



## PROCESSING GUIDELINES FOR VIKURES S AND MASSIEF REKLAMEPLAAT S

### COMPACT LAMINATES

This document has been prepared with the purpose of providing general information and guidelines for processing operations of compact laminates.

#### 1. INTRODUCTION

Compact laminate is made of specially selected decorative papers and absorbent kraft paper impregnated with melamine and phenol resins. These papers are then pressed and hardened under heat and high pressure. Strong bonding makes laminates resistant to boiling water, stains and provides increased dimensional stability. Surface protection through special treatment makes laminates scratch resistant. Vink has wide range of over 1500 designs, 150+ finishes and different sizes. These laminates create an aesthetic look and offer its customers a dynamic range to choose from. By using the recommendations in this Installation Guide as a starting point, users will find useful information to guide them in obtaining the most appropriate installation. However, these recommendations are not intended to assume or replace the responsibility of the user to establish engineering design, practices, and procedures best suited to individual job conditions. This document will provide basic information on the fabrication and installation of decorative laminates and a better understanding of the product and its uses.

#### **In General:**

Compact laminates are used as counter tops, table tops, interior partitions, wall cladding, façade claddings and bathroom cubicles to name a few. Dimensional change is a characteristic found in varying degrees in all cellulose type materials like wood. Also, like wood, high-pressure decorative laminate has grain direction. When humidity changes, the width of the laminate undergoes greater dimensional change than the length by a ratio of approximately 1.5 to 1.

As humidity decreases, the laminate contracts and when the humidity increases, the laminate expands. The physical characteristics of the material should be considered in planning its fabrication and installation.

## 2. TRANSPORT, HANDLING & STORAGE

### 2.1 TRANSPORT & HANDLING

Compact laminate panels are generally heavy and care should be taken when handling to protect the decorative surface of the product and the workers from injury.

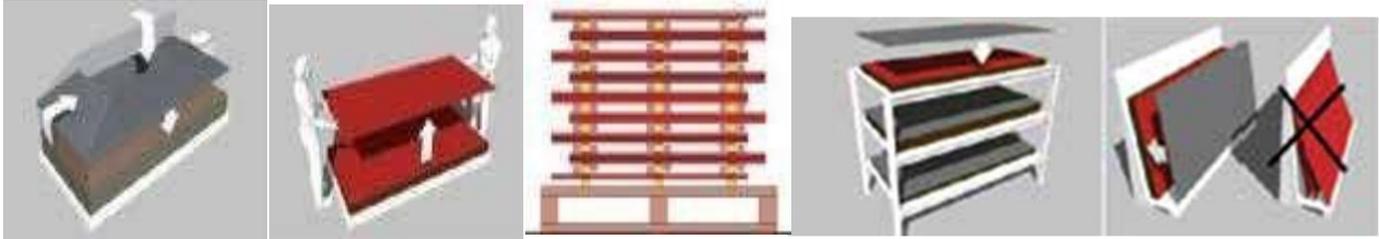
Handling and moving of Vink compact panels should only be undertaken by trained personnel using the correct equipment.

- Panels should be handled with care to avoid damage to the edges and surfaces of the high quality material.
- Large panels should be transported by pallet/fork-truck or rolling table using pallets of appropriate size and strength.
- Vacuum lifts are also recommended for handling large, thick panels.
- Laminate panels must be secured against slippage during transport.
- In spite of the excellent surface hardness and the installation of transport protection film, the
- Higher stack weight of these laminate panels can be a possible cause of damage. Therefore, any form of dirt or dust between the panels must definitely be avoided.
- When loading or unloading, the panels must be lifted and not dragged.
- Care should be taken to avoid abrasion between decorative surfaces.
- Do not push or pull them over the edge.

