



Ecodesign for Sustainable Products

Public Consultation Response

Submitted by: RKD, an international architectural firm driven by design thinking
Submitted to: The Departments of Enterprise, Trade and Employment, and Environment, Climate and Communications

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Summary

Overview

In response to the Departments' of Enterprise Trade and Employment (DETE) and Environment, Climate and Communications (DECC) request for "help to inform the Irish position on negotiations on the EU Commission's Proposal for a Regulation on Ecodesign for Sustainable Products" RKD welcomes the opportunity to make a submission on the proposal.

The DETE have referenced 5 main features of the proposal, from which we have extracted 5 themes forming the key sections of our submission.

RKD support the development of a **consistent** EU-wide **approach** for the assessment of sustainable construction- and building-related products which will promote the **procurement of sustainable** products that live their **intended lifetimes** and which embed transparent **information**.

Scope and significance

As an architectural practice, our focus in this submission is on building-relevant products and materials. We do not include commentary on other products outside the scope of our expertise. That said, the construction and operation of the built environment is significant in its own right. It is estimated to account for ~40% of all energy-related GHG emissions [1] while it consumes approximately ~50% extracted raw materials and is responsible for ~33% of global waste [2].

Since we are concerned with construction products, and since the ESPR proposal references the proposal to amend the Construction Products Regulation (CPR) and how both proposals are interlinked, our feedback extends to this CPR regulation and how it relates to the ESPR (In particular please refer to Section 5 – Consistency).

	The Dept of Enterprise Trade and Employment listed feature	Theme
1	a framework to set requirements – via delegated acts – for how products should be made	Approach
2	requirements to provide information on the environmental sustainability of products – digital product passports will enable products to be tagged, identified and linked to information relevant to their circularity and sustainability	Information
3	putting a stop to the destruction of unsold consumer goods	Intended lifetime
4	promoting and procuring more sustainable products	Sustainable procurement
5	designed to be coherent and aligned with existing and future sectoral legislation and policies (for example, the Commission's strategy for sustainable textiles and the Construction Products Regulation)	Consistency

01 Approach

“a framework to set requirements – via delegated acts – for how products should be made”

Our comments in response to this selected feature are in relation to the approach proposed, as well as specifically in relation to the planned approach to repeal Directive 2009/125/EC.

On the proposed approach

First, we would like to draw attention to where the development of a framework to set requirements for “how products should be made” is cited. It seems that the proposal is about specifying mandatory performance and information requirements rather than specifying ways to produce products. We believe this subtle, but important, difference should be noted when the Departments are formulating their notes. A framework that creates a preference for sustainably-sourced, information-rich products enables innovation while driving negative environmental metrics down.

Article 5 lists 14 aspects the proposed requirements should address, ranging from durability to recycled content. The list presented is comprehensive and if all products were to embed information which would address each of these 14 aspects there would be an obvious information enhancement and therefore greater ability to make a decision about a product’s next stage in life. Article 5 goes on to note that product groups will be formulated, and where wider product groups with technical similarities can be formed, that they will.

It is important, however, that the requirements for each category of product do not unnecessarily overburden the manufacturer and result in backlash that would slow down the progress. As such, the selection of appropriate requirements for each defined product group is crucial.

Using embodied efficiency labels (Conceptualised in Figure 1)

One suggestion might be to upgrade the current energy efficiency label to include embodied and lifecycle efficiencies, as well as operational efficiencies.

- These broader score-based messages could be used for public communication.
- For each product group, a carefully defined set of tests and criteria would be used in the background to establish what that product scores on embodied, operational (if necessary) and hence overall efficiency.
- Additionally, an increasingly stringent threshold could be set so that underperforming products can no longer be manufactured. These products should be allowed to be sold (just not manufactured) as to destroy them would be a contradiction to other items in the ESPR proposal.



Figure 1. Conceptualising a life cycle efficiency label

Repealing Directive 2009/125/EC

In the context of energy-related products there is a note that the current Ecodesign Directive is to be repealed. The Department should use this as an opportunity to request a revision of the standards for heat pump performance assessment.

