



An update on how BRE Global is responding to CEN TC350 on the environmental assessment of construction products

In November 2011 BRE Global released a position statement regarding its response to the product level standards emerging from CEN TC350, and in particular how they affected the Green Guide to Specification. This document has been produced in response to requests for further clarification from its stakeholders. It provides an update on BRE Global's activities since the initial statement and gives further details of how its products and services are being reviewed and aligned with the new standards.

Background

There is a growing body of published information on the environmental impacts of individual construction materials. The main source of this information is Environmental Product Declarations (EPD), typically produced to comply with the ISO standard ISO 21930 (which calls on the Life Cycle Assessment (LCA) standards ISO 14040 and ISO 14044, plus the environmental labelling standards ISO 14020 and ISO 14025 for Type III labels).

There are many different EPD schemes in existence and each will have one or more Product Category Rules (PCR) documents that set out how materials and services (or a specific sub-set of materials and services) are assessed. BRE Global has one PCR document that gives explicit details on how all construction materials are assessed by the Environmental Profiles Methodology

The ISO standards for LCA allow for a range of practices, which is why CEN TC350 have been endeavouring to produce a new set of more specific standards for the LCA of construction materials. Several members of BRE Global's staff have participated in the development of the CEN standards at the material and the building levels.

EN15804 relates to the environmental assessment of construction products. The standard essentially provides a basis for creating a PCR document and defines some of the key methodological decisions that have to be made. One of the purposes of defining these choices is to resolve the differences between European national EPD programmes and, by doing so, facilitate the mutual recognition of EPD both across borders and within the various building assessment schemes that exist in Europe. There is a clear advantage for construction product manufacturers in this approach as they will need to produce fewer EPD to cover International trade within the European Union.

Practical experience of implementing EN15804 and European harmonisation efforts

The first version of EN15804 was published recently, and existing European EPD programme operators are beginning to align their methodologies to the standard. The CEN TC350 committee expect that feedback received during the first twelve months of the standard will form the basis for subsequent revision.

As expected, practical experience of implementing EN15804 has shown that there are many areas of the standard that are not yet fully resolved. The implication of this is that EPD produced to different EN15804 compliant PCR documents may not be directly comparable: EN15804 requires EPD to contain a statement to this effect. Differences may be introduced by factors such as the choice and availability of the background data that EN15804 requires, the detail of modelling assumptions and the optional exclusion of certain lifecycle stages from EPD. This potential lack of comparability creates an obstacle to the use of EPD from different schemes within LCA design tools and building assessment schemes.

In response, BRE Global is collaborating with a group of European EPD programme operators to agree a process for developing and managing a core set of rules for implementing EN15804. This harmonisation work will be informed by a broader group of industry stakeholders to ensure that the views of all parties are considered, and that the agreed rules are developed objectively and independently. The working title of this project is the 'ECO Platform'. Further details will be released soon.

BRE Global is also a consortium partner on a European Framework 7 project which is developing operational guidance for lifecycle assessments carried out as part of the Energy Efficient Buildings Initiative (E2Bi). The project, called EeBGuide, is being led by the Fraunhofer Institute for Building Physics (Germany) in collaboration with CSTB (France), ESCI (Spain), PE International (Germany) and Prof CH Sjöström Consultancy (Sweden). The technical content of the EeBGuide will be in line with the recommendations of the International Reference Life Cycle Data System (ILCD) Handbook and aims to harmonise the approach with the standards emerging from CEN TC350. Further details of this project are available from www.eebguide.eu

In addition to the ECO Platform and EeBGuide developments, BRE Global is also engaged in early discussions with a European Organisation for Technical Approvals (EOTA) working group on potential technical approval routes for construction products in respect of European Construction Products Regulation Basic Requirement for Construction Works 7 (Sustainable Use of Natural Resources). BRE Global hosted a Construction Products Association Sustainable Construction Committee meeting on this subject at the end of November 2011 and will continue to offer its support to EOTA. It is expected that the work of CEN TC350 will form a platform for this work.

BRE Global's Environmental Profiles Methodology

In its initial position statement BRE Global stated that it would be offering Environmental Product Declarations (EPD) compliant with EN15804 and since then has been working on a new PCR document, which will be circulated for peer review in the coming months.

As CEN TC350 harmonisation work progresses, BRE Global's EPD programme and LCA tools will be adapted to the requirements of the European standards and the current BRE Environmental Profiles methodology will be gradually phased out.

The timescale for this change is dependent on the revision of the building assessment schemes that use the BRE Environmental Profiles methodology to assess life cycle impacts. At this stage BRE Global is unable to provide a definite timescale, but during the transition period will continue to offer EPD to its existing methodology in order to support the use of the current Green Guide in BREEAM 2008, BREEAM 2011 and the Code for Sustainable Homes.

The Green Guide to Specification

The Green Guide uses a summary rating system to present information on the environmental impacts of alternative specifications in a way that enables users to quickly determine how different specifications compare. The summary rating uses a weighting system that attaches importance to the different environmental impact categories: ISO and CEN TC350 do not endorse this approach as there is a degree of unavoidable subjectivity in the expert consultation process by which the weightings are produced. However, it is clear that there are priorities of focus within the range of environmental issues we currently face: the environmental impact categories with the highest weighting factors are Climate Change and Water Extraction, which reflect the scientific consensus on the greatest environmental challenges to overcome in the near future. BRE Global therefore believes that its weighting process remains robust and relevant for environmental decision making. More information on the Green Guide to Specification can be accessed at www.thegreenguide.org.uk

Green Guide ratings are used with BREEAM and the Code for Sustainable Homes to help architects and specifiers with little or no LCA expertise make eco-informed choices about materials and construction methods. In this respect the intended use of the Green Guide is quite different to the CEN TC350 LCA standards.

IMPACT: Integrated Material Profile and Costing Tool

IMPACT is a specification and database for BIM software developers to enable the production of software tools that carry out consistent LCA and Life Cycle Costing (LCC). The LCA methodology within IMPACT is compliant with the requirements of CEN TC350 standards for building level assessment.

IES, who are a partner in the consortium funded by the Technology Strategy Board to develop IMPACT, will be the first to release IMPACT compliant software tools in spring 2012. Other developers will be able to develop and release IMPACT tools from summer 2013. Initially these tools will use the generic LCA and proprietary EPD information contained in the BRE Construction Database, but as the volume of available EN15804 compliant EPD data increases users will be able to migrate to the environmental indicators described in the CEN TC350 standards.

Future developments and BREEAM integration

BRE Global is reviewing its range of LCA design tools and the ways in which they are integrated into building assessment schemes. BREEAM 2011 already recognises independently verified EPD from any EPD programme and is hopeful that other major European scheme operators will do the same soon.

The CEN TC350 approach to the assessment of environmental impacts of construction works focuses on using the information contained in EPD to conduct whole-building LCA. As the application of these modelling techniques matures BRE Global will review how LCA is treated in its building assessment schemes and respond to the needs of the market to ensure that the building design community, and particularly those with little or no LCA expertise, can continue to use the information contained in EPD to make informed choices. Any such approach will be based on industry standards.