

Background Information about the Environmental Product Declaration



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Decorative Laminates Industry

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DECORATIVE HIGH PRESSURE THIN LAMINATES (HPL) DECORATIVE HIGH PRESSURE COMPACT LAMINATES



What is an Environmental Product Declaration?

Environmental Product Declarations (EPD) provide quantified, verified and objective information about the impact of a product or service on the environment. The gathered information is based on well-defined parameters. The whole life cycle of a product – its raw material, its production, its application, and its disposal – is to be considered.

Especially in the building sector, EPDs are increasingly used by architects and property developers in order to prove and guarantee a sustainable way of building when participating in tenders. However, EPDs are also issued for other products used in different sectors.

The international standard ISO 14020 distinguishes between **three types of EPDs**. Type III stands for the most extensive level of them, since it is verified by a third independent authority and therefore, **provides the maximum of objectivity as well as neutrality**.

The drawing up of an EPD follows international and technical regulations which are determined in so called **Product Category Rules (PCRs)**. These PCRs define the content and the outline of the EPD for specific groups of products. Therefore, PCRs have a normative effect.

It is necessary that the EPD contains particular parameters to clearly define the eco-balance of a product. The **life cycle inventory analysis** describes the product's consumption of resources such as energy, water and renewable and non-renewable resources. It also specifies the emissions to air, water and into the earth. The **estimation of the effect** is based on the results of the life cycle inventory analysis and provides specific information about the environmental impact, e.g. the greenhouse effect, the destruction of the ozone layer, acidification or the depletion of fossil and mineral resources. In addition, further indicators are listed such as the kind and the amount of **waste** produced.

What is HPL?

HPL are decorative High Pressure Laminates meeting the demands of the EN 438. HPL consist of impregnated layers of paper pressed together under high-pressure and heat.

HPL not only stand out because of their apparently endless varieties of design and possibilities to be applied, but also because of their outstanding product features. Thus, HPL are – among other things – long-lasting, surface-harden, light- and heat-proof (up to 160 °C), hygienic, easy to clean and food-safe. Furthermore, HPL are not sensitive to scratches, impact and dirt.

Those technical characteristics are complemented by the fact that the possibilities for designing this surface material are nearly unlimited. It is available in all kinds of colours, patterns and surface textures.

In the EPD at hand, the ICDLI distinguishes between two types of HPL: thin-HPL (here, 0.8 mm are taken as an example) and compact-HPL (here, 8 mm are taken as an example). The former needs to be used together with a carrier material due to its thinness. Compact-HPL can be used in combination with a carrier material but is commonly used as a self-supporting material. Compact-HPL can be applied for example, to walls, by using visible or concealed fixing.

Why to issue an Environmental Product Declaration?

Being an excellent and long-lasting surface-material, HPL are suitable for many applications. Not only is HPL applied as a finish to furniture or countertops in kitchens, but it is also used in the building sector for the interior work of a building as well as the facade cladding.

HPL has been known for its outstanding environmental characteristics since the life cycle analysis of 1998 emphasized this. In anticipation of the increasing demand on the part of architects and property developers, in 2012 the ICDLI decided to have an EPD verified according to the newest European guidelines to make the sustainability of HPL more transparent. In 2017 the EPD was once again renewed.

In doing so, it was important to the ICDLI to reach — using the type III declaration — the highest possible level of objectivity concerning the collected data, which is requested and analysed by an independent third authority.

The special characteristic of the ICDLI's EPD is that it is a European average declaration. This means that the analysed data was collected from HPL-manufacturers from all over Europe and does not only represent a product of a single producer. The

companies, which provided information about their products, cover almost 60% of the European market for thin-HPL (< 2 mm) and nearly 45% of the market for compact-HPL. Thereby, it was possible to create a representative average profile for thin- and compact-HPL. In the 2017 renewal two separate EPDs were created, one for thin HPL and one for compact-HPL.

Is it possible to compare Environmental Product Declarations with each other?

It is only possible to compare EPDs for different products under certain conditions. Depending of its application in individual cases other parameters have to be taken into account, such as cleaning and maintenance, exchange cycles, repairs and the mounting and dismantlement.

With its European average declaration on HPL the ICDLI puts itself into the position of a pioneer. So far, just for a few building products such a European declaration has been drawn up and published, according to the newest standard EN 15804. Given that the parameters of a European average declaration differ from those of a national one or even those of a declaration made by a single company, it is not possible to compare these three types of EPDs.

Furthermore, it is essential that EPDs of the same program holder are compared with each other. Based on the different standards, which up to now underlie each program holder, it is not of use to compare the data of an EPD of one program holder with the data of an EPD of another program holder or type.

It is crucial that the application of the products, which are to be compared, is the same.

What are the most important statements of the HPL-Environmental Product Declaration?

The following parameters are vital for the environmental profile of a product:

- Impact on the greenhouse effect (see table: Environmental Impact; GWP)
- Impact on the destruction of the ozone layer (see table: Environmental Impact; ODP)
- The consumption of energy (see table: Environmental Impact; ADPF)

Therefore, the most important statements of the HPL-EPDs are:¹

During the production of one square metre thin-HPL, 3.66 kg CO₂ equivalent are emitted².

Considering the volume of production, the impact of the European HPL-production on the **greenhouse effect** is minimal compared with the European Industry as a whole. This industry sector contributed not more than 0.08% of the total emission of CO₂ of the European industry in 2010³.

The effects on the **destruction of the ozone layer** are nominal. The values 3.18 x 10⁻⁹ kg CFC11 equivalent for thin-HPL and 3.3 x 10⁻⁸ kg CFC11 equivalent for compact-HPL show that HPL generates almost no substances which could damage the ozone layer.

Like in any other producing industry sectors, the **energy consumption** is a very important issue in the HPL industry. The production of one square metre thin-HPL requires 54 MJ (approx. 15 kWh); while the production of compact-HPL consumes 471 MJ (approx. 131 kWh). After use, however, the energy recovery of the surface material itself as well as HPL in connection with a carrier material is high and can be achieved through eco-friendly burning. This retrieved energy is a positive off-set entry in the energy balance.

An overview of the most important parameters:

Parameters	unit	thin-HPL	compact-HPL
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¹ 1 sqm. is taken as a reference value for each.
² This value consists of the emissions, which are produced during the raw materials production, the transportation and the recycling
³ <http://europa.eu/rapid/pressReleasesAction.do?reference=IP/11/581&format=HTML&aged=0&language=DE&quiLanguage=en> and USP Study 2011 "European Laminates Market".

Greenhouse effect (GWP)	kg CO ² equivalent	3.66	31.2
Destruction of the ozone layer (ODP)	kg CFC11- equivalent	3.18 ⁹	3.3 ⁸
Energy consumption (ADPF)	MJ	54.0	471

About the ICDLI

The ICDLI is the international representation of the European HPL-manufacturers.

The ICDLI aims at creating a strong and successful European community of the manufacturers as well as at continuing the success story of HPL.

At present, the association has 15 members and 10 associate members. The skills of the members are brought together in commissions for economic and technical topics, for standardization as well as for public relations.

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