The Irish Government are planning to install 600,000 heat pumps over the next decade. This shift towards an electrification of heat (by way of heat pumps) is cited as one of the core solutions required for Ireland to decarbonise the heating sector [3]. This planned shift to electrify our heating requirement in Ireland, as well as other heating-dominated countries, means that the accuracy of energy labels relating to heat pumps are more relevant than ever.

A study published in 2021 [4], revealed that current European standards which were originally developed to establish product energy ratings in central European locations [5] are potentially misrepresenting actual performance in Ireland and other countries with similar climates. These findings aligned with an earlier simulation-based study which suggested a revision of heat pump product energy ratings was required [6].

We therefore recommend that as the EC plan to revisit the Ecodesign directive that they pay close attention also to the standard for product rating of heat pumps specifically.

Furthermore, and related to Figure 1, the heat pump’s energy label should be expanded to include not only its operational efficiency but also the embodied environmental impacts of its components and refrigerant. One study found that the refrigerant leakage accounts for up to 90% of the total embodied impact of a heat pump [7], while an Irish study found that in one deep retrofit upgrade the heat pump (including refrigerant leakage) accounted for more than 50% of the embodied carbon of the entire retrofit [8].

02 Information

“requirements to provide information on the environmental sustainability of products – digital product passports will enable products to be tagged, identified and linked to information relevant to their circularity and sustainability”

More information = more informed decision making

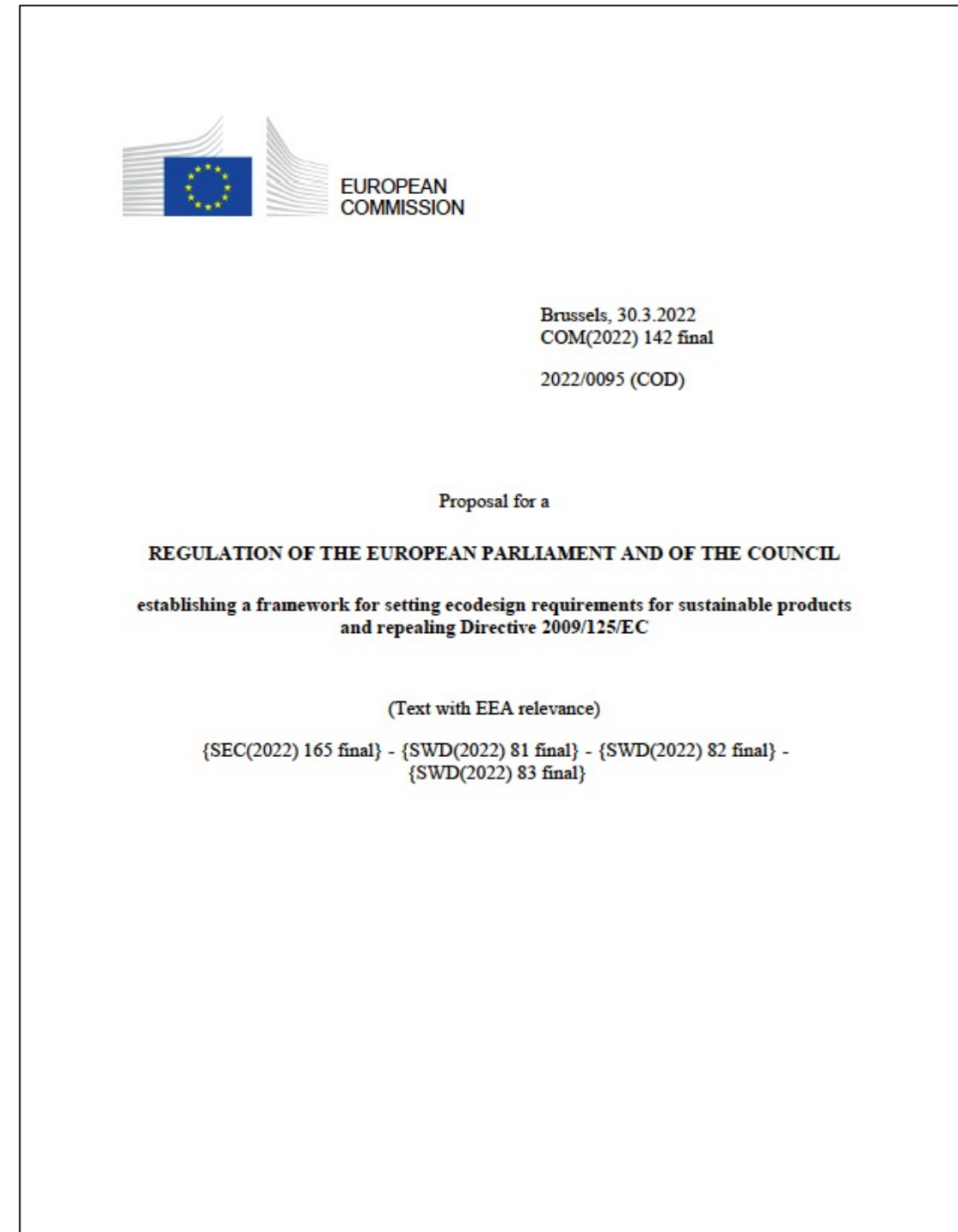
Access to a greater wealth of information (e.g. embodied carbon, durability etc.) for a given product enables better decision making at end-of-life, whether that be the potential disposal, reuse or extension of the product. RKD support the proposal to increase the transparency of specific products through the use of a Digital Product Passport (DPP) which we believe would increase certainty over a product’s lifetime and ultimately enhance the circularity of that product.

