



EPD, THE CURRENT DEBATE AND CHALLENGES

EN 15804 approach to end of life

EN 15804 is based on the so-called, modularity principle, this approach is needed to properly assess construction products and to report transparently the environmental impacts where they occur.

The modules related to end of life are modules C and D.

- Module C covers deconstruction / demolition; transport to waste processing; waste processing for reuse, recovery and/or recycling and disposal.

System boundary for module C is reached when the output reaches the end-of-waste state according to the EU waste framework directive.

- Module D covers the environmental loads and benefits beyond the system boundaries of the assessment of the buildings life cycle resulting from recycling of materials; reuse of products and recovery of energy leaving the product system.

Taking into account the following definitions:

- Loads: impacts related to recycling process or incineration
- Benefits: avoided impacts related to avoided production of primary materials or energy
- Beyond: after the end-of-waste point (system boundary)

On 10th December 2015, Construction Products Europe organised an internal workshop to discuss the current situation of the development of Environmental Product Declarations (EPD). Over 60 experts in Life Cycle Analysis (LCA) and/or construction products were in attendance. Overall, the debate focused on the future of EPD in Europe and on the impact the Product Environmental Footprint (PEF) initiative is having on construction.

The first part of the workshop session was dedicated to explain and identify some issues now being discussed by EPD experts. In their presentations, Lisa Wastiels (BBRI) addressed end of life and modules C and D according to EN 15804; Dieter De Lathauwer (Belgian Ministry of Health, Safety of the Food Chain and Environment) and Carolin Spirinckx (VITO) explained the approach of standardisation experts to the inclusion of new indicators in EPD and finally Jane Anderson (thinkstep) provided some examples on how benchmarking is applied to construction products.

The presentations led to a fruitful open debate. This report contains not only some interesting points presented by the speakers but also the topics discussed during the debate.



Allocation of recycled content is another important concept when discussing end of life. In essence it is the partitioning of environmental burdens between assessments.

Product environmental footprint methodology uses 50:50 allocation rule for recycled material's flows.

In EN15804, Module D provides additional information reflecting the environmental aspects of reuse, recycling and energy recovery outside the system boundary calculated by system expansion, i.e. the avoided impact.

The end of life assessment methodologies in all cases should work properly in all situations, including open and closed loop but also considering that the recycling potential of construction products is not always clear (different recycling routes and long life span).

Additional indicators

Publication of PEF reopened the debate on the need of additional indicators in construction EPD. CEN/TC 350 decided to develop a clear and structured analysis of the relevance and robustness of additional impact categories, models and indicators.

The indicators included in the report are:

- Particulate matter;
- Ecotoxicity;
- Land use (related impacts);
- Water depletion / scarcity and
- Biodiversity;
- Ionizing radiation.
- Human toxicity;

The final decision on the inclusion of new indicators will depend on the final assessment of CEN/TC 350 and also on the inputs received in the coming months, including from PEF pilot studies. The criteria are: relevance, quantifiability, robustness, applicability and stakeholders' acceptance.

Benchmarking

Benchmarking is the evaluation or measurement of the quality of something compared to an accepted standard. For construction products it implies a way to calculate and a reference element.

In the case of EPD information provided is very extensive and includes different indicators. There is a need to agree on a functional unit and a reference element. The way forward in the developing of a benchmark for construction products is complex

CEN/TC 350 methodology promotes the assessment of impacts of construction products by the contribution they make to the environmental performance of the building considering the full life cycle.

While EPD are a consistent and reliable source of information they have limitations when used as business to consumer communication.



Methodology convergence

This document is not intended to discuss the pros and cons of both ways but it is clear how the construction industry would benefit from a common scientific methodology for the assessment.

There are some difficulties on the convergence. A non-exhaustive list of them is the following:

- End of life approach is different as explained in this document;
- The scientific background is the same but there are some discrepancies, for example the list of impact categories is different in EPD and PEF assessments;
- The role of EPD is to be the source of full environmental information. PEF approach also promotes a simplified consumer approach and benchmarking when possible;
- Heterogeneous background datasets increase uncertainty and reduces the credibility of both EPD and PEF assessments;

