



International Committee of the Decorative Laminates Industry

Technical Leaflet

Product Data Sheet

for

HPL Composite Panels

August 2014



Preface

This information describes the composition of HPL Composite Panels and gives advice for their handling, processing, use, and disposal. Such HPL Composites are used as kitchen worktops, kitchen door fronts, office desktops, restaurant tables, wall panels and windowsills. HPL Composite Panels are not classified as hazardous substances and therefore they do not require a special marking nor a description by a safety data sheet.

The technical leaflet is prepared for manufacturers, processing companies and retailers of HPL Composite Panels.

It reflects the state of knowledge as of August 2014.

This document makes no claim of completion regarding listing the full details of any standards referred to in the text.

All information is based on the current state of technical knowledge, but it does not constitute any form of liability. It is the personal responsibility of the user of the products described in this information leaflet to comply with the appropriate laws and regulations.

For more than 50 years the ICDLI has been the international representative of the interests of European laminate manufacturers. Further information about the ICDLI and the data sheets published up to now can be found at www.icdli.com.

This application was compiled by the International Committee of the Decorative Laminates Industry. It considers the conditions of application technology in the European countries. If you have further questions, please contact us:

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1. Description and composition

For the purpose of this product data sheet, HPL Composite Panels are defined as composite boards consisting of E1 quality wood based substrates (chipboards, plywood, fibreboards and MDF) faced on one or both sides with HPL, bonded normally with PVAc or amino resin adhesives.

The components must comply with the following standards.

High pressure laminates (HPL): EN 438

Wood based substrates:

Chipboard: EN 312

Plywood: EN 636

Fibreboard: EN 622-1

MDF: EN 622-5

Adhesives: EN 204

1.1 The decorative surfacing material

The laminates referred to are usually melamine surfaced high pressure decorative laminates (HPL), supplied in sheet form in a variety of sizes, thickness and surface finishes. Laminates basically consist of paper and thermosetting synthetic resin, paper comprising more than 60 % of the product.

For further information see the corresponding "Product Data Sheet for High Pressure Laminates (HPL)".

1.2 The substrate

Wood based substrates are produced by pressing wood in various forms (fibres, chips or veneers) with thermosetting bonding agents. They comprise a quality with a minimum formaldehyde emission potential (measured according to EN 120), meeting the requirements of national regulations, and are therefore officially accepted for indoor use.

1.3 The adhesive

Normally the HPL is bonded to the substrate using water based PVAc or amino resin adhesives forming an inert glue line. Other types of glues may also be used; in such cases please consult the instructions given by adhesive supplier. For further information see ICDLI technical leaflet gluing table May, 2013.

2. Storage and Transportation

Storage and transportation should be carried out in accordance with the manufacturer's recommendations; no special precautions need to be taken.

For transportation, HPL Composite Panels are classified as a non-hazardous product; no labelling is required.

3. Handling and Machining of HPL Composite Panels

The usual safety requirements of fabrication and machining should be observed when handling HPL Composite Panels, including the correct choice of tools.

Because of the possibility of sharp edges protective gloves should always be worn when handling HPL Composite Panels.

The contact with dust from HPL Composite Panels does not present any special problems, however a small percentage of personnel may be sensitive or even allergic to machining dust in general.

Exposure to inhalation of wood dust must be controlled in accordance with limits specified in the national regulations. Work areas should be well ventilated.



4. Environmental and Health Aspects in Use

The decorative surfaces of HPL laminated elements are cured and therefore chemically inert.

HPL formaldehyde emission level is far below the limit for wood based materials. Due to their very low permeability, HPL bonded to wood based substrates act as a barrier against possible formaldehyde emissions coming from the substrates.

There is no migration affecting food and, consequently, the HPL surface is approved for contact with foodstuffs.

The decorative surfaces are resistant to common household solvents and chemicals, and have therefore been used for many years in applications where cleanliness and hygiene are important.

The non-porous HPL surface is easy to disinfect with hot water, steam and common types of disinfectants used in hospitals and other commercial facilities.

A HPL composite panel is an article and not a chemical substance and therefore REACH does not apply.

Never the less it is important to ensure an information exchange with the raw material suppliers on REACH relevant substance properties.

5. Maintenance

As HPL surfaces do not suffer from corrosion and oxidation, they do not need any further surface protection (lacquers or paints).

6. HPL Composite Panels in Fire Situations

As wooden materials are used as substrates HPL Composite Panels have fire characteristics similar to other wood based products. For their use as building materials, they must be classified according to national fire performance regulations.