Digital Product Passports would facilitate the use of material exchange platforms, streamlining of by-product and end-of-waste classification, remanufacturing, and other means of documentation of phases of use in the lifecycle of a product to help ensure it remains outside of the waste stream, and in a closed loop of use and reuse for as long as possible.

As designers, rather than producers/manufacturers, we welcome the addition of further information but believe that once product categories are established, relevant manufacturers should be given an opportunity to respond to the specific information that will be asked of them.

Aligning information with Environmental Product Declaration (EPD) systems

With regard to environmental information, which currently exists voluntarily in the most part, the EPD system has proven to be quite successful at capturing and verifying the environmental impacts of products. Many manufacturer’s are willing to invest time and effort into conducting LCAs. Given the success of this system, it would seem logical to streamline the EPD system with the ESPR proposal. This will have an additional advantage in that those manufacturers who have already made voluntary steps forward to communicate the environmental impact of their products get rewarded. In relation to Ireland, the IGBC, who manage the EPD Ireland program, as well as the EPA circularity team should be proposed as objective stakeholders for Ireland.



03 Intended lifetime

“putting a stop to the destruction of unsold consumer goods”



Above | Photo credit: Javier Graterol

RKD back the proposal to end the destruction of unsold consumer goods and encourage the minimisation of short-lived products generally. This point aligns with Article 5 of the EC’s proposal for ESPR which (among other listed metrics) aims to enhance a products durability, reliability, reparability, and reusability.

How long should a product last?

A thought provoking paradigm is raised by Hart et al. [9] in their paper “A Circular Economy: Where Will It Take Us?” where they question the benefits of designing a product to last indefinitely. To do so would be to predict the needs of future generations. A better approach might instead be to focus on designing, manufacturing, and constructing products that serve their intended lifetimes. Over-engineering products will increase the upfront embodied emissions and material requirements. The products should therefore instead be designed with a vision to be adaptable so they may be disassembled and/or reused in the future. Consequently the use of recyclable materials should be rated accordingly.

Devising reliable metrics to predict a product’s durability is a huge engineering challenge. Product durability depends on internal variables within the material as well as external variables (especially relevant for products that are designed for the ever-changing outdoor conditions). The commission should consider introducing a funding stream specifically aimed at enabling researchers reduce the amount of unknown variables related to the durability of products and therefore better predict the life cycle of products.

Furthermore, a products lifetime should not be determined by the software required to run it. The lifetime of software should be developed to match the life of hardware and visa versa.

