

An introduction to EPDs

LCA can be a useful tool when applied to a specific product or process in order to determine where the highest environmental burdens (hotspots) occur. This attributional form of LCA can be used to identify where best to improve the process to reduce the overall environmental burden of the product. Consequential LCA can be used to determine the environmental impacts arising due to possible changes to the production process.

However, the use of LCA to compare between different materials (such as concrete or timber in construction) is much more problematic and the use of LCA for this purpose requires several criteria to be met:

- The functional unit should be the same
- The whole lifecycle of the material or product should be considered and there should be reasonable and realistic assumptions (e.g., about recycling)
- Reasonable scenarios about maintenance and replacement must be included
- The databases and environmental impact calculation methods used should be stated and be comparable
- The methodologies and inventories should be transparent (often not possible due to commercial confidentiality)
- Reasonable cut-offs should be used and justified with a sensitivity analysis
- The impact categories used should be reliable and meaningful
- A sensitivity analysis should be used to demonstrate the impacts of different assumptions

In order to develop a framework that allows for comparability of environmental performance between products, ISO 14025 was introduced. This describes the procedures required to produce Type III environmental declarations. This is based on the principle of developing product category rules (PCR) which specify how the information from an LCA is to be used to produce an environmental product declaration (EPD). A PCR will typically specify what the functional unit is to be for the product. Within the framework of ISO 14025, only the production phase (cradle to gate) of the lifecycle must be included in the EPD, but it is also possible to include other lifecycle stages, such as the in-service stage and the end-of-life stage. ISO 14025 also gives guidance on the process of managing an EPD programme. This requires programme operators to set up a scheme for the publication of a PCR under the guidance of general programme instructions. There have been other standards issued that apply to the construction sector in order to ensure greater comparability of the environmental performance of products. ISO 21930 gives some guidance on both PCR and EPD development. The European standard is EN 15804, which is a core PCR for building products and it is therefore considerably more detailed and prescriptive than ISO 14025.

We have recently completed a suite of EPDs for Sioo Wood Protection AB – an example can be found here <https://www.environdec.com/library/epd8057>