

Material Handling Data Sheet for FunderMax Compact Laminates

Max Exterior F Quality, Max Compact Interior,

Max Compact Interior Plus, Max Resistance²

FunderMax Compact Laminates are not classified as a hazardous material and do not require an MSDS listing as per OSHA Standards. Read more at <https://www.osha.gov/Publications/OSHA3514.html>

1. Description / Composition

FunderMax Compact laminates are high pressure laminates (HPL) according to European standard 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 resins for the surface layers plus an urethane-acrylic coating in case of Max Exterior, Max Compact Interior Plus and Max Resistance².

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 Compact laminates are supplied in sheet form in a variety of sizes, thicknesses and surface textures. In case improved fire retardance is required, FUNDERMAX Compact laminates 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 of FunderMax. Please follow local and national safety regulations.

FunderMax Compact laminates are not classified as a hazardous product.

3. Handling and machining of FunderMax Compact laminates

Handling and machining shall be in accordance with the general processing recommendations of FunderMax. 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 Compact laminates are a crosslinked, duromer material that is chemically inert. Due to their very low permeability FunderMax Compact laminates act as a barrier against possible gaseous emissions. FunderMax Compact laminates are approved for direct contact with foodstuff when tested according to the rules of the Regulation (EC) No 1935/2004 and the Commission Regulation (EU) No 10/2011 of the European Parliament and of the Council. FunderMax Compact Laminates are FDA approved for direct food contact. The decorative surface of FunderMax Compact laminates is resistant to most 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 most 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 Compact laminates are difficult to ignite and have a low spread of flame. In case of lack of oxygen, the fire can produce toxic substances due to incomplete combustion as with any other organic material. FunderMax Compact laminates 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 depending on local and national regulations. They do not contain heavy metals.

8. Waste disposal

HPL can be disposed on controlled waste disposal sites according to current local and national regulations.

9. Technical data

9.1 Physical-chemical characteristics

- 9.1.1 density $\geq 1,35 \text{ g/cm}^3$
- 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 known: none
- 9.1.7 heavy metals: none
- 9.1.8 does not contain silica (silicon dioxide)

9.2 Storage, transport and handling

- 9.2.1 HPL are classified as non-hazardous
- 9.2.2 use gloves to protect from sharp edges and wear safety glasses for eye protection when machining. No special working equipment is necessary, except protections to minimize dust exposure in case of sheet machining according to local and national regulations
- 9.2.3 Protection against fire: as with wood and wood based materials

9.3 Machining

- 9.3.1 exposure limit: please follow local and national regulations

9.4 Extinguishing media

all common media applicable

9.5 Health information

FunderMax Compact laminates are not considered to be dangerous for humans and animals. There is no evidence of toxicological effects and eco-toxicity.

9.6 Formaldehyde emission

Max Compact, Max Compact Interior Plus and Max Resistance² meet the Greenguard requirements. See the Greenguard website for valid certificates.

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.

Valid: 06/2018

The content of this document is only to be used for the purpose of information on the handling of FunderMax Compact Laminates. It must NOT be used as a Safety Data Sheet or Material Safety Data Sheet.