On remanufacturing

A standout issue with reuse is that there isn’t a willingness to assume the risks associated with specifying something second hand, primarily because of a lack of (or outdated) certification. The creation of a framework for product testing and hence recertification could enable the reuse of products still fit for (a) purpose. CRNI, ReMark and Rype (UK) are suggested as key stakeholders that should be consulted and whom could offer valuable insights on this topic.

04 Sustainable procurement

“promoting and procuring more sustainable products”

This theme has two parts; one is the procurement of sustainable products and the second is the promotion of those sustainable products.

With regard to the procurement itself, RKD already support the procurement of sustainable products for buildings by specifying products with EPDs where possible. This ESPR proposal is welcomed as it will provide a framework for all members to follow and create a common playing field when it comes to sustainable procurement. As mentioned in other themes listed here, we recommend the inclusion of EPD Ireland as a stakeholder who are currently leading the way with regard to voluntary sustainable procurement. Their system is additionally one of the better and more accessible ones in Europe and could be used as an exemplar for ease-of-access.

In terms of promoting public procurement, access to information is the key. A website which provides links to informative third party websites would be a helpful way to promote sustainable products. For example, in relation to building materials, the following selection of sources could be considered:

- [Materials 2050](#)
- [Greenspec](#)
- [Mindful Materials](#)
- [Ecoplatform](#)
- [EPD Ireland](#)
- [Inside/Inside](#)
- [Shareyourgreendesign](#)



Above | Photo credit: Kindfolk

05 Consistency

“designed to be coherent and aligned with existing and future sectoral legislation and policies (for example, the Commission’s strategy for sustainable textiles and the Construction Products Regulation)”

It is imperative that the proposal aligns with both existing and future legislation. Failure to align with existing legislation will result in an inconsistent rulebook and a subsequent incomparable market of products.

On reference to the Construction Products Regulation and its revision

Reference to the fact that construction products will be covered in the revised Construction Products Regulation (No 305/2011) [10] and that “only when the obligations created by [the revised Construction Products Regulation] and its implementation are unlikely to sufficiently achieve the environmental sustainability objectives pursued by this Regulation” is a bit ambiguous.

There is a fear that if the CPR does not meet the requirements set out by the ESPR, that almost half of all materials used (i.e. in construction) will not be adequately addressed.

We propose a harder line connecting both the CPR and ESPR together be drawn.

On the proposal to revise the CPR itself

If the connection between the CPR and ESPR is left ambiguous, the onus on the CPR to address its current environmental shortcomings becomes even greater.

A lack of a single market for construction products is cited as a significant obstacle restricting innovative lower-carbon solutions finding their way to the market. The alternative route is to obtain CE Marking following EOTA, a route which could slow the adoption of an environmentally friendly alternative product.

When it comes to addressing climate change, speed is critical. Limiting global warming to well below 2°C is a time dependent challenge. The sooner we can make positive changes the sooner we stop releasing carbon emissions.



Above | Photo credit: Uve Sanchez

In the case of concrete, the second most consumed substance on the planet (after water), a harmonized standard does not yet exist. Although harmonized standards exist for the individual ingredients (cement, slag, aggregates etc), an EU harmonized for the concrete itself does not exist. Consequently, individual nations specify different criteria. An important criteria that impacts the global warming potential of concrete, is the minimum limit on cement content. There is inconsistency across Europe on the minimum amount of cement required in a concrete mix to survive a certain period of time for a given exposure class (i.e. where the concrete will be located). Why does concrete made in Ireland need to have more cement than concrete made in Germany and used for the same purpose? Questions on the cement content limits need to be addressed. This concrete-specific point is interlinked to an earlier recommendation in our document for a stream of research funding that would objectively review the literature on product durability, fill in any gaps and propose a roadmap for product specification.

The Energy Performance of Buildings Directive’s (EPBD) is cited in the CPR, referencing the “importance” of conducting LCAs of new buildings, as of 2030. This is too late. An accurate benchmark is urgently needed so that we can begin to set meaningful targets on what environmental impacts a building is currently responsible for and what it should be responsible for going forward. The Part-Z proposal [11] should be seriously considered in the ESPR and CPR revisions.

References

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