

## Environmental Product Declaration for EKOPANELY board

### Assignment:

EKOPANELY CZ s.r.o. wishes to establish the environmental impact of its products. The company would like to reduce its environmental impact and in so doing it strives to improve the environmental profile of the company and its products. To this end, it commissioned an Environmental Product Declaration (EPD) in 2022 in accordance with the relevant ISO 14025 and 15804+A2 standards.

### Description:

The EPD follows from a comprehensive Life Cycle Assessment (LCA). The LCA is based on a detailed inventory of the inputs and outputs attributable to the selected functional unit for the product. The inputs are the materials, energy and fuels needed to produce the EKOPANELY board. This mainly concerns straw. Its production and processing go hand-in-hand with the consumption of fuel for growing, harvesting and transporting the straw to the processing facility, the consumption of electricity for pressing the boards, the consumption of hydraulic and lubricating oils, etc. All these inputs have been considered, as have the outputs in the form of waste and emission.

The products considered were EKOPANELY board E40 and EKOPANELY board E60. The selected functional unit was within a 1 m<sup>2</sup> range. Thus, all results correspond to the environmental impact of 1 m<sup>2</sup> of EKOPANELY E40/E60 board in terms of production and end-of-life, after which the product is expected to be composted. The LCA did not take into consideration the life cycle stages of transport to customers and installation, as they are highly variable. Where the usage phase is concerned, EKOPANELY boards neither require any additional inputs nor do they produce any outputs, as they constitute passive building elements.

The assessment results are categorised into core and complementary environmental impact indicators and other environmental information. The core environmental indicators comprise 13 indicators (so-called impact categories), which include, for example, climate change, ozone depletion, acidification, eutrophication, loss of raw materials, etc. Complementary indicators are represented by 6 impact categories, such as human toxicity and freshwater ecotoxicity. Other environmental

indicators stem from inventory and declare the energy intensity of the product, broken down into renewable and fossil resources, water consumption, recycled content and waste production.

The LCA also contributes to the assessment of the severity of unit processes (individual materials, energy and fuel sources, etc.) within each impact category. This then helps to identify where efforts to reduce the environmental impacts of a product need to be concentrated to be effective. As regards EKOPANELY boards, electricity consumption is a significant factor in many of the waste categories, including climate change. The installation of renewable electricity generation technologies or the purchase of green electricity would therefore facilitate a significant improvement in the environmental profile of the EKOPANELY boards.

#### Results & Values:

It is in the Climate Change impact category, which essentially represents the Carbon Footprint, that EKOPANELY boards showed results in the negative. This means that their production and use has a positive impact on climate change, due to carbon sinks. The long-term use of straw, which is a natural carbon reservoir, leads to a reduction of carbon dioxide in the atmosphere, since over the course of time EKOPANELY boards are used, more crops will grow, and carbon will again accumulate in the straw.

And what then are the specific values of the carbon footprint assigned to EKOPANELY boards? One square meter of EKOPANELY board E40 contains 10.7 kg of biogenic carbon, resulting in a reduction of 33.9 kg CO<sub>2e</sub> in the contribution to climate change. One square meter of EKOPANELY board E60 contains 14.3 kg of biogenic carbon, resulting in a reduction of 46 kg CO<sub>2e</sub> in the contribution to climate change.