SWISS KRONO HPL

1. Product description

SWISS KRONO HPL (High Pressure Laminate) - is a material for refining the surface of panels, giving them extraordinary properties. HPL consists of layers of papers impregnated with thermosetting resins, bonded together at high temperature and high pressure. The decorative layer is an extremely wide range of woodgrain, fancy, monochrome and stone designs. SWISS KRONO HPL laminates with their properties and performance parameters meet the requirements of EN 438 - 3 standard. SWISS KRONO HPL is a natural product derived from renewable raw materials, consisting of almost 70% wood converted into paper. Diverse in formats and structures, durable and flexible will provide comfort for any design concept. This extremely versatile laminate will work well in apartments, public interiors, car interiors, as well as rolling and shipbuilding stock.

2. Use

SWISS KRONO HPL is produced in accordance with the classification and typical use system contained in EN 438-3 standard, table 3:

HGS - for horizontal applications, general purpose, standard use

HGP - for horizontal applications, general purpose, postforming

VGS - for vertical applications, general purpose, standard use

VGP - for vertical applications, general purpose, postforming

The individual letters stand for:
H - **H**orizontal use
G - **G**eneral purpose
S - **S**tandard
P - **P**ostforming
V - **V**ertical use

Depending on the type, SWISS KRONO HPL laminate is used in the following areas (examples of typical use):
- door manufacturing,
- kitchen worktops manufacturing,
- windowsills manufacturing,
- furniture manufacturing,
- in stores,
- in kitchens,
- in restaurants,
- in schools,
- in hotels,

- in hospitals,
- in doctors' offices,
- in pharmacies,
- in sports centers,
- in gymnasiums,
- in locker rooms,
- in elevators,
- in laboratories.

3. Technical data

3.a. Construction

The top side has a decorative layer, inspired by wood, stone, single color or with fancy design. The bottom side is sanded and prepared for gluing to the carrier board. HPL consists of several layers of paper, prepared differently for production:

1. OVERLAY PROTECTIVE LAYER - top, invisible layer is a special paper impregnated with melamine resin, which makes HPL highly resistant to abrasion and scratching.

2. DECORATIVE LAYER - printed paper, with a variety of patterns, impregnated with melamine resin.

3. CORE - paper impregnated with phenol resin; the core may consist of multiple layers of such paper

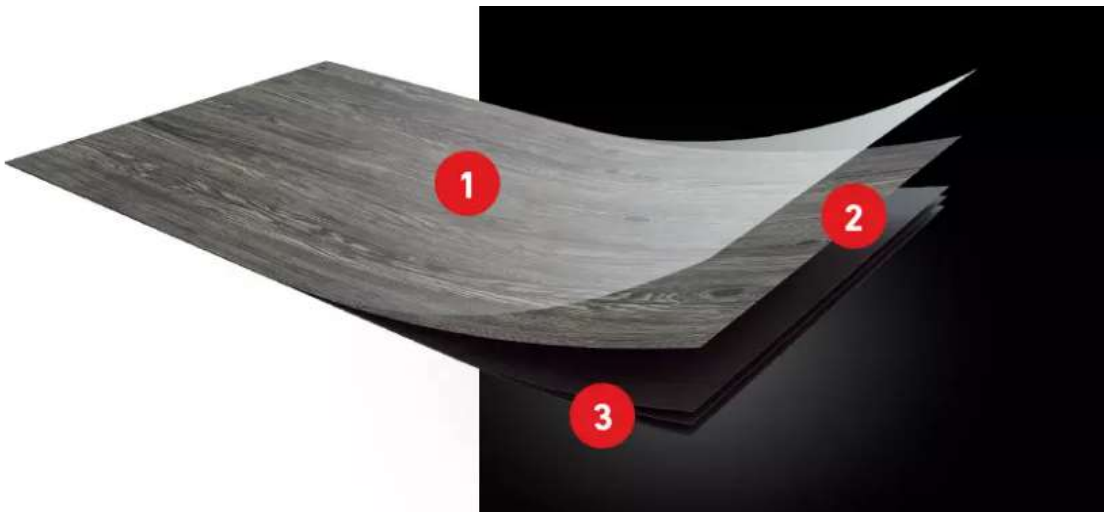

Figure 1. Construction of SWISS KRONO HPL

3.b. Parameters

SWISS KRONO HPL laminates meet the requirements defined in EN 438-3 standard.

Table 1. Technical and performance properties of laminates in HGS and HGP types. General Requirements.

