

## Guidelines of periodical inspections and conservation of housing conducted from layered panels GORLICKA

In order to ensure adequate durability and prolong the permanence of the housing from layered panels **GORLICKA**, inspection of the quality of external and internal layers of the panels should be conducted at least once per year, in order to check the state of the panels' quality and eliminate any threats of the panels' durability.

It is recommended to perform an inspection beginning from the completion of construction, annually after the autumn-winter period (April-May), together with a representative of the company **GÓR-STAL SP. Z O.O.** in order to check the conditions of use and confirm the conditions of the guarantee provided by **GÓR-STAL SP. Z O.O.**

During the course of the guarantee, each inspection should take place in the presence of a representative of **GÓR-STAL SP. Z O.O.** and should be confirmed by a protocol or otherwise the guarantee shall be lost. It is recommended to perform an inspection after the guarantee period, which will allow for a detailed assessment of the housing's conditions and take any measures in order to prolong its durability and remove any potential damages.

During the inspection, the conditions of the housing's elements should be controlled each time as below:

Element	Necessary measures
<b>Drainage system – gutters:</b> Potential blockages can cause overflow and damp patches inside the building	Remove the dirt and clean the places of stagnation.
<b>Building waste:</b> Potentially not removed building waste (garbage) that touch the panels directly (especially on the roof) may cause the maintenance of dampness and cause local corrosion points.	Remove waste and clean the connection points.
<b>Clusters of dust and dirt on the housing in places not washed by rainfall:</b> Clusters of dirt cause a worsening of the housing's aesthetics, and in the case of long-lasting occurrence damage of the painting coat may be caused	Clean and wash dirty areas according to the guidelines from the point "Washing the housing".
<b>Clusters of plant flora:</b> In exceptional situations, clusters of plant flora may occur, in shadowed places and covered from rainfall.	Clean the overgrown places and wash in accordance with the guidelines from the point "Cleaning fungi, moss and mould".
<b>Small mechanical malfunctions:</b> In the case of small mechanical malfunctions breaching the paint coat, areas of corrosion of the steel sheets may occur.	Assess the size of damages, in the case of: <ol style="list-style-type: none"> <li>1. Small scratches – paint the places with touch-up paint in accordance with the point "Correction painting".</li> <li>2. Surface damages – repaint the damaged surface in accordance with the recommendations of the point "Surface painting".</li> <li>3. Serious damages of covering sheets – changing the panel sheets or entire panels.</li> </ol>
<b>Filings on surfaces and cuttings of panels:</b> May cause small corrosion of edges.	Delicately clean the edges from filings.
<b>State of connectors used:</b> Wrongly installed connectors may cause slight leaks or areas of corrosion on connectors.	Change damaged or corroding connectors and complete the masking hoods (if necessary).
<b>Corrosion on the cutting edges:</b> It may occur on cutting edges next to installation works and connections – where the cutting sheet joins the paint coat.	Treat the edges in accordance with the point "Securing cutting edges".

## WASHING THE HOUSING

Rainfall is a sufficient washing factor allowing to maintain natural external cleanliness. In the case of wanting to prolong the aesthetic durability of panels, one should particularly care for the housing's cleanliness, i.e. remove dirtiness gathering on the panels and not – removed naturally by rainfall from their surface in order to prevent the occurrence of so-called corrosion of the enamel coat. Washing should be conducted with the use of running water under pressure, in the case of permanent dirt, generally available household washing detergents are recommended (detergents for washing car metal sheets), preparing solutions of 10% concentrations or according to the recommendations of the manufacturer.

GÓR-STAL SP. Z O.O. can provide the manufacturer of specialist washing detergents at the request of the client.

In the case of cleaning, the following precautions should be taken:

1. High concentrations of washing detergents can cause damage of the enamel coat.
2. All areas washed with detergents should be thoroughly rinsed with running water.
3. Organic dissolvent and abrasive substances (pastes, powders) cannot be used for washing. In the case of dirtiness from sealants (silicones, butyl, etc.) or bituminous masses, they should be removed with mineral dissolvent or in accordance with the recommendations of the mass's manufacturer. These areas should always be rinsed with running water.
4. Always wash the housing from the top to the bottom and rinse with running water every time.
5. **CLEANING AND WASHING TOO FREQUENTLY MAY CAUSE MORE HARM THAN GOOD.**

## CLEANING FUNGUS, MOSS AND MOULD

Some natural environments favour the growth of plant flora, especially shadowed areas of a damp climate, densely forested or marshy. In such environments, the occurrence of moss, fungus or mould is unavoidable, even on material not susceptible to the development of plants.

