



Life Cycle Assessment

For Products and Services

SAFER
GREENER
SMARTER

SGS

Environmental impact

Drawing up a life cycle assessment (LCA) is becoming more and more important.

Customers, clients and consumers simply want to know all about the environmental performance of products.

With an LCA, you can determine the environmental impact of your products or services throughout the entire lifespan; from raw material extraction up to the waste phase. You know exactly which environmental impacts occur at every specific moment in the chain.

The energy and material consumption and the emissions are inventoried in every phase: from raw material extraction and production to transport, maintenance and recycling.

Environmental product declaration

You can use the results of an LCA to inform your customers and clients about the environmental impact and the carbon footprint of your product. It's customary to have an Environmental Product Declaration (EPD) drawn up for this.

An EPD is based on the ISO standard 14025 and is validated by an external expert. The energy and material consumption and the emissions are inventoried in every phase: from raw material extraction and production to transport, maintenance and recycling.

It's advantageous that you can publish the result of the LCA as an Environmental Product Declaration (EPD). Keep in mind that the results of an LCA are also the basis for transparent communication to the market about the carbon footprint of your product.



Four-step LCA process

The LCA is drawn up based on the standards of ISO 14040 "Principles and framework of LCA" and ISO 14044 "Requirements and guidelines for LCA standards". When setting up a carbon footprint of a product, ISO 14067 "Greenhouse gases, carbon footprint of products, requirements and guidelines for quantification", is also used.



1. Goal and scope definition

Determining the purpose and scope of the LCA process, as well as identifying the functional unit. The functional or product unit is the unit of measure in which the environmental impacts are calculated and in which they can be compared with similar products. For example a running meter, square meter, mass in kilograms or cubic meter.



2. Inventory analysis

Inventory of the required data, including used (recycled) raw materials, energy, water and transport distances. We execute this step in collaboration with the producers, manufacturers, suppliers and an LCA expert



3. Impact assessment

During the "characterization step" the collected data is entered into LCA software and converted into the environmental impacts.



4. Interpretation

The results of the previous phases are now interpreted and checked. We determine which processes are dominant and which phases and processes have the most effect on the environmental impact during the entire lifecycle. Sensitivity analysis is used to check the influence of assumptions.



"As an innovative player, we strive for a leading market position. That's why we are committed to providing insight into the environmental performances of our ceiling panels through life cycle assessment"

Case study

Objective insight into environmental performances of ceiling panels

Armstrong World Industries is a global leader in the design and manufacturer of innovative, commercial ceiling, suspension system and wall solutions. Worldwide there are more than 26 production facilities, including one in Germany, which largely supplies production for Europe.

"We focus on top clients. Clients who are designing and building the most innovative and sustainable buildings worldwide. We owe it to our reputation to provide insight into our environmental performance," as Jeremy Sumeray explains the benefits on why they use LCA's.

SGS visited the factory in Germany as a starting point, and analyzed the different types and series of ceiling panels in a time frame of around a month.

Harry van Ewijk, Sustainability Advisor at SGS said, "We are talking an intensive process. We provide insight into the environmental effects at every stage of the life cycle, resulting in EPD's and inclusion in the National Environmental Database. Armstrong now has all the environmental information available and gives objective insight into the environmental performance".

"For us, it was important that we could complete this process effortlessly," Jeremy Sumeray adds. "The European market is fundamentally different from, for example, the American one. We wanted to work with a party that knows this market. Through LCA's from SGS, we provide accountability in a reliable manner. Everything has been analyzed in detail. When it comes to our environmental impact, we have a clear answer for our customers in advance".

Sustainable and circular products

More and more companies are actively engaged in making their products sustainable and circular. An LCA is a good baseline measurement as it provides insight into which raw materials and production processes cause the most environmental impact within the supply chain, during and after use. An LCA adds value in many ways - an overview of some of the benefits are described below.

1. Gateway to a truly sustainable product

Sustainability is about inclusiveness, where the chain partners of your product can be made aware of their impact on the environmental performance. In short an LCA makes ecodesign possible and involves your chain partners, offering them the opportunity to realize cost reduction in the chain.

2. Direct insight into your CSR efforts

The outcome of an LCA is presented in a standardized unit, "single score". This allows your customers to make a direct comparison between your product and the competitors product or the national average. Your efforts are immediately visible. At the same time, you can also communicate your outstanding CSR performance to your customers.

3. Perfectly in line with sustainable purchasing policy of governments and large companies

Purchasing processes increasingly include environmental aspects of the products. To give shape to this, environmental criteria have been drawn up. For example, the purchaser must have insight into the entire life cycle of a product or service and your LCA will be utilised for this.

4. Extra credits for Cradle to Cradle, BREEAM and LEED

With the above-mentioned certifications it's often possible to achieve higher levels or score extra credits if the origin and environmental impacts of a product are known. An LCA is the ideal instrument to give clear and undeniable insight into these topics.

Why choose SGS

With our specialized consultants, we offer you the one-stop-shop for your organizational advice on sustainable entrepreneurship. That's why we are often the first choice of developers and government organizations worldwide.

Moreover, we are always up to date when it comes to the latest environmental and sustainability regulations and LCA methods.

Our LCA services include:

- Preparation of Life Cycle Assessment
- Comparison of your product to similar products on the market
- Drawing up an Environmental Product Declaration (EPD)
- Calculating the Circular Product Footprint
- Optimization of reuse and recycling
- Policy research
- Product and process innovation

Contact Industries.Environment@sgs.com for more information

SGS is the world's leading testing, inspection and certification company.

We are recognized as the global benchmark for sustainability, quality and integrity.

With more than 97,000 employees, we operate a network of more than 2,650 offices and laboratories around the globe enabling reach and local support.

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