

Addressing BRCW#7 in the CPR – CEN/ TC 33

Briefing Paper

Introduction

The EU Construction Products Regulation (CPR) includes seven “Basic Requirements for Construction Works” (BRCW). BRCW#7 is “Sustainable use of natural resource”, which states (European Union, 2011):

“The construction works must be designed, built and demolished in such a way that the use of natural resources is sustainable and in particular ensure the following:

- a) reuse or recyclability of the construction works, their materials and parts after demolition;*
- b) durability of the construction works;*
- c) use of environmentally compatible raw and secondary materials in the construction works.”*

In 2018, the European Commission started work with several CEN Technical Committees with a view to addressing BRCW#7 in their new “Standardisation Requests”, which will replace existing Mandates for the development of harmonised product standards in support of the CPR.

CEN/ TC 33 (Doors, windows, shutters, building hardware and curtain walling) is one of the Technical Committees that has been developing a new Standardisation Request and assessing the implementation of BRCW#7.

This Briefing Paper has been produced by European Aluminium and FAECF and are in line with the generic recommendations discussed and agreed within the Metals for Buildings alliance

Headline position

- We support the harmonisation across European Union Member States of the assessment and declaration of the sustainability of building products for the purposes of CE marking, addressing BRCW#7.
- The approach should be harmonised on a top-down basis, applicable to all products and accepted by all product Technical Committees, to secure a level playing field for all building products in Europe; it is essential that the same methodology and core indicators are reported by all product types.
- This is a challenging topic. The European Commission should establish a BRCW#7 stakeholder platform to develop a robust BRCW#7 methodology, to be accepted and used horizontally across all construction products and Member States.
- The basis for the declaration for BRCW#7 should be the recently amended version of EN 15804 (European Committee for Standardization, 2019). In June 2019 the amended version of EN 15804 was voted positively and it was published on 30 October 2019. Here, Modules A, C and D are mandatory.
- Therefore, we recommend that one essential characteristic for “sustainability – mandatory” is created from LCA information as a table of the mandatory core environmental impact indicators for Modules A, C and D only, in accordance with the recently amended version of EN 15804. The core environmental impact indicators are listed in Annex A.

- An additional essential characteristic collating non-mandatory information in accordance with EN 15804 could be added if relevant (e.g. labelled “sustainability – non-mandatory”). This could include core environmental impact indicators for Module B (use phase), for example B2 (Maintenance) and B3 (Repair).
- The additional environmental impact indicators given in EN 15804 should not be included. They are optional in the revised standard and have a high degree of uncertainty. The provision of specific guidance related to the product group is essential to implement EN 15804 in a robust manner. Hence, the availability of complementary Product Category Rules (cPCR) specific to the product(s) in question is critical; these should be assessed and approved by independent experts, not the product TC alone.

Other issues to be addressed

Would it be useful to mandate declaring Module B (use phase) information?

No, for two main reasons.

Firstly, Module B is not mandated in the revised version of EN 15804, unlike Modules A, C and D which are mandated in the revised version. This is based on extensive debate between stakeholders including the European Commission, LCA experts within CEN/TC 350 and within the national mirror committees.

Secondly, for glazed products in scope of TC 33 such as windows and curtain walling, the Module B results will depend on their integration into the building in question and unique factors such as their precise orientation and the local climate. Therefore, any information developed for Module B using a “standard” scenario will at best be misleading and, at worst, lead to the selection of sub-optimal solutions that are not best for the environment. It is worth noting that the draft cPCR for windows (prEN 17213) sets out default scenarios for B2 (Maintenance) and B3 (Repair) only with respect to Module B; it also sets out in Annex C how to calculate the use stage (B1) based on a user-specific scenario using the energy balance calculation, noting that this is voluntary and to be calculated for the individual building.

Can product TCs be solely responsible for developing their specific rules and guidance?

No! While product TCs should be in charge of developing PCR and scenarios for their products, it is important to have an independent body validating such specific rules and scenarios since they may have significant impact on the final results to be reported in EPDs. For example:

- the product type as defined in the CPR may not be aligned with the declared unit according to EN 15804
- the Reference Service Life has a huge impact on the results and requires a harmonised approach within the same product group
- the development of harmonised scenarios is needed to allow for the exchange of product data for building calculations
- the background datasets used for issues such as transportation and maintenance could also result in different final values if not harmonised.

Hence, we strongly recommend that a BRCW#7 stakeholder platform is developed under the leadership of the European Commission in order to set out the appropriate framework and guidance to address these issues consistently.

How could robust scenarios be developed?

As Modules C and D are mandatory, robust and transparent scenarios for end-of-life are needed. For some materials (e.g. metals) it should be possible to develop horizontal end-of-life default European scenarios that reflect their intrinsic economic value. For products comprised of one material it may be possible to present various “100% end-of-life” scenarios, to be reported in the Declaration of Performance (e.g. 100% incineration, 100% landfill, 100% recycling), so that specific scenarios can then be modelled (e.g. 10% incineration + 45% landfill + 45% recycling). For multi-material products (e.g. windows), we do not believe that this technique is appropriate due to its complexity and the need for additional calculation. However, there is a need for an independent verification and approval of the end-of-life scenarios that are developed for multi-material products, and the process should be determined by the BRCW#7 stakeholder platform, referenced above.

How should all the information be presented?

The likely large amount of environmental indicator data needed to address BRCW#7, as indicated in Annex A, promotes the use of electronic media rather than hard copies. The incorporation of essential characteristics under BRCW#7 in CE marking therefore presents an opportunity to develop further the use of smart CE marking, as proposed by Construction Products Europe (CPE). There is also a need to liaise with work underway in CEN and ISO concerning Building Information Modelling (BIM) and with ISO/TC 59/SC 17 that is developing standards to make EPD data available in BIM.

