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**KNAUF**INSULATION

# THE RISE AND RISE

## OF BUILDING LIFE CYCLE ASSESSMENTS

### ENVIRONMENTAL PRODUCT DECLARATION

in per ISO 14025 and EN 15924

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Whole building Life Cycle Assessments (LCAs) are set to transform the construction industry.

# THE RISE AND RISE

## OF BUILDING LIFE CYCLE ASSESSMENTS

You may have built the most exciting Nearly-Zero-Energy-Building on the planet, but if that building used up valuable resources from half away around the world and will be buried in a landfill grave when it is demolished this is clearly not sustainable best practice.

That is why national regulation, Green Building Rating Systems and European Commission initiatives are now taking a life cycle approach to entire buildings – from the material sourcing, manufacturing and use of every building component to their ultimate disposal.

And they have to. Buildings use 40% of Europe's energy, emit 36% of its CO<sub>2</sub>, use 50% of extracted materials and generate a third of waste. The good news is that with the rise and rise of digital tools it is becoming easier to assess the environmental impact of entire buildings across their life cycles and, as the saying goes, if you can measure it you can manage it.

At Knauf Insulation we have used Life Cycle Assessments (LCAs) for our products for many years and we produce Environmental Product Declarations (EPDs) that document their environmental impact at every stage. We are not alone. Other far-sighted companies are now also producing EPDs for their products.

This means that the life cycle impact of every building element from windows, flooring, piping, building materials and every other component can be fed into algorithms to understand the overall impact of a building.

And as more digital resources become available we should make maximum use of them. It may sound like science fiction to more traditional sectors of the construction industry, but full Life Cycle Assessments of buildings will become the new normal. Here is what you need to know:

### LCAS FOR ENERGY USE AND CO<sub>2</sub> IN FRANCE

Full LCAs of a building's energy consumption and CO<sub>2</sub> will be mandatory for the country's 2020 Building Code and EPDs are compulsory for products that claim to be environmentally responsible. These details – known as Fiches de Données Environnementales et Sanitaires or FDES – are stored in INIES and BDR online databases where all FDES are publicly available for download.

**How we can help:** These databases will be a vital resource when the code is introduced. Updated FDES for Knauf Insulation solutions are available on the INIES database and can be already utilised during the pilot phase of the E+/C-labelling (énergie positive/réduction carbone).

### MANDATORY BUILDING LCAS IN GERMANY

LCAs for federal public buildings are mandatory using the Okobaudat LCA indicators database and the BNB Assessment Scheme. The database is also used by the German Sustainable Building Council – Deutsche Gesellschaft für Nachhaltiges Bauen or DGNB – to promote sustainable building. DGNB assesses the sustainability of buildings and urban districts using global benchmarks.

**How we can help:** Our EPDs are created by the independent organisation IBU which has a direct link with Okobaudat enabling the information to be easily accessed.

### CALCULATING ENVIRONMENTAL IMPACT IN THE NETHERLANDS

Building environmental impacts calculation through LCA has been made mandatory with the building permit for few years now. Since January 2018, a maximum threshold building LCA impact value by m<sup>2</sup> by law has been published. Our environmental product sheets are implemented in the Dutch calculation tool NMD (National Environmental Database).

**How we can help:** Our EPDs are implemented in the NMD and are available in our website.

### 2025 DEADLINE IN FINLAND

The country has promised mandatory building LCAs by 2025 at the latest. Private companies in Finland are selling a complete solution from product level LCA to building LCA in one click.

**How we can help:** Our green teams can provide EPDs for our products as well as building LCA expertise. We are also involved in Green Building Council events related to this theme and recently participated in a GBC Finland workshop on the future of Finnish legislation and the inclusion of building LCAs.

### SUBSIDIES FOR BUILDING LCAS IN AUSTRIA

Subsidies are allowed if an LCA is carried out for buildings and a reference target is achieved. LCA data is available via the Baubook database. Product points are calculated and combined using software to create a full building LCA. Buildings with low numbers receive subsidies.

**How we can help:** Information about our Wood Wool Heraklith products, for example, is available on Baubook.

### NEW LCA TOOL LAUNCHED IN BELGIUM

TOTEM was launched in Belgium in early 2018 and is designed to calculate the environmental impact of construction elements and entire buildings across their life cycle.

**How we can help:** Jean-Pierre Pigeolet, our Products and Buildings Sustainability Manager, was a guest speaker during the launch of TOTEM at Belgium's biggest construction fair Batibouw. Our EPDs will be linked to the new Belgian EPD database.

### PROJECT FOR EUROPEAN CHANGE

A new pilot project called Level(s) to assess the sustainability of buildings across their entire life cycles – taking into account elements such as resource use, emissions and energy use – was launched by the European Commission in 2017. Building LCA is also included in the criteria of the framework.

**How we can help:** We are contributing research to the project through our new Knauf Insulation Experience Centre in Slovenia. We believe the initiative is important because it could pave the way for EU-wide environmental performance regulation for buildings.