Property	Unit of measurement	Requirement	Test method
Thickness tolerance	mm	0.2 – 0.4 mm ± 0.05	EN 438-2
Thickness tolerance	mm	0.5 - 1.2 mm ± 0.10	EN 438-2
Length tolerance	mm	+10 / -0	EN 438-2
Width tolerance	mm	+10 / -0	EN 438-2
Resistance to scratching	Rating (min)	3	EN 438-2
Resistance to surface wear	Revolutions (min) initial point	IP ≥ 150	EN 438-2
Resistance to impact by small diameter ball	N	≥ 20	EN 438-2
Flatness tolerance	mm/m	≤ 60	EN 438-2
Edge straightness tolerance	mm/m	≤ 1.5	EN 438-2
Squareness tolerance	mm/m	≤ 1.5	EN 438-2
Density	g/cm^3	≥ 1.35	EN 1183-1
Resistance to staining	Rating (min)	5 for group 1 & 2 4 for group 3	EN 438-2
Light fastness (xenon arc)	Gray scale rating	4 to 5	EN 438-2
Resistance to dry heat (160°C)	Rating (min)	gloss finish 3 other finishes 4	EN 438-2
Resistance to water vapour	Rating (min)	gloss finish 3 other finishes 4	EN 438-2
Formaldehyde emissions		Class E1	EN 717 -1

Table 2. Technical and performance properties of laminates in VGS and VGP types. General Requirements.

Property	Unit of measurement	Requirement	Test method
Thickness tolerance	mm	0.2 – 0.4 mm ± 0.05	EN 438-2
Thickness tolerance	mm	0.5 - 1.2 mm ± 0.10	EN 438-2
Length tolerance	mm	+10 / -0	EN 438-2
Width tolerance	mm	+10 / -0	EN 438-2
Resistance to scratching	Rating (min)	2	EN 438-2
Resistance to surface wear	Revolutions (min) initial point	IP ≥ 50	EN 438-2
Resistance to impact by small diameter ball	N	≥ 15	EN 438-2
Flatness tolerance	mm/m	≤ 60	EN 438-2
Edge straightness tolerance	mm/m	≤ 1.5	EN 438-2
Squareness tolerance	mm/m	≤ 1.5	EN 438-2
Density	g/cm^3	≥ 1.35	EN 1183-1
Resistance to staining	Rating (min)	5 for group 1 & 2 4 for group 3	EN 438-2
Light fastness (xenon arc)	Gray scale rating	4 to 5	EN 438-2
Resistance to water vapour	Rating (min)	gloss finish 3 other finishes 4	EN 438-2
Formaldehyde emissions		Class E1	EN 717 -1

3.c. Maintenance

SWISS KRONO HPL 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 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.

4. Packaging, storage and transportation

SWISS KRONO HPL can be produced in sheets or rolls.

HPL format available in stock (standard):

HPL in sheets:
• 4100x1320x0.5 mm

HPL formats available on request

HPL in sheets:
• widths: 630 - 1320 mm and 2080 mm
• lengths: 500 – 5600 mm
• thickness: 0.20 – 1.2 mm

SWISS KRONO HPL laminates should always be stored in a closed, dry warehouse, at a temperature of not less than 18°C and not more than 25°C, humidity of 50-60%, for a maximum period of 6 months.

4.a. Storage of SWISS KRONO HPL in sheets

- SWISS KRONO **HPL** should be laid out and stored on a flat, rigid and stable surface.
- The surface of the rack should be larger than the laminate sheets.
- The stack should be covered over the entire surface with a cover plate.
- In the stack, between the sheets, there should be no dirt that can scratch the surface of the laminates.
- Individual sheets can be rolled up, decorative side inward.
- HPL should be stored indoors and covered, in a place protected from moisture.

- Care should be taken when handling and transporting laminate sheets to avoid damage.
- There should be an information label on each stack.

HPL in rolls:
• Thickness range: 0.20 to 0.60 mm
• Maximum roll diameter: 400 mm
• Core diameter: 150 mm

4.b. SWISS KRONO HPL storage in rolls

- **SWISS KRONO HPL** should be laid out and stored on a flat, rigid and stable surface.
- The rolls should be placed on a pallet, with a maximum of 6 pieces in pyramid form (narrow format), or flat with 4 pieces (wide format).
- The whole should be fastened together with banding tape to prevent the material from moving in transit.
- In the stack, between the rolls, there should be no dirt that can scratch the surface of the laminates.
- HPL should be stored indoors and covered, in a place protected from moisture.
- Care should be taken when handling and transporting laminates to avoid damage.
- There should be an information label on each roll.

5. Certificates and approvals

- Hygienic approval - confirms class E1
- Certificate confirming antibacterial properties
- Fire classification.