

6. CLEANING, CARE & MAINTENANCE

6.1 General

In order to maintain a flawless finish, continuous operating convenience as well as lasting impermeability of the components, it is necessary to clean, service and maintain them regularly.

Besides weather conditions, the components are also affected by smoke, industrial emissions, dust, etc. The soiling or, as the case may be, the deposits in conjunction with rain and condensation can have an adverse effect on the surfaces and thus their appearance.

6.2 Wood surfaces

Cleaning and care

The finished wood surfaces of Gaulhofer windows are coated with an application of an environmentally friendly, water-soluble thick layer of acrylic varnish applied by spray gun. Please treat the components with great care to prevent damaging the finished wood surfaces.

Wood is a living material that requires an intact finish.

Clean frames and sashes regularly. Soap and water or a mild hand wash detergent are most suitable. Wipe clean with clear water. Use soft cleaning cloths and sponges. Abrasive cleaner, household cleaners and glass cleaners with ingredients such as alcohol or ammoniac are unsuitable.

The Gaulhofer Window Care Set is most suitable for the care of the finish. It contains a special care liquid for the finish of your Gaulhofer windows.

Maintenance and repair of damages

The finish may be damaged due to outside influences (during construction, due to hail, etc.) In any case, more extensive damage should be repaired by a specialist – please contact your Gaulhofer dealer and/or your service partner.

Small defects such as scratches, hairline cracks or damage in its early stages can be repaired using a fine paintbrush and water-soluble acrylic varnish.

To maintain the finish, the Gaulhofer Window Care Set for wood also contains a paintbrush, fine sand paper and a can of varnish matching the color of your windows for repair work.

It is important to repair damaged areas immediately. Otherwise water may penetrate, freeze in winter and thus cause the finish to peel. The damage is repairable later, but may be more time-consuming and expensive.



Fig. 85

There are no general recommended maintenance intervals for your Gaulhofer wood windows. The reason: each wood window is exposed to different conditions.

Maintenance depends mostly on the installation, the location of the building and the weather conditions (sun, rain, snow, hail, wind).

Special stress results if the building structure has no eaves, is located in alpine surroundings, on a busy street or close to polluting industrial plants.

Therefore, the golden rule for a long window-life is: Check your window every time you clean it, at least twice a year, for damage, weathering (cracks, dents, blisters), as well as after every hailstorm. Repair any damage or wear of the finish immediately.

Sand the damaged areas with sand paper of 180 grit and then apply a coat of varnish or a covering finish. Should you reach bare wood when sanding, apply a base layer of water-soluble acrylic varnish. After the varnish has dried and/or the window has been re-primed, sand the damaged spot one more time, this time with sanding paper, grit of 180 to 220. The varnish should be applied up to three times onto the damaged area. Drying time varies from 2-4 hours depending on temperature. Please do not apply at temperatures below 10° C or in extreme heat.

Recoating of wood windows

Should the maintenance described above not be carried out in time, it may be necessary to recoat the entire window after a few years.

If this is the case, retain the services of a professional painter in your area!

In order to provide you with relevant information and to assist you when requesting an estimate from the painter, we have listed the sequence of work required:

- Strip or sand off all old finishes.
- Lightly sand the wood surface lengthwise with sandpaper, 180 grit, using a sanding block. (Do not use steel wool!).
- Remove dust
- Apply colorless Gaulhofer window impregnation
- Apply colored Gaulhofer window primer
- Sand between coats and remove dust
- Determination of quantity required for impregnation or, as the case may be, for primer:
 - 1 liter (1 quart) is sufficient for an area of approximately 8-10 m² (80'-100' sq) which equals a window circumference of approximately 20 lineal meters (65')
- Apply primer evenly using a polyester paintbrush. Caution: Do not paint over hardware or seals
- Paint only at temperatures between 10° and 20° C (average room temp.). Drying time is up to 12 hours depending on the temperature

See "Non-finished wood surfaces" below for additional steps

Non-finished wood surfaces

Gaulhofer wood surfaces are impregnated and primed in the factory. The colorless, environmentally friendly impregnation with penetrating action applied in a factory spray finish protects the window against absorption of moisture and fungal infestations that cause discoloration (blue stain) and destroy the wood (decay).

The first step before assembly is the application of the primer. It already contains a light pigmentation, which will provide your window with its initial, additional UV-protection. After primer, a finishing coat is required. It is best to let a professional painter do the work!

How to prime and varnish

Sand lengthwise along the wood surface using sand paper. Then remove the dust. The sanding paper should have a grit of 220 and be mounted on a cork or rubber sanding block. Please do not use steel wool.

Apply priming color that corresponds to the tint of the varnish of the finishing coat.

