

SWISS KRONO HPL IMO

1. Description of the product

SWISS KRONO HPL IMO high-pressure laminate type HGF (H - Horizontal application; G- General purpose; F - Flame retardant), or VGF (V – Vertical application, G - General purpose; F -Flame retardant) with low flame spread characteristics, for internal application only.

SWISS KRONO applies product labelling with the symbol of a steering wheel, along with the number of the notified body and the year in which the mark was applied. The labelling is indicative of the product's compliance with marine equipment regulations and authorizes its usage on UE seagoing ships.

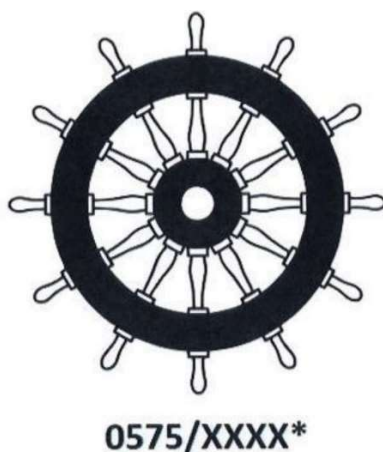


Figure 1. Product labeling with the steering wheel symbol.

Thickness range of SWISS KRONO HPL IMO laminates: 0.5 - 0.8 mm

Substrate types:

- non-flammable, non-metallic over 9.4 mm thickness,
- metallic over 1.5 mm thickness.

Range of colors: according to the manufacturer's color chart - wide range of decors and textures.

2. Use

Areas of application for SWISS KRONO HPL IMO laminates include furniture finishing and interior fittings as a surface material with low flame spread that does not produce excessive amounts of smoke or toxic products in a fire.

SWISS KRONO HPL IMO is a decorative material for ship interiors, especially for bulkhead lining, walls and ceilings, with the exception of pipe or cable sheathing. **It is not intended for use as a floor covering.**

3. Transport of SWISS KRONO HPL IMO laminates

SWISS KRONO HPL IMO laminates should be transported and stored in a safe way in order to avoid damaging them. Laminates should be placed on a sufficiently large and rigid pallet to ensure protection of the corners. During transport, it is recommended to use the original manufacturer's packaging and protection to minimize the risk of damage. Pallets in transport should be secured with belts to prevent displacement during transit.

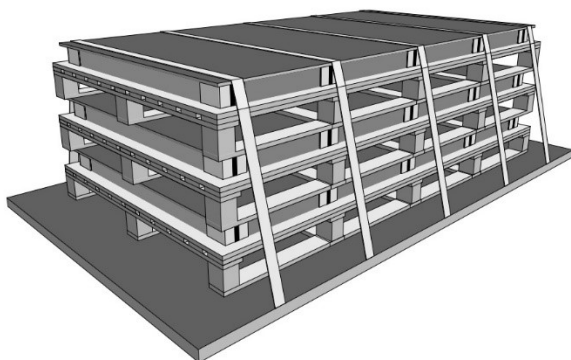


Figure 2. Securing SWISS KRONO HPL IMO laminates in transit (sheets).

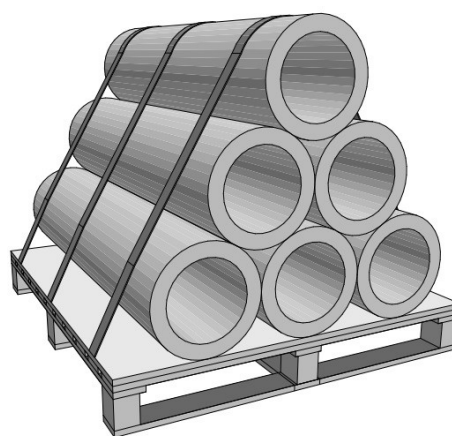


Figure 3. Securing SWISS KRONO HPL IMO laminates in transit (rolls).

4. Storage conditions of HPL laminates

SWISS KRONO HPL IMO laminates should be stored in closed and covered areas for a maximum of 6 months at temperatures in the range 15-25°C and with a relative humidity in the range of 45-65%. SWISS KRONO HPL IMO laminate sheets should be protected from moisture, direct sunlight and UV radiation.

SWISS KRONO HPL IMO laminate sheets should be stored flat, laid on a level surface. The entire stack should be covered with a cover board and protected with foil against moisture and dirt. Each time a SWISS KRONO HPL IMO laminate sheet is removed, the remaining stack should be covered with a cover board and protected with a foil.

It is important that there is no dirt between the sheets in a stack that could cause scratches on laminate's surface. Single laminate's sheet can be rolled up.

