

Product data sheet FUNDERMAX Decorative high pressure laminates (hpl)

This information describes the composition of FUNDERMAX hpl and gives advice for their handling, processing, use and disposal. FUNDERMAX hpl are not classified as hazardous substances and therefore do not require a special marking.

1. Description / Composition

FUNDERMAX hpl are high pressure laminates (hpl) according to European norm EN 438. Hpl are sheets consisting of layers of cellulose fibrous material (normally paper) impregnated with thermosetting resins and bonded together by the high pressure process. The process, defined as the simultaneous application of heat ($\geq 120^{\circ}\text{C}$) and high specific pressure ($\geq 5 \text{ MPa}$) provides flowing and subsequent curing of the thermosetting resins to obtain a homogenous non porous material ($\geq 1,35 \text{ g/cm}^3$) with the required surface finish.

Basically 2/3 of the hpl consists of paper and the remaining 1/3 of cured phenol-formaldehyde resins for the core layers and melamine-formaldehyde resin for the surface layers plus an urethan-acrylic coating in case of FUNDERMAX Exterior.

The resins belonging to the group of thermosetting resins are irreversibly crosslinked by chemical bonds formed during the curing process producing a nonreactive, stable material with characteristics which are totally different from those of its component parts.

FUNDERMAX hpl are supplied in sheet form in a variety of sizes, thicknesses and surface finishes. In case improved fire retardance is required, FUNDERMAX hpl can be offered in fire retardant F-quality, not containing halogens.

2. Storage and transport

Storage and transport shall be in accordance with the general processing recommendations for hpl. No special precautions need to be taken.

FUNDERMAX hpl are not classified as a hazardous product. No labelling is required.

3. Handling and machining of FUNDERMAX hpl

The usual safety requirements of fabrication and machining have to be followed with regard to dust

- dust separation,
- dust extraction,
- fire prevention etc.

Because of the possibility of sharp edges protective gloves should be worn when handling laminates. The contact with dust from hpl does not present any special problems, however a small percentage of personnel may be sensitive or even allergic to machining dust in general.

4. Environmental and health aspects in use

FUNDERMAX hpl are a crosslinked, duromere material that is chemically inert. Due to their very low permeability FUNDERMAX hpl act as a barrier against possible gaseous emissions.

FUNDERMAX hpl are approved for direct contact with foodstuff. The decorative surface of FUNDERMAX hpl is resistant to all common household solvents and chemicals and have therefore been used for many years in applications where cleanliness and hygiene are demanded.

The non porous surface is easy to disinfect with hot water, steam and all types of disinfectants used in hospitals and other commercial applications.

5. Maintenance

As hpl do not suffer from corrosion and oxidation, no further surface protection and no maintenance apart from cleaning is needed.

6. Hpl in case of fire

FUNDERMAX hpl are difficult to ignite and have a low spread of flame. The evacuating time in case of fire is therefore prolonged.

In case of lack of oxygen, the fire can produce toxic substances due to incomplete combustion as with any other organic material.

FUNDERMAX hpl are also available in F-quality (fire retardant) and do not contain halogenated fire retardants.

In case of fires in which hpl are involved, the same fire fighting techniques should be employed as with other wood based materials.

7. Energy recovery

Due to their high calorific value (18 – 20 MJ/kg) hpl are ideal for thermal recycling. When burned completely at 700°C, hpl are transformed to energy, water and carbon dioxide.

Well controlled burning processes are achieved in modern approved industrial incinerators. Ashes of this process can be brought to controlled waste disposal sites. They do not contain heavy metals.

8. Waste disposal

Hpl can be disposed on controlled waste disposal sites according to current national and/or regional regulations.

9. Technical data

9.1 Physical-chemical characteristics

9.1.1 density	ca. 1,40 g/cm ³
9.1.2 solubility	insoluble in water, oil, organic solvents
9.1.3 calorific value	18-20 MJ/kg
9.1.4 ignition temperature	ca. 400 °C
9.1.5 thermal decomposition	above 250°. Depending upon burning conditions (lack of oxygen, temperature) toxic substances may be emitted; hpl do not melt
9.1.6 dangerous reactions	none
9.1.7 heavy metals	none

9.2 Storage, transport and handling

- 9.2.1 Hpl are classified as non-hazardous; there are no special requirements
- 9.2.2 use gloves to protect from sharp edges and wear safety glasses when machining. No special working equipment is necessary, except protections to minimize dust exposure in case of sheet machining
- 9.2.3 Protection against fire: as with wood and wood based materials

9.3 Machining

- 9.3.1 exposure limit: dust below 2 mg/m³
- 9.3.2 explosion limit: dust below 60 mg/m³

9.4 Extinguishing media all common media applicable

9.5 Health information

FUNDERMAX hpl are not considered to be dangerous for humans and animals. There is no evidence of toxicological effects and eco-toxicity. The surface is physiologically safe and approved for use in contact with foodstuff acc to EN1186.

9.6 Formaldehyde emission

Typical value for an unbonded 1mm hpl (one-sided):

< 0,4 mg/h m ²	tested acc. to EN 717-2
< 0,05 ppm	tested acc. to WKI-chamber method

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