Apply the Gaulhofer varnish evenly (varnish or opaque varnish) on all sides using a polyester paintbrush.

Three coats should provide you with the required total layer thickness of 60 μm for varnish and with 80 μm for opaque finishes.

Please do not paint the glass, the silicone glass seal, the joint seals, the weather stripping or the hardware. We recommend you use masking tape. Remove the weather stripping and remount it carefully after painting has been completed. Remove the masking tape from the surface immediately upon completion.

Calculation of varnish quantity required (varnish): 1 liter (1 quart) is sufficient for an area of approximately 4 m² (13' sq) which equals approximately 7 lineal meters (22') window circumference for the required three coats.

The original Gaulhofer primer color and varnish for the finishing coat can be purchased from your Gaulhofer specialist. All our coating materials are water-soluble and do not contain any environmentally harmful solvents.

We recommend that you choose a medium color tone for your transparent varnish from the extensive Gaulhofer palette, such as Oak or Teak for spruce windows and Larch medium for larch windows. The reason for our recommendation: Colorless and light finishes do not provide sufficient UV protection for outside use due to their low pigment content. The finish deteriorates more quickly; therefore you have to repaint more often. On the other hand, with the very dark finishes, you risk the wood heating up too much, which causes cracks to form where moisture can enter.

Alternate surface "Gaulhofer Larch Oil"

Wood-aluminum and wood units are impregnated and primed at the factory, and have a water-soluble oil (natural pine oil) applied in the factory as finish.

Cleaning, care and maintenance of wood-aluminum components (Interior)

Clean the inside of windows and doors with warm water occasionally. Apply Gaulhofer Wood Care Liquid once a year on interior wood surfaces.

In order to prolong the durability of stained wood surfaces, you should regularly inspect the finish of the windows during cleaning or care.

If it is necessary to repaint due to damage on the interior, it depends on the degree of damage whether it is necessary to

- lightly sand and repaint with Gaulhofer Larch Oil or
- sand off the factory finish down to the bare wood and then apply a double coat of Gaulhofer Larch Oil to rebuild the surface

(When applying Gaulhofer Larch Oil with a paintbrush, it might help to dilute the original product with 5-10% water)

Cleaning, care and maintenance of wood components (exterior)

The periodic coating of wood windows and doors with the Larch Oil is not always advisable or necessary. Colorless and almost colorless finishes offer less protection from ultra-violet rays. Furthermore, Gaulhofer Larch Oil is fungicide-free for environmental reasons (no protective film). This reduces durability and requires more care compared to varnished windows.

To help prevent graying and infestation of wood-discoloring fungi on the wood surface, stained window units exposed to outside weather conditions require regular care. For outside-care we recommend Gaulhofer Wood Care Liquid and/or our Gaulhofer Larch oil (colorless), according to the condition of the surface. Repeated care of the window units is recommended 1-2 x annually depending on weathering and exposure. Wood Care Liquid, as well as Larch Oil, are applied using an absorbent cloth and wiped outwards towards the frame. Repeat the process after the application has dried (allow approximately 1 hour for Wood Care Liquid, overnight for Larch Oil).

In case the window units were not cared for properly and individual styles or rails exhibit graying or have been attacked by wood-discoloring fungi, the respective style and rail must be sanded down to the bare wood and then painted at least twice with Gaulhofer Larch Oil. Excess material must be wiped off with a cloth after approximately 15 minutes.

Interim drying time before the second coat is applied – overnight.

To care for intact surfaces of the window units, just apply Gaulhofer Larch Oil with a cloth.



Caution:

Cloths soaked with larch oil may self-ignite. Store soaked cloths in a closed metal container or under water.

Alternate surface “Gaulhofer Hard Stain”

Hard stain is a water-based, decorative coating with film-building properties on coniferous wood.

This stain is a weather-resistant, water repelling and diffusible product for interior use.

The hard stain finish maintains the natural look of the wood including its structure, color, etc. Unlike varnish, it does not result in a glossy look, which is foreign to wood, and you can still feel the structure of the wood when you touch the surface.

Hard stain, especially in combination with larch wood, is a true alternative to achieve the natural, aesthetic, unaltered appearance of the wood with a natural feel.

To care for and/or to recondition, Gaulhofer Care Liquid can be applied easily with a cloth.

6.3 Vinyl surfaces

Cleaning and care

Clean frames and sashes regularly. Soap and water or a mild hand wash detergent are most suitable. Wipe clean with clear water. Use soft cleaning cloths and sponges. Abrasive cleaner, household cleaners and glass cleaners with aggressive ingredients such as alcohol or ammoniac are unsuitable.

