Fact sheet

Recycling in Environmental Product Declarations (EPD): Why is Module D important for metals and the Circular Economy?

May 2019

The standard EN 15804 defines the core rules to develop EPD in Europe. This standard uses a modular approach for the three product life cycle stages: production (Module A), in use (Module B) and end-of-life stage (Module C), combined with a cut-off rule which does not allow consideration of the recycling aspects from a full product life cycle. As a result, a complementary Module D is included to consider the additional aspect of recycling which is not addressed through the recycled content metric. As an example, for a metal product made of 40% recycled metal which is recycled at a rate of 90% at end of life, Module D reports the additional benefits resulting from the 50% of recycled metal which is not addressed by the recycled content approach.

Module D is then complementary to Modules A to C and provides an overview of the recycling performance and benefits for the full product life cycle. Hence, it is a key element in supporting an environmentally-sound circular economy in the building sector

Metal recycling saves not only significant abiotic resources but also huge amounts of energy since it saves between 60% to 95% of the energy compared to primary production. With the current political focus on resource efficiency and circular economy, the proper consideration of recycling aspects within Environmental Product Declaration (EPD) is then essential. In this respect, two contrasting approaches are generally used: the **recycled content approach** and the **End-of-Life (EoL) recycling approach**.

On one hand, the **recycled content approach** uses a cut-off rule which considers recycling from a unique production angle, i.e. based on the fraction of the recycled material used in the production phase of the product. Situated at the beginning of the supply chain, i.e. at the manufacturing stage of a product, this approach neglects the recycling performance of the studied product at the end of life stage.

On the other hand, the **End-of-Life (EoL) recycling approach** considers the benefits of recycling based on the fraction of the material available at end of life, which is recycled into a new product. Hence, this approach considers the End-of-Life recycling rate of the studied product or material as the key parameter. For metal products, the End-of-Life recycling rate corresponds to the actual amount of metal obtained from recycling with the amount of metal theoretically available at the end of the life of a product, including metal losses during use, collection, scrap preparation and melting. Today, **the End-of-Life recycling rate of most metal building products reaches 90-95%,** thanks to their intrinsic physical properties and economic value, which is a key incentive for collecting them at renovation or demolition sites.

For metal products, the **metal industry recommends using the End-of-Life recycling approach** since it directly reflects the specific recycling performance of a metallic product independently from market growth or its lifespan. Within the corresponding Life Cycle Assessment (LCA) methodology, the recycling benefits are then calculated based on the proven and documented end of life recycling rate.

The metal industry does not recommend using the recycled content approach which is not related to the product life cycle. For example, metal scrap can be issued from other metal products or markets.

In addition, the **two metrics are usually very different for metal products, especially in the building sector**. Despite of an end-of-life recycling rate of metal building products which is very high, the recycled content does not on average reach such a level. In reality, the level of recycled content is currently limited by scrap availability which is a bottleneck of the supply of recycled metal. Indeed, the upper limit of what is recycled today is governed by what was produced in the past. The rapid growth in the use of metals over many years and the fact that metal building products typically have a service life of decades means that there is a limited quantity of metal scrap coming from buildings. As there is insufficient recycled material to satisfy the growing demand, virgin material has to be used as well. Hence, the average recycled content in metal supply is still today relatively limited, usually between 40 and 60%. This shows that the recycled content metric is not appropriate to consider the full aspects of the recycling of metal building products.

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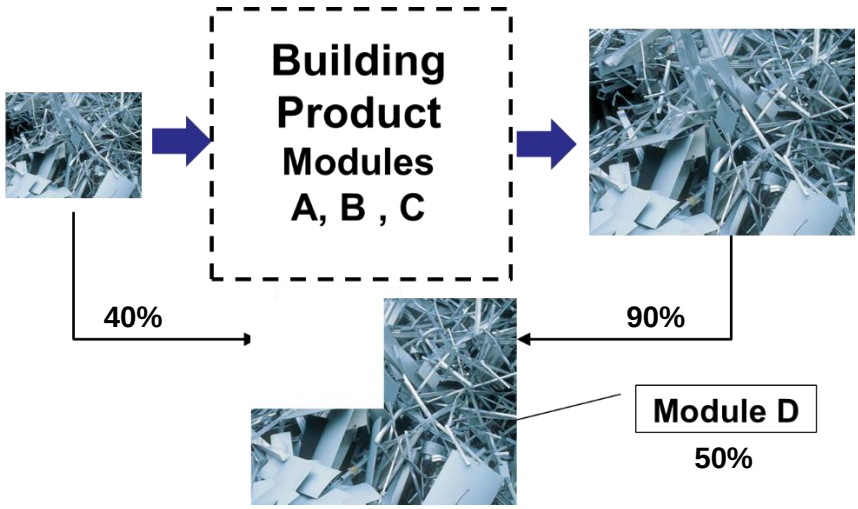

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Aware of the importance of the end of life stage and the associated recycling benefits, in 2016 the European Commission mandated an amendment to EN 15804 where both Modules C and D are compulsory. This obligation will contribute to acknowledge materials which are efficiently recycled at end of life with environmentally sound benefits for society.

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