

Kingspan Insulated Panels North America Sustainability Statement

The approach to sustainability for Kingspan Insulated Panels in North America is based on the principles established by the Kingspan Group as globally reported in their GRI (Global Reporting Initiative - <http://www.globalreporting.org/Homereport>) – see www.kingspanpanels.com/GRIreport.

The green building movement in the US is largely being driven by “green” rating” systems, standards, and building codes that incorporate criteria for environmental consideration in product evaluation. These efforts are now incorporating LCA (Life Cycle Assessment) as a scientific approach for building product environmental assessment and related manufacturing process impacts. The LCA approach is an effort to improve upon what has been the lack of consistent environmental reporting and labeling that is causing some level of confusion often referred to as “greenwash”.

Many of the early product environmental certifications focused on single attribute reporting such as VOC content, 500 mile radius, and recycled content. These certifications are really more of an audit of what the manufacturer reports for these single attributes. In a report from NIST¹, “it has also been observed that as sustainable product labeling programs expand and more government agencies require procurement, as related to environmentally preferable products, problems have arisen because the associated product testing to label products, as an example, low-emitting test certifications are not yet supported by reliable measurement science. Interlaboratory comparisons performed to date have shown coefficients of variation between measured emission rates on the order of 50 % and as large as 300 %.” This begs the question to be asked, what value are these labels to project specifiers and design professionals? Current discussion in various, “green rating” systems, standards and codes are now considering multiple attribute evaluation. These multiple attributes are in many cases data generated from product life cycle analysis and LCA tools

The Kingspan LCA project

Kingspan Insulated Panels is committed to undertaking a Cradle to Grave LCA beginning in 2010 for the purposes of evaluating environmental process improvements and development of an EPD (Environmental Product Declarations). EPD’s cover multiple attribute environmental reporting based on ISO 21930 - Sustainability in building construction — Environmental declaration of building products. This effort is supported by creating a senior staff position for a Director, Environment & Sustainability who will lead Kingspan Insulated Panels North American sustainability program.

While the Kingspan LCA project is being developed, all available environmental information has been posted online at www.greenformat.com. Some of this information is based on European operations and is so noted. GreenFormat has been developed

by CSI – The Construction Specifications Institute and is a standardized online tool for reporting sustainable product attributes. GreenFormat is self-reported by manufacturers but they are referred to ASTM E2129 - Standard Practice for Data Collection for Sustainability Assessment of Building Products and ISO 14021 - Environmental labels and declarations – Self-declared environmental claims (Type II environmental labelling) for basic principles and guidelines on how to self-report.

Cradle-to-grave is the LCA of the materials used in making a product, from the extraction of materials and energy to the return of the materials to earth when the product is finally discarded. All inputs and outputs are considered for all the phases of the life cycle including “use-phase” energy efficiency benefits of installed product. There will also be sensitivity studies that address gaps in the LCA.

Cradle-to-Cradle

Cradle-to-cradle is a way of thinking about life cycles. If the grave of one cycle can be the cradle of its own or another, the life cycles are called "cradle-to-cradle"

In 2005, MBDC launched the Cradle to CradleSM (C2CSM) Certification and as reported by Green Building News, Volume 16, Number 2 · February 2007, “the C2C protocol has generated much excitement as the corresponding certification program lacks some of the comprehensive data and impartiality that are expected in an increasingly sophisticated market for green certifications.”

The article further explains: “To achieve any C2C certification requires that all product ingredients be identified down to the 100 parts per million (ppm) or 0.01% level and assessed according to 19 human and environmental health criteria from a chemistry perspective.

Per the Cradle to Cradle requirements a complete Bill of Materials (BoM) is required before a proposal for certification can be generated. Once the proposal has been accepted the following information is required for consideration as a Cradle to CradleSM Basic or Silver certified product:

- Complete ingredient formulations for all materials used in the product.
- Recycled content and weight of all materials used in the product
- Annual energy required for manufacture of product and source(s) of that energy
- Water stewardship guidelines document
- Fair labor/corporate ethics guideline document

The article further addresses that C2C is complicated by lack of transparency, gaps in its underlying criteria at both broad and detailed levels, and the lack of boundaries between the C2C standards-developing body, the C2C certification body, and the MBDC consulting body. Architects and design professionals specifying C2C-certified products may believe that they fulfill McDonough and Braungart's cradle to-cradle ideals, without realizing that those ideals are reflected only at the unattained Platinum level."

This lack of transparency is also known as the "black box" and is explained in simple terms as a series of criteria that are examined in each phase of the manufacturing process but reported in its totality as a system report. This means if data had any uncertainties it was aggregated into the final report making any specific impact non-transparent.

Summary

The critical issue for specifiers and design professionals is to specify environmental requirements for projects that may or may not be labels and certifications. This requires understanding trade-offs that are impacted when specifying environmental performance requirements in relationship to product performance and compliance.

Kingspan believes that EPD's – Environmental Product Declarations are the key in understanding and responsibly reporting building product environmental impacts along with performance requirements. Per ISO standard 21930, an LCA is required to develop EPD. The next step for Kingspan is development of the LCA followed by the EPD report. The LCA will include an inventory of all manufacturing inputs and plans to improve environmental impacts of the manufacturing processes. The LCA scientific approach with an independent consultant and peer review is the sustainability assessment path that Kingspan Insulated Panels North America has chosen for the most acceptable, comprehensible and reliable environmental reporting.

1. http://www.bfrl.nist.gov/goals_programs/PDF/NEHRP/NEHRPASCE_8600061.pdf

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