Due to incomplete burning, as with many organic materials, hazardous substances are to be found in the smoke.

In dealing with fires in which HPL Composite Panels are involved the same firefighting techniques should be employed as with other wood based building materials.

7. Energy Recovery

On account of their high calorific value (15 - 18 MJ/kg)*¹ HPL Composite Panels are ideal for thermal recycling. When burnt completely, they produce water, carbon dioxide and oxides of nitrogen, similar to the burning process of any other organic wood based materials. Therefore HPL Composite Panels comply e.g. with paragraph 8 of the economic law of circular flow (Kreislaufwirtschaftsgesetz, KrWG).

Well controlled burning processes are achieved in modern, officially approved industrial incinerators. Ashes of this process can be brought to controlled waste disposal sites.

8. Waste Disposal

HPL Composite Panels can be brought to controlled waste disposal sites according to current national and/or regional regulations.

¹ For comparison: Calorific value of fuel oil: 39 - 42 MJ/kg, of hard coal: 28 - 31 MJ/kg



9. Technical Data

9.1 Physical / chemical characteristics

9.1.1 Physical state	Solid sheets
9.1.2 Density	$\geq 0,6 \text{ g/cm}^3$
9.1.3 Solubility	Insoluble in water, oil, methanol, diethyl ether, n-octanol, acetone
9.1.4 Melting point	HPL do not melt
9.1.5 Calorific value	15 - 18 MJ/kg
9.1.6 Heavy Metals	HPL Composite Panels do not contain toxic compounds of antimony, heavy metals, barium, cadmium, chromium ^{III} , chromium ^{VI} , lead, mercury, selenium.

9.2 Stability and reactivity data

9.2.1 Stability	HPL Composite Panels are stable: they are not considered to be reactive or corrosive.
9.2.2 Hazardous reactions	None
9.2.3 Material incompatibility	Strong acids or alkaline solutions will stain the HPL surface

9.3 Fire and explosion data

9.3.1 Ignition temperature	Approx. 330 °C
9.3.2 Flash point	None
9.3.3. Auto-ignition	None
9.3.4 Thermal decomposition	Possible above 160 °C. Like wood, toxic gases may be emitted, e.g. carbon monoxide, carbon dioxide, ammonia, depending upon the burning conditions (temperature, amount of oxygen, etc.).
9.3.5 Flammability	HPL Composite Panels are not considered to be flammable. They will burn only in a fire situation, in presence of open flames.
9.3.6 Extinguishing media	HPL Composite Panels are considered as Class A combustible material. Carbon dioxide, water spray, dry chemical foam can be used to extinguish flames. Water dampens and prevents rekindling. Wear self-breathing apparatus and fire protective clothing.
9.3.7 Explosion hazards	HPL Composite Panels machining, sawing, sanding and routing produce dust. Safety precautions and adequate ventilation must be observed to avoid airborne dust concentration.
9.3.8 Explosion limits	Dust levels should be kept below 5 mg/m^3
9.3.9 Protection against explosion and fire	In the case of fire HPL Composite Panels shall be treated as wood based materials.



- 9.4. Electrostatic behaviour** It minimizes the generation of charge by contact-separation or rubbing with another material. It does not need to be earthed. HPL surface resistivity is between $10^9 - 10^{12}$ ohms and a chargeability of $V \leq 2$ kV according to CEI IEC 61340-4-1 so that HPL are considered as antistatic material.
- 9.5 Storage and transport** HPL Composite Panels are classified as non-hazardous for transportation purposes and there are no specific requirements.
- 9.6 Machining** Use gloves to protect from sharp edges and safety glasses to prevent eyes injury. No special working equipment is necessary, except protections to minimise dust exposure in case of sheet machining:
- 9.7 Disposal considerations** Waste material should be handled according to local regulations. Burning is permitted in approved industrial incinerators.
- 9.8 Health information** HPL are not considered to be dangerous for humans and animals. There is no evidence of HPL-induced toxicological effects and eco-toxicity. HPL surfaces are physiologically safe and approved for use in contact with foodstuff. HPL need to be at least verifiably in accordance with VO (EG) Nr. 1935/2004.
- 9.8.1 Working areas** General dust regulations are applicable.
- 9.8.2 Formaldehyde emission** < 3,5 mg/h m² (tested according to EN 717-2)
< 0.05 ppm (tested according to EN 717-1 (WKI chamber method))