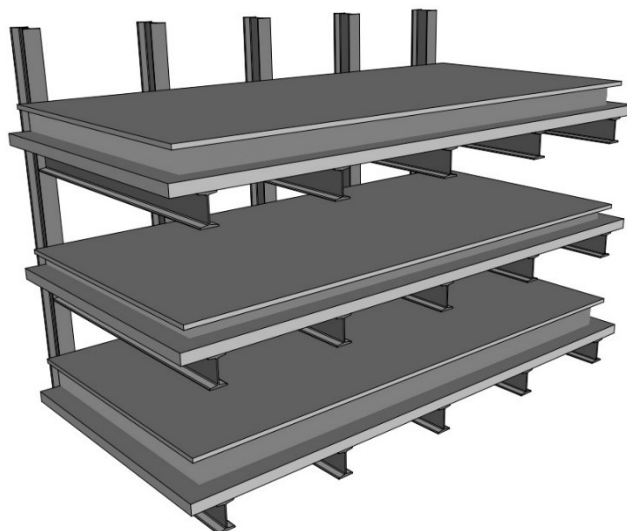


Figure 4. SWISS KRONO HPL IMO storage.

5. SWISS KRONO HPL IMO laminates seasoning

Before the installation, HPL IMO laminates should be seasoned for at least 10 days according to the following environmental conditions:

- temperature in the range 15-25°C
- air humidity in the range 45-65%.

SWISS KRONO HPL IMO laminates should be installed and used away from strong heat sources. Do not store and install in a dry and hot environment

6. Installation of SWISS KRONO HPL IMO on substrates

SWISS KRONO HPL IMO laminate requires using substrate. According to obtained certificates it should be applied to:

- non-flammable and non-metallic substrate with a thickness of more than 9,4 mm;
- metallic substrate with minimal thickness of 1,5 mm.

Regardless of the type, a substrate must be prepared in advance for gluing. The surface should be flat, smooth, vacuumed and degreased. Sheets of metal and slabs must be flat, without folds, bumps or other defects. This has a significant impact on the correct application guaranteeing a reliable bonding of the components.

SWISS KRONO HPL IMO laminate should be glued to the substrate using RAKOLL GXL-3 glue produced by H.B Fuller Deutschland GmbH company (this glue was used in fire tests). There is an option to use other glue provided that it was tested for flame spread in accordance with IMO 2010 FTP Code 5, has been approved by MED and holds the labelling and compliance.

Due to the tension that occurs after applying the laminate to the substrate, it is necessary to cover both sides to balance tensions on both sides of the substrate. This is particularly important when the finished composite element is meant to be self-supporting and not supported by a rigid structure (e.g. a wall). When covering the substrate with the same SWISS KRONO HPL IMO, use a sheet of laminate cut in the same direction (as shown in figure no. 5), so that the tensions are compensated. Gluing the laminate HPL IMO in opposite directions may result in the occurrence of tensions and distortion of the composite element.

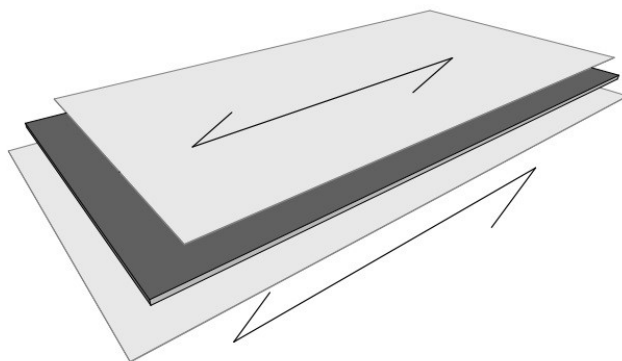


Figure 5. SWISS KRONO HPL IMO gluing on both sides of the substrate.

Machines and tools for processing composite elements must be suitable for simultaneously processing SWISS KRONO HPL IMO laminate and the type of substrate used.

7. Cleanliness and maintenance of SWISS KRONO HPL laminates

SWISS KRONO HPL IMO should be cleaned with a damp, soft cloth or sponge, with commercially available cleaning agents, such as a solution of dishwashing liquid. After washing with ordinary cleaning products, the laminate should be washed with clean water and wiped dry to obtain a smooth surface without streaks.

Before using any cleaner, read the attached description to make sure it is suitable for that type of surface. Do not use cleaners that contain aggressive or corrosive substances or agents that contain abrasive or glossy additives, as they may permanently damage the surface of the laminate. Larger dirt, such as from a marker, nicotine, nail polish or shoe polish, should be removed with spirit or an organic solvent (such as acetone), and then the laminate surface should be washed with clean water and wiped dry.

SWISS KRONO HPL IMO is resistant to most substances that can cause stains, such as milk, tea, coffee, wine, syrups. Despite such high performance of HPL, it is recommended to remove residues of the mentioned products from the surface.

Special attention should be paid to such products as: blueberry juice, red beet juice or tomato paste.

8. Final remarks

Marine Equipment Directive (MED) is an EU directive that sets out requirements for products used on EU ships, with the aim of improving maritime safety and preventing marine pollution. SWISS KRONO HPL IMO laminates have the relevant certificates, for use on EU marine ships (MED-B, MED-D, Declaration of Conformity).

All certificates for the SWISS KRONO HPL IMO product can be downloaded from the website:

<https://www.swisskrono.com/pl-en/products/interiors/swiss-krono-hpl-imo#/>

General information on HPL laminates can be found in the "HPL Compendium", published by the ICDLI (International Commission of the Decorative Laminates Industry). This document, in a free version, can be ordered from www.icdli.com (EN, DE and IT versions).