The Gaulhofer Care Set for Vinyl Windows is ideally suited to care for vinyl surfaces. It contains a special deep cleansing agent, as well as a preservative to care for white or foliated surfaces.

Maintenance and repair of damage

In case the white vinyl surface has been manually damaged, please contact your Gaulhofer specialist. In this case, the damage must be repaired using aggressive chemical materials. Only a specialist (Gaulhofer Service) is able to carry out these repairs.

A repair tool is used to correct minor manual damage of the foil; which can also be purchased from Gaulhofer.



Fig. 86

6.4 Aluminum surfaces

6.4.1 Powder-coated aluminum

Aluminum surfaces may grow dull with pollution and lose their shine and colour.

Cleaning and care

Clean frames and sashes at least once a year, in case of greater environmental stress at least several times a year with cold water and a bit of soap or a mild dish detergent.

Use soft cleaning cloths and sponges. Abrasive cleaners, household cleaners and glass cleaners with aggressive ingredients such as alcohol or ammoniac are unsuitable.

The surface must be cool for cleaning (maximum 25° or just above room temperature).

To remove greasy, sooty or sticky substances please use methylated spirit or non-abrasive cleaning substances that contain alcohol (please use in moderation only).

Immediately after every cleaning you must rinse again with clean, cold water.

Polish the surface with a high-quality automobile polish according to the manufacturer's instructions.

Maintenance and damage repair

An automobile polish that contains color pigments can be used to hide fine scratches on the powdered aluminum finish. This product can be purchased at automobile supply stores in a variety of basic colors (red, white, blue, etc.).

Deep scratches and manual damage can be patched up as follows:

- Lightly sand the damaged area.
- Fill the damaged area with polyester cement and sand until smooth.
- Remove dust.
- Tape off the damaged part of the window at the miter joints, protect the remaining parts of the window.
- Apply multiple layers of the powder-coating spray with the proper gloss-degree available from Gaulhofer.
- Polish the remaining parts of the window according to care instructions (9.2.1), in order to even out the contrast with the newly coated parts.

6.4.2 Anodized aluminum

Use exclusively pH-neutral (pH between 5 and 8) cleansing agents (e.g.: dish detergent.) Even very dirty anodized surfaces may only be cleaned with materials that are non-scratching and non-abrasive such as cleansing agents available in specialty supply stores.

6.5 Glass surfaces

We recommend you use conventional, ammonium-chloride-free glass cleaner. Prevent the cleansing agent from getting in contact with the finished surface of wood windows. Use soft cleaning cloths (not steel wool or scouring pads) on the glass.

Heavy build-up of dirt resulting from tar or paint spatter can be carefully dissolved or removed with spirit, acetone or petroleum.

Afterwards the glass surface must be cleaned with water.

Do not use metal objects such as razor blades.

Alkaline solutions, acids or cleaning agents containing fluorides should not be used for cleaning.

The glass surface must be protected from

- mortar spatter, untreated concrete surfaces, asbestos sheeting
- sweat, flying sparks (from work with a cutoff wheel)
- acidic facade brick cleaning agents

6.6 Hardware

All movable hardware must be checked at least once a year for wear and tear and firm fit and greased or oiled afterwards.

Grease the locking bolt and locking components with commercial, acid free grease (available from home improvement retailers and automotive supply stores) and apply a few drops of oil to the lock bar beneath all guiding slots. Afterwards open and close the unit several times.

