

Use of the BY-Low-Carbon Classification® in Calculating the Carbon Footprint of Buildings in Finland

The carbon footprint of building materials is generally calculated using environmental product declarations (EPDs). For concrete, the BY-Low Carbon Classification® is a substitute and often more effective way of reporting climate emissions. The BY-Low Carbon Classification® meets all the requirements set by the authorities for calculating the carbon footprint.

The BY-Low Carbon Classification® is a national procedure maintained by the Finnish Concrete Association for determining and reporting the climate emissions of concrete. It was introduced in 2022 and covers ready-mixed concrete and also concrete used in concrete elements, blocks and landscape concrete products.

The BY-Low Carbon Classification® has been introduced because the number of different product variations in concrete products is considerably large and therefore reporting climate emissions using environmental declarations would either result in a huge number of declarations or in the declarations covering a large number of different products. In the latter case, the environmental declaration would be too imprecise.

The emission calculation in the BY Low-Carbon Classification® is based, like the EPD, on the standard SFS-EN 15804:2012 + A2:2019. Thus, the carbon dioxide emissions of a product are calculated in the same way as in EPDs. The BY Low-Carbon Classification® is third-party verified and, unlike EPDs, also includes third-party quality assurance of production.

The new Construction Act will require from the 1st of January 2026 onwards the determination of the life cycle climate emissions of new buildings over a 50-year review period. The official explanatory memorandum of the regulation states that a voluntary, product group-specific calculation method may be used if it complies with key life cycle assessment standards, is third-party verified, is widely accepted and used in the industry, and its baseline values and calculation formulas are public. The BY Low-Carbon Classification® meets all these requirements and is also specifically mentioned in the memorandum as an acceptable method for preparing a climate report.

In summary, the BY-Low Carbon Classification® is at least as suitable for calculating the carbon dioxide emissions of buildings as EPDs. The BY-Low Carbon Classification® is product, manufacturer and factory specific, while environmental declarations are often made for a product group, several products or several manufacturing sites. Thus, the BY-Low Carbon Classification® provides the most accurate information on the climate emissions of concrete. In the case of concrete, the accuracy of the calculation is particularly important, since a very large part of the mass of a typical building is concrete.

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