## 2.2 STORAGE

- Store compact laminate panels in a dry, clean, frost-free area as incorrect storage can lead to permanent deformation of the panels.
- Keep panels in the original packaging wherever possible.
- Place pallets and panels on a level surface which provides full support.
- Compact laminate should not be exposed to air flow during storage, as the wind effect of an uncounted panel from different angles will trigger the warping problem. For this reason,
  1. It is recommended to store compact laminate away from areas with high air flow such as doors and windows.
  2. It is recommended that the remaining goods on the pallet be kept closed at all times with their plastic protection.
  3. It is recommended to use the bottom and top panels, which will be exposed to air flow the most during transportation and storage, as depth partition panels instead of productions such as front doors, as they are more open to the warping problem.
- All panels must be stacked horizontally on flat, stable supports and supporting panels and the panels must lie completely flat to prevent any deformation.
- Panels are to be stored in closed rooms under normal climatic conditions preferable temperature 20 to 40°C and humidity between 40% and 60%.
- Climate differences on the two surfaces of a panel are to be avoided. Use intermediate layers of wood or plastic to ensure that the climatic effect is uniform on all sides of the panels.
- Before opening the packaging unit, all materials should be acclimated for a minimum of 48 hours before fabrication/installation.
- Do not place any moisture-sensitive paper layers between the panels. Place interleaving padding (slip-sheet or protective cardboard strips) between panels when stacking.
- Material should not be stored near exterior doors that may result in exposure to rain or temperature/humidity variations.
- Prevent a film of moisture from forming between the panels.

- Remove any type of sticker / marking / coding immediately after installation of panels.



### 3. PREPARATION OF FABRICATION

#### 3.1 PRE-CONDITIONING

Pre-conditioning is the very important to achieve proper stability of panels to avoid expansion and contraction when exposed to changes in climatic conditions. Pre-conditioning ensures that the differential effects of changes in climatic conditions like temperature and humidity on the panels are minimized. Compact panels and related materials should be conditioned before processing so that all materials reach equilibrium.

The uniformity in climatic conditions will ensure uniform behavior of panels and related materials during fabrication. This will ensure that they achieve near identical moisture contents prior to so that bonding, and any subsequent dimensional movements will therefore be similar in both magnitude and direction.

#### 3.2 CLEANING

Compact laminate panels have hygienic and sealed surface - it needs no major looking after.

- For regular cleaning, use clean, warm water, clean sponge/cloth, and soap (household cleaners available in shops).
- For recurring marks and stubborn stains, use an appropriate non-scratch liquid or organic solvent (preferably IPA), rinse well with warm water and ensure all residue is wiped away with normal lint-free cloth or towel.
- For cleaning of deep textured surface, you can use smooth nylon bristled brush.
- In all cases, avoid using abrasive products or cleaners, scouring substances or bleaching agents and cleaning products with strong acid or alkali bases.

- Any spots of glue must be removed immediately with the appropriate solvent and vinyl glue with hot water.

### **3.3 SPECIAL CARE FOR PANELS WITH ADHESIVE PROTECTION FILM**

- The transport protection film is only for transportation and it must not be exposed to heat or direct sunshine.
- The protective films are designed for the temporary surface protection against dirt, scratches and tooling marks if any. They will not be able to provide protection against corrosion, humidity or chemicals.
- The laminates covered with the protective film shall be stored in a clean, dry place at room temperature (optimum 20 °C), avoiding weathering and UV exposure.
- The protective film must be removed from the surface of the laminates after the application and before putting into the use. In case of panels with the protective film on both sides, it must always be removed from both sides at the same time.
- Exterior application protective film needs to remove from both side from each panel maintenance just in time. Interior application films needs to remove after all application finished. Though compact laminate has a scratch resistance on daily usage. But can develop during fabrication process.
- Vink cannot be responsible for the misuse of the laminates covered with the protective film, nor for the consequences for non-recommended applications.