In the case of the appearance of the above mentioned impurities, a cleaning detergent should be used according to the recipe below. Make the mix in weight proportions, using ingredients allowed for market turnover from suppliers of chemical products. Before mixing the first three ingredients, read the precautions to take recommended by manufacturers of these ingredients.

1. Good quality household detergent	— 0.5 portions
2. Trisodium phosphate	— 3.0 portions
3. 5% solution of sodium hypochlorite	— 25.0 portions
4. Water to dilute	— 71.5 portions
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	100.0 portions

Before using the solution, it is recommended to wash the infected area in accordance with the recommendations for washing, and then place the solution on the surface with a low-pressure spray or with a brush. Leave the treated surface under the influence of the detergent for a period of 1 to 22 hours; after this period wash the cleaned surface with cold running water before the passage of 24 hours.

## CORRECTION PAINTING

In the case of small scratches appearing on the enamel surface which depth does not reach the steel sheet (depth of the scratch reaches of the enamel undercoat), there is no need to perform any correction painting, unless aesthetic requirements are deciding. In the case of scratches reaching the steel sheet, paint these areas using paint of the appropriate colour and composition. In the case of polyester coats (PES enamel), generally available polyester enamels used in the car industry are used as correction paints, or paints for use on galvanised coats. The paints used must be intended for drying outside, they cannot be "furnace paints". Cellulose paints are not recommended. In the case of Pvf2 coats, Celestia or HPS 200, it is recommended to contact the chosen manufacturer of correction paints in order to deliver the appropriate paint.

It is important that the correction paint is not used outside the edge of the treated scratch. A soft brush with a "sharp" end should be used to apply the paint. Using spray paints or applied through a pressure spray is not recommended. After applying the correction paint, there may be a visible difference in the shade or quality of the coat, therefore, due to aesthetic reasons, correction painting of larger areas should be avoided.

## SURFACE PAINTING

In case it is necessary to repaint a fragment of a panel or housing, this is surface painting. In this situation, such painting should be done by an authorised and specialist company using appropriate enamels.

## SECURING CUTTING EDGES

The occurrence of small areas of corrosion of cutting edges of sheets is normal and is not a direct threat to the durability of the covering, if the corrosion occurs only on the edge of the sheet. Steel sheets used as covers, aside from the enamel coat, are secured with a galvanised coat (275 g Zn/m) creating an electrochemical surface protection against corrosion. In the case of sheets of thicknesses no greater than 1mm, the cutting edge is subject to the rules of electrochemistry corroding only until a certain scope (in the thickness of the cutting edge), and then the process stops – therefore, the natural corrosion of the edge. In case the area of corrosion goes outside the edge, including fragments of the area near the edge, there is a danger of the corrosion spreading onto the surface of the sheet. This is caused in most cases due to the use of inappropriate cutting devices or secondary mechanical damages of the enamel coat near the edges. In such cases, if an increased corroded area is observed, it is recommended to secure the edges of the sheets according to the guidelines below:

1. Cut and remove the remaining metal filings and enamel coat within the corrode area to the untouched area.
2. Remove the rust and heart of the corrosion in a mechanical way – through delicate sanding, brushing or treating with abrasive materials to the moment of obtaining a metallic shine of the sheet's surface, leaving the metal surface matt. Thoroughly wash and de-oil the surface according to the guidelines of the manufacturer of securing coats.
3. Apply the first coat of the undercoat onto a cleaned and prepared surface, according to the guidelines of the manufacturer.
4. After the first coat of the undercoat dries, apply the second coat of undercoat enamel in such a way that it overlaps the untouched areas of original enamel.
5. After the basis coats dry, paint the treated area with surface enamel according to the guidelines of the manufacturer.

In performing the above protection, one can use generally available protective detergents (basis coverings and surface enamels) intended for galvanised and covered sheets (enamels and polyester), or turn to GÓR-STAL SP. Z O.O. in order to obtain information on specialist suppliers of these materials (Pvf2, Celestia or HPS 200).