Locking components

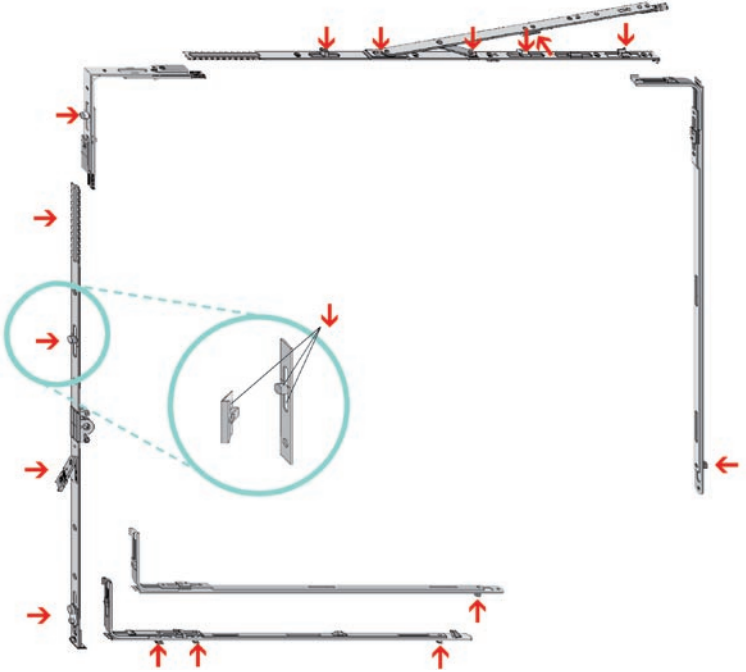


Fig. 87

6.6.1 Shutter hardware

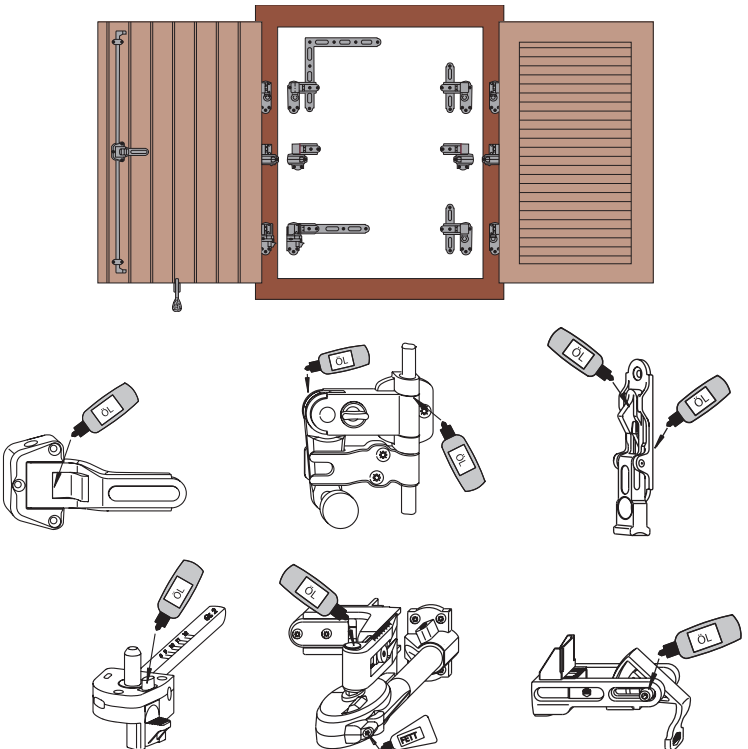


Fig. 88

6.7 Seals/ Weather stripping

Seals and/or weather stripping may only be cleaned using a mild general cleansing agent.

We recommend the weather strip protection maintenance tool that is part of the Vinyl Cleaning Kit for the care and maintenance of weather stripping. This tool maintains the pliability of weather stripping and prevents premature brittleness.

7. INSTALLATION

The quality of the installation or rather the wall connection is key for the proper functioning and ease of operation of the units.

When installing, expansion, attachment and structural calculations have to be considered and the wall connection to the building has to be completed according to the proper technical requirements. (See your local building code or standard).

7.1 Fastening

There are no loads to be bearing on the window. Any load must be picked up within the building structure and may not rest on the window or door units. Choosing the correct type and arrangement of shoring as well as the proper fastening material for the part that is being installed ensures this.

The choice of fastening material must be made according to the loads that come to bear, the adjacent elements and the movement that occurs in the wall connection.

Set-up of support and distance blocks

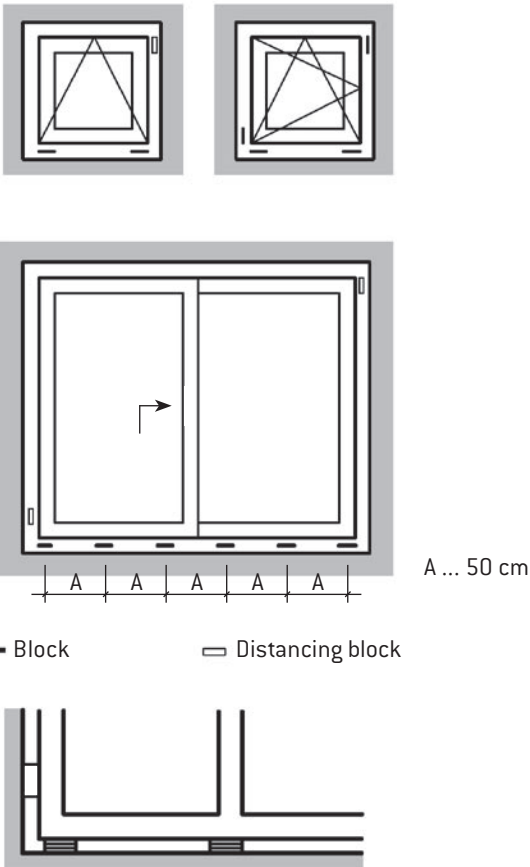


Fig. 89