## **4 FABRICATION TOOLING**

- Being harder than conventional wood based substrates and ply board, compact panels may require use of power tools for various fabrication activities. A brief detail of various power tools used is listed below;

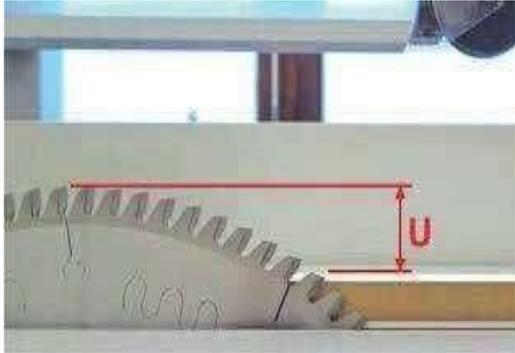
### **4.1 FIXED CIRCULAR BEAM SAW**

Compact panels exert greater pressure on cutting tools and machines as compared to HPL.

- For best performance, consult competent tool manufacturer for the type and quality of cutting tools.
- Because compact panels have a relatively hard surface, tool wear will be greater than with most

wood based products. For longer life and better performance, tungsten carbide tipped (TCT) or polycrystalline (PCD) circular saws should be used.

- Where long production runs and a high quality finish is required, PCD tooling is recommended.
- In all machine processes, avoid localized heating caused by rough saws and cutters.
- The degree of feed speed reduction depends on the thickness of the laminate and the quality of cutting finish required.
- Always cut the panels with the long edge parallel to the length of the sheet. Dimensional movement across width of the sheet is twice of that along the length, so cutting panels with the long dimension running across the width of the sheet greatly increases the risk of bowing.
- Below parameters should be considered while deciding the circular saw blades.
  1. Blade diameter : 250 - 350 mm
  2. Feed speed: 15 - 20 m/min
  3. Saw rotational speed: 3000 – 4000 rpm
  4. Saw projection: 5 – 10 mm



Source: Leitz



Saw Projection depicted as 'U'.

Generally, saws should be fine toothed and close pitched, with alternative teeth top beveled. The tooth profile recommended is FZ/TR or DZ/TR which means using Flat tooth and Trapezoidal tooth on alternate basis.

It is recommended to use scoring saw blade along with the main saw blade. Smaller in diameter, this saw blade is used ahead of the main saw cutter, rotates in opposite direction to the laminate feeding and makes cut of smaller depth on the panel and help in minimizing the chipping of décor surface on the bottom side of the laminates.

#### **4.2 PORTABLE CIRCULAR SAW**

Portable circular saws are similar to fixed circular saw cutters in principle but are useful for onsite work. The direction of rotation of these saws requires the laminates to be cut face down to avoid chipping. Use of fine toothed saw helps in avoiding subsequent finishing operations.

#### **4.3 PROFILE CUTTING & EDGE FINISHING**

- To achieve a superior finish or a profiled edge, use a spindle molder or a router.
- For such operations, PCD tooling is recommended. The cutter marks can be minimized by feeding the work at a constant controlled speed with a mechanical power feed.
- Avoid pausing during cutting and profiling, as it may lead to burn marks which can be difficult to remove.
- To obtain clean edges free of cutter marks, carry out additional sanding and scraping

operation. Buffing with steel wool and applying silicone free oil enhances edges.

- Chamfering or profiling the edges of compact grade panels reduces the risk of edge impact damage.
- Router cutters should be carbide tipped. The speeds recommended are same as those used in standard woodworking practices at 16000 to 22000 rpm. It is important to use a router having adequate power to maintain cutting speeds (based on the type and amount of material cut).

#### **4.4 DRILLING**

- Decorative laminates can be drilled using an electric drill with the more common types of drill bits (e.g. high speed steel, twist drill or point bits). Large holes can be drilled using a hole saw, fly cutter or can be plunge cut with a router and template.
- For machine drilling (drill press), a high speed straight shank twist drill is satisfactory. Longer tool life helps improve reproducibility while sharper blades like HSS improve the quality of the cuts. Controlling the feed speed of drill may lead to less damage.
- Screws and bolts should be slightly countersunk and use lower rotational speed to make counter sunk holes.
- To prevent stress cracking, the drill diameter should always be 0.05 mm (0.002 inch) larger than the specified diameter of the hole. It also helps in adjusting to small dimensional movements. Edges of the hole should be smooth and cleaned after drilling.
- Regardless of the diameter of the hole, all material being drilled should be backed up with wood at the exit to prevent breakout at the bottom of the drilled hole.
- Most suitable drills for use on compact grade laminates are similar to that used for plastic sheets. These drills have a point angle of 60°- 80° instead of the normal 120° for drilling metals.
- To avoid break-out on the reverse side, gradually reduce feed speed of the drilling head and the pressure applied when approaching the point of breakthrough. Working on a firm underlay, reduces the risk of break-out.