What will the additional cost be for SMEs?

A significant amount of data are needed to produce an EPD. Hence there is a cost associated with obtaining that data and ensuring that they are representative, which could require a third-party. The cost implications for SMEs need to be fully assessed against the benefits to the market and wider environment. In addition, EPD must be verified by an independent third party in accordance with ISO 14025. An EPD programme operator will register and publish the EPD, also usually for a fee. An EPD is valid for five years, after which it must be reviewed and verified again, although it should not need to be recalculated if the underlying data have not changed significantly.

However, most SME manufacturers will be familiar with the concept of “cascading” data for the purposes of CE marking. Therefore, it should be possible for a systems company to provide LCA data for the relevant product and/or product family, using appropriate end-of-life scenarios that their customers could use in their DoPs.

Several national trade associations have produced “average” or “collective” EPD for their members, depending on national annexes to EN 15804 that may apply, and their applicability for the purposes of BRCW#7 should be assured.

The European Commission should consider also how simplified procedures in the CPR could best allow SMEs to declare verified performances against BRCW#7 at an affordable cost, e.g. taking inspiration from Article 36 of the CPR. Article 37 allows the use of simplified procedures by micro-enterprises under certain circumstances. Given the complexities referred to above, careful consideration must be given to this, and we question whether micro-enterprise should be able to declare environmental performance according to BRCW#7 without any third-party verification.

Which AVCP system should be used?

This needs further consideration.

In the current EPD system, input data, product specific life cycle scenarios, calculation software and the results are subjected to third party verification. EPD creation requires in-depth data collection

and a relatively complex treatment of the data, hence there is usually a need for external assistance and expertise, especially for SMEs. However, the role of third-party verification according to the revised version of EN 15804 and ISO 14025 does not match with any of the existing CPR AVCP systems and the role of Notified Bodies.

Hence, considering the difference of essential characteristics under BRCW#7 compared with other product characteristics, a more in-depth analysis and discussion is needed to define the most appropriate Assessment and Verification of Constancy of Performance (AVCP) system to be used for the purposes of BRCW#7. This should be carried out by the BRCW#7 stakeholder platform, referenced above. Such a forum will allow for experiences across Europe to be shared and to address issues such as the use of digital systems for more cost-effective creation and verification of the data.

References

European Committee for Standardization, 2019. *EN 15804:2012+A2:2019 - Sustainability of construction works. Environmental product declarations. Core rules for the product category of construction products*, Brussels: European Committee for Standardization.

European Union, 2011. *Regulation (EU) No 305/2011 of the European Parliament and of the Council*, Brussels: Official Journal of the European Union.

About

European Aluminium, founded in 1981 and based in Brussels, is the voice of the aluminium industry in Europe. We actively engage with decision-makers and the wider stakeholder community to promote the outstanding properties of aluminium, secure growth and optimise the contribution our metal can make to meeting Europe's sustainability challenges. Through environmental and technical expertise, economic and statistical analysis, scientific research, education and sharing of best practices, public affairs and communication activities, European Aluminium promotes the use of aluminium as a material with permanent properties that is part of the solution to achieving sustainable goals, while maintaining and improving the image of the industry, of the material and of its applications among their stakeholders.

FAECF, la Fédération des Associations Européennes des Constructeurs de Fenêtres et de Façades (the European Federation of National Window and Curtain Walling Manufacturers' Associations), was founded in 1968. The main objectives of FAECF are to promote and defend the European fenestration industry in its chosen markets. It contributes to harmonization in fenestration standards and provides technical information to the value chain.

Annex A – Indicators from EN 15804

Core environmental impact indicators

- Global Warming Potential total (GWP-total)
- Global Warming Potential (GWP-fossil)
- Global Warming Potential (GWP-biogenic)
- Global Warming Potential land use and land use change (GWP-luluc)
- Depletion potential of the stratospheric ozone layer (ODP)
- Acidification potential, Accumulated Exceedance (AP)
- Eutrophication potential, Fraction of nutrients reaching freshwater end compartment (EP-freshwater)
- Eutrophication potential, Fraction of nutrients reaching freshwater end compartment (EP-marine)
- Eutrophication potential, Accumulated Exceedance (EP-terrestrial)
- Formation potential of tropospheric ozone (POCP)
- Abiotic depletion potential for non-fossil resources (ADP-minerals&metals)
- Abiotic depletion potential for fossil resources (ADP-fossil)
- Water (user) deprivation potential, deprivation-weighted water consumption (WDP).

The environmental impact indicators for waste, resource use and output flows are also described in EN 15804, as listed below. However, because the methodology to calculate some of them is not yet agreed, we do not think they should be incorporated into the CPR at this time, maintaining the focus on the core indicators above.

Environmental impact indicators describing waste categories

- Hazardous waste disposed
- Non-hazardous waste disposed
- Radioactive waste disposed.

Environmental impact indicators describing resource use

- Use of renewable primary energy excluding renewable primary energy resources used as raw materials
- Use of renewable primary energy resources used as raw materials
- Total use of renewable primary energy resources (primary energy and primary energy resources used as raw materials)
- Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials
- Use of non-renewable primary energy resources used as raw materials
- Total use of non-renewable primary energy resources (primary energy and primary energy resources used as raw materials)
- Use of secondary material
- Use of renewable secondary fuels
- Use of non-renewable secondary fuels
- Use of net fresh water.

Environmental impact indicators describing output flows

- Components for re-use

- Materials for recycling
- Materials for energy recovery
- Exported energy.