Product Life Cycle Assessment A Step Toward Sustainability

By Scot Case

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The landscape for green or environmentally preferable products is changing. Environmental awareness is increasing and manufacturers, businesses and even building owners are looking for ways to assess the impact their products, processes and practices are having on people and the environment. The demand for more detailed environmental information is shaping the type of details gathered and the way they are presented. A key tool many businesses are becoming familiar with to help them minimize harmful effects while looking at the entire life cycle of a product is the cycle assessment (LCA).

What is a product life cycle?

The term "life cycle" has been around for a while, and is beginning to gain greater traction among manufacturers as more and more customers are looking for greater transparency. So, what exactly is a product life cycle?

From an environmental performance perspective, life cycle is a measure of all of the product's environmental impacts through every stage in its design, manufacture, use, and disposal. A life cycle assessment is the accounting tool used to compute the total environmental impacts. This presentation of multiple environmental impacts allows manufacturers to glean information for research and development, and risk management. This even helps to inform the communication of environmental attributes. LCA operates from the perspective that stages of the life cycle are interdependent, meaning that one operation leads to the next, according to the .S. Environmental Protection Agency. For example, carpeting cannot be properly assessed without taking into consideration each step in the process. By assessing each input (e.g. water, fiber, chemicals and energy) and output (e.g. atmospheric emissions, solid waste and grey water), a more accurate environmental performance assessment can be gained.

Various environmental certifications and products are currently using LCA in their own assessment of products, making it easier for BSCs to access this information. Third-party eco-labels such as , Seal and Environment certify environmentally preferable products against standards that are multi-attribute and LCA-based, considering a broader range of impacts such as use of non-renewable resources, greenhouse gas emissions, solid

waste generated, water pollution and more.

These certifiers consult with LCA, environmental and industry experts, as well as environmental non-profit groups, academics, government officials and others to develop standards to identify environmental leadership. This standard-setting approach combines a careful balance of known environmental impacts with current industry practices to identify environmental leadership that is also reflective of what is available on the market today.

Another way of easily accessing LCA-type information is through Environmental Product Declarations (EPDs). These brief, third-party verified reports document environmental impacts and make it possible to compare similar products based on environmental attributes.

Essentially, an EPD summarizes an LCA and can even provide additional environmental information. For it to be useful, an EPD needs to meet the ISO 14025 standard, meaning that it is based on publicly available product category rules that determine the boundaries of the data that should be collected and how it will be measured in the LCA. EPDs can look very similar to nutrition labels found on food items. Like a nutrition label, EPDs help by highlighting the most relevant and meaningful data to readers, but it will not point out the "healthiest" product. It does, however, accomplish the task of providing additional information to help building service contractors make their own comparison to determine which of the two items is greener.

When choosing between two rival products, an EPD helps to identify the product or process with the least environmental impact. Cost and performance data can also be factored into this comparison. Take two cans of paint, for example. Paint Can 1 may promote its "greenness" because it uses XYZ chemical instead of a more hazardous ingredient. Paint Can 2 may claim it is the "greenest" because it makes use of recycled paint, therefore reducing its need for totally new resources. While these individual attributes may be beneficial, only a more holistic view of the manufacture and life of each of these products will truly tell which of them is the actual environmental leader.

Unlike traditional eco-labels, which allow purchasers to identify environmentally preferable products, EPDs could appear on every product, not just the environmental leaders, allowing purchasers to compare various dimensions.

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