## 5. GENERAL GUIDELINES

### 5.1 RESISTANCE TO STAINS

Vink compact laminates are resistant to stains belonging to Group 1 and 2 but may take stains of reagents of Group 3 and 4. Even group 3 and 4 reagents should not be allowed to spill on the surface and in case of spillage, they should be immediately wiped off.

#### **Classification of Reagents:**

**Group 1:** Acetone, trichloromethane, toothpaste, hand cream, urea, alcoholic beverage, natural fruit, fruit drink, meat, vegetable oil, water, NaCl (solution), mustard, soap solution, paint remover (kerosene), phenol and citric acid.

**Group 2:** Coffee, black tea, milk (condensed and evaporated), cola beverages, vinegar, hydrogen peroxide (3% solution), ammonia (10% solution of commercial concentrate), nail polish remover, lipsticks, water colour, laundry marking ink and ball point ink.

**Group 3:** Sodium hydroxide (25% solution), hydrogen peroxide (30% solution), concentrated vinegar (30% acetic acid), acid based metal cleaners, shoe polish, hair colours, iodine, boric acid and lacquers

**Group 4:** Citric acid (10% solution) and acetic acid (5% solution)

### 5.2 CLEANING OF CHEMICAL STAINS

- To clean the surface, use a damp cloth or sponge and a mild soap or detergent.
- Stains belonging to group 2 such as coffee or tea can be removed using a mild household cleaner/detergent and a soft bristle brush.
- If a stain persists, apply a paste of baking soda and water with a soft bristled brush. Light scrubbing should remove most of the stains. Avoid excessive scrubbing or exerting too much force as this may damage the decorative surface.
- For gloss finish laminates having stubborn stains belonging to Group 3 and 4, use undiluted household bleach or nail polish remover.
- Apply the bleach or nail polish remover to the stain and let it stand no longer than two minutes. Rinse thoroughly with warm water and wipe dry. This step may be repeated if the stain appears to be going away and the colour of the laminate has not been affected.

### **5.3 CLEANING OF ADHESIVE FILM STAINS**

Film once pasted on the laminate surface will remain intact for six months from the date of lamination without leaving any adhesive residue. It is strongly recommended to remove the film within six months of receipt of laminates to avoid transfer of glue stains. If by any chance, some glue is transferred to the laminates, follow below process for cleaning of glue stains.

- Do not scratch the light stains. Use clean hot water with towel, soft sponge or nylon brush to soak and remove. Remove stains with solution of normal non-abrasive cleaning agent, or let it soak according to the degree of soiling, then wash off with clean water or glass cleaner. Remove all traces of cleaning agent, to prevent streaks developing. With clean, absorbent cloth or paper towels, wipe the surface dry and change cloths frequently.
- For harder stains, repeat the above process several times if necessary. General purpose IPA (Iso propyl alcohol) can also be used for removal of glue stains.

### **5.4 GENERAL CLEANING CAUTION**

Always clean all machine areas and compact surfaces by pressurised air before each fabrication process. This will avoid the development of deep scratches due to not cleaning big particles on the areas.

### **DISCLAIMER**

The above guidelines are for general informative purpose only and all the process listed in this document may not be suitable for all applications and jurisdictions. It is strongly recommended that the user obtains and refers independent advice regarding compliance with design requirements, applicable codes, local laws and regulations and test standards. Vink will not accept any liability in relation to the use of this document. You can also refer the website [www.vink.com](http://www.vink.com) for further information related to the organization and the product.