# BUILDING LCAs AND GREEN SCHEMES

Specifiers can maximise points in Green Building Rating Schemes by providing Life Cycle Assessments (LCAs) and Environmental Product Declarations (EPDs) – and many reward a full life cycle approach to buildings.

DGNB, for example, takes this approach and for some criteria it requests the life cycle environmental impact of an analysed building to be compared with similar buildings with reference values. Points are awarded for improved performance.

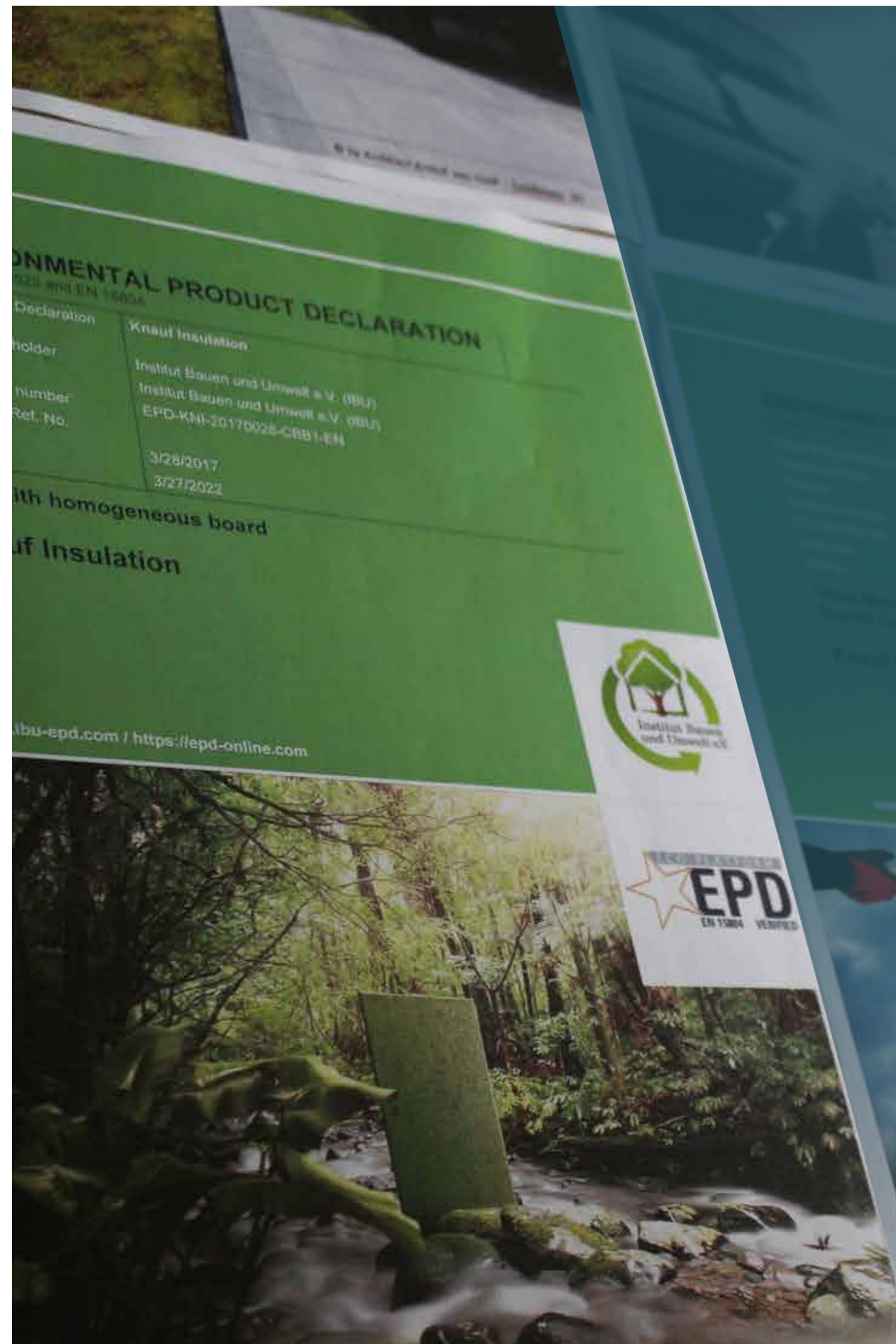
HQE rewards the use of building LCA tools such as Elodie that makes it easier to perform an LCA of a building. LEED and BREEAM ask for LCA building criteria to be compared with a baseline building and also award points for buildings using products with EPDs.

- At Knauf Insulation our sustainability team is fluent in the language of all major building rating systems and can help specifiers achieve maximum points with our solutions.



For further information visit:

[www.eurima.org](http://www.eurima.org) and their section on building and  
[www.knaufinsulation.com/sustainability/product-sustainability](http://www.knaufinsulation.com/sustainability/product-sustainability)





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