complete wall or only shaded parts in need of washing → Wash surfaces
Condition of painted surfaces (cracks, discoloured areas)	Evaluate is the wall in need of touch-up painting or repainting → Paint If there are several defect areas or it is unevenly discoloured, it is recommended that an expert is contacted for repair consultation
Scratches and dents	Check the panels for scratches and dents → Touch-up paint, repair of dents
Panel fixing screws	Pull out one screw and check its condition. If rusted, contact the screw manufacturer for consultation on the need of additional fixing.
Flashing fixing screws	Check the grip of the screws. If loose and not possible to tighten, replace it with a bigger one.
Corrosion of cut edges of flashings	Check the condition of cut edges. If the ends are rusted, remove the rust and clean them. Paint the area with an approved paint
Flashing tightness	Check that the flashings are tight against the panel. If gap, add flashing screws

Painting and repair of panels

Painting

Preparatory work

Before painting, clean the old paint surface as described under “Cleaning of panels” and let dry properly. Strip off peeling parts of the surface and grind off visible rust. Any dent in a panel is to be rectified in accordance with recommendations outlined by CSR Panel Systems. Please contact CSR Panel Systems for advice. Apply primer on cleaned surfaces.

Touch-up painting

Scratches, dents, abrasions or flaking may appear on the painted surface. This can be caused by improper handling of installation tools, panel lifting or handling, or package and transport damage.

Small marks are of no significance unless the paint surface is visibly broken. If the surface is broken, impurities and moisture tend to accumulate in the defect area. A narrow scratch in the paint surface corrodes faster than a more extensive area peeled off the surface.

Small scratches are painted using a thin paintbrush (Repair Kit, Touch-up paint). More extensive scratches including surrounding areas are first roughened lightly using abrasive paper or corresponding.

If the defect reaches only to the primer coat, one paint layer is sufficient. However, if the scratch reaches through the whole colour coating to the zinc layer, it is recommended that the surface

be painted a second time after the first layer has dried. Before painting, always check the paint colour on a small test area.

Repainting of coating

Defects in the coating and significant changes in colour or gloss are the most common reasons for repainting of coatings. The number of coats required depends on the cover achieved with the first paint coat. If the original colour is still slightly visible, a second coat has to be applied after the first has dried. When changing the colour of the coating, two repaint coats are usually needed. It is recommended that the surface of PVDF be roughened before repainting.



Disclaimer

The information presented herein is supplied in good faith and to the best of our knowledge was accurate at the time of preparation. The provision of this information should not be construed as a recommendation to use any of our products in violation of any patent rights or in breach of any statute or regulation. Users are advised to make their own determination as to the suitability of this information in relation to their particular purpose or specific circumstances. Since the information contained in this document may be applied under conditions beyond our control, no responsibility can be accepted by CSR Building Products, or its staff for any loss or damage caused by any person acting or refraining from action as a result of misuse of this information.

CSR Panel Systems is a division of CSR Building Products Limited A.B.N. 55 008 631 356. The following are trademarks of CSR Building Products Limited: CSR™, Rokcore™.

No. CP33/RC-042008