



Product Category Rules, Life Cycle Assessments and Environmental Product Declarations

presented by NSF Sustainability

In a marketplace wary of green product hype, NSF Sustainability provides independent, science-based verification of environmental claims that achieve the highest levels of transparency. Environmental Product Declarations (EPDs) offer an international standard of communication to objectively compare and describe a product's environmental impact throughout its entire life cycle from cradle to grave. EPDs are recognized globally and by LEED Green Building Rating System as a preferred reporting tool. As a program operator, NSF Sustainability can assist your organization in developing product category rules for your industry and provide Environmental Product Declaration (EPD) verification across multiple product groups and industries.

How PCA, LCA and EPD Work Together



The **Product Category Rule (PCR)** defines which data is used in a life cycle analysis and how the data is collected and reported.

The **Life Cycle Assessment (LCA)** analyzes the data specified in the PCR. The LCA measures inputs, outputs and environmental impacts of a product across its lifespan from cradle to grave.

Environmental Product Declaration (EPD) is the summary document of data collected in the LCA as specified by the PCR. EPDs enable comparison of a category of products on environmental impacts. Finally, an EPD can be verified by an independent third party.

Product Category Rules

Product Category Rules are defined in ISO 14025 - Environmental Labels and Declarations - Type III Environmental Declarations. According to ISO 14025, a PCR is a set of specific rules, requirements and guidelines for developing Type III environmental declarations for one or more product categories. The PCRs define the type of data that should be collected, measured and reported in a life cycle analysis. PCRs include instructions for gathering data about the consumption of resources, including energy, water and renewable resources, and emissions to air, water and soil. The following impact categories are investigated:

- Climate Change
- Depletion of Stratospheric Ozone Layer
- Acidification of Land and Water Sources
- Eutrophication
- Formation of Photochemical Oxidants
- Depletion of Fossil Energy Resources
- Depletion of Mineral Resources
- Hazardous and Non-Hazardous Waste

Because data collection methods are standardized, the PCR allows for comparison of different environmental product attributes amongst products in a defined category.





Life Cycle Assessment

Life cycle assessment is an analysis of product impacts from cradle to grave. LCAs use scientifically accepted methods to analyze product life stages including:

- Raw Material Production and Selection
- Manufacture of the Product
- Packaging and Distribution of the Product
- Use of the Product
- Disposal, Reuse or Recyclability of the Product

The ISO 14040 series of standards provides the framework for the performance of life cycles assessment.

Environmental Product Declaration

An EPD document outlines the results of the LCA and must contain criteria defined in the PCR. These uniform reporting requirements set forth by the PCR enable cross-comparison of EPDs for different products within a category. An EPD may be independently verified according to ISO 14025 by a program operator like NSF Sustainability. Verification proves that the data was collected in accordance with the applicable PCR. The verified EPD is a Type III Environmental Product Declaration and could qualify for points through the Leadership in Energy and Environmental Design (LEED) pilot credit 43 for green building projects.

Benefits of PCRs and EPDs

By taking these steps, manufacturers can assess the position of their products in the marketplace and respond to increasing demands for environmentally sustainable products and transparency in environmental claims. Collection of LCA data helps identify areas for improvement of their environmental attributes and adoption of more sustainable operational practices and business approaches. Customers can more easily compare products based on their environmental attributes using data that is objective, neutral and transparent.

Sustainability Assured



NSF International has been testing and certifying products for safety, health and the environment for more than 65 years (www.nsf.org). As an independent organization, NSF's mission is to protect public health and the environment through standards development, inspection, testing and certification for the food, water, building materials, retail, chemical and health science industries. Operating in more than 120 countries, NSF is committed to protecting public health worldwide.

Through its National Center for Sustainability Standards (NCSS), NSF has developed sustainability assessment standards for product categories such as chemicals, building products and materials, and water quality. In addition, NSF, as a program operator, has developed PCRs for institutional furniture and flooring products. NSF works with leading regulators, scientists, engineers, public health and environmental health professionals, and industry representatives to develop these transparent, consensus-based standards.

Contact Us

For more information about developing PCRs and verifying EPDs, please contact NSF at +1 (734) 476-2543, internationally at 00 +1 (734) 476-2543 or by e-mail at sustainability@nsf.org.

