

How DGNB and EMICODE® join forces to promote Green Building



Introduction

Both the DGNB and the EMICODE® represent two distinct yet complementary systems that together point the way towards more sustainable buildings.



The German Sustainable Building Council DGNB pursues a holistic assessment and certification approach that considers ecological, economic and social aspects over a building's entire life cycle.

The EMICODE®, on the other hand, focuses on the evaluation and classification of building materials with regard to their emissions, in particular volatile organic compounds (VOCs). The classification into different emission classes helps architects and planners to select low-emission materials so they can ensure a healthy indoor climate and, consequently, long-lasting living comfort for the residents.

Thanks to this synergy, a sustainable building concept emerges that not only meets high ecological standards but also puts emphasis on the quality of the materials used.

The use of EMICODE®-certified building materials makes it possible to specifically meet the DGNB's strict sustainability criteria – whether for new construction projects or for the modernization of existing buildings. At the same time, it ensures the quality of building materials with respect to their functionality and durability.

This integrated strategy is a prime example of how today's construction industry can create truly sustainable, future-proof buildings by combining various certification systems.

The DGNB

The German Sustainable Building Council (DGNB e.V.) was founded in 2007 and is a non-profit organization dedicated to promoting the sustainable construction and operation of buildings. It has established itself as a leading institution in the field of green building in Germany and Europe and sets standards for the design, construction and operation of sustainable buildings.



The DGNB has identified several key objectives and tasks:

Promotion of sustainable construction

The DGNB is committed to ensuring that buildings are constructed and operated in an environmentally friendly, economically viable and socially responsible manner. It develops and disseminates comprehensive criteria and standards for sustainable construction.

Certification

The DGNB provides, among others, a certification system for sustainable buildings and districts. These certificates serve as proof of high ecological, economic and socio-cultural quality.

Consultancy and further education

The DGNB offers consultancy and further training for architects, engineers, building contractors and other professionals. Through seminars, workshops and training courses, it imparts knowledge and expertise in the field of sustainable construction.

Research and development

The DGNB takes part in research projects and works on the further development of standards and technologies for sustainable construction.

Public Relations

The DGNB informs and raises public awareness of the significance of sustainable construction and encourages the exchange of knowledge and experience.

www.dgnb.de



The DGNB certification system is one of the most advanced in the world and takes a wide range of criteria into account, including:

Environmental quality

Energy efficiency, resource conservation, environmental compatibility

Economic quality

Life-cycle costs, economic viability

Socio-cultural and functional quality

Comfort, health, safety

Technical quality

Building materials, construction technology, maintenance

Process quality

Planning, construction process, commissioning

The system is flexible and can be applied to various types of buildings and districts, including residential buildings, office buildings, educational facilities and urban districts.

The DGNB's work has a significant impact on the construction industry and contributes to sustainable development. Through its standards and certifications, it creates incentives for sustainable construction and promotes innovation in the building sector. It helps improve the quality and sustainability of buildings and supports the transition to a built environment that is more environmentally friendly and also more livable.

The GEV

The German Association for the Control of Emissions in Products for Flooring Installation, Adhesives and Building Materials (GEV) is an association of leading manufacturers of building products committed to protecting human health and the environment. Being founded in 1997, the GEV has since set itself two main goals: firstly, to minimize emissions of harmful substances from building products for indoor use, and secondly to increase transparency regarding the environmental impact of these products.



The GEV pursues several key objectives:

- Promoting the development and use of low-emission building products
- Providing information and training materials for professionals and consumers on the health and environmental benefits of low-emission products

- Conducting research projects to reduce emissions and improve the environmental performance of building products

- Collaborating with national and international institutions to promote standards and guidelines for low-emission products



The EMICODE® label

The EMICODE® is a trademark-protected eco-label awarded by the GEV. It identifies low-emission products and was developed to provide reliable guidance for all stakeholders in the construction industry – from planners and architects to craftspeople and end users. The use of EMICODE® products helps improve indoor air quality and minimize health risks as well as negative environmental impacts. Products bearing the EMICODE® label have been tested and certified for their emissions.

EMICODE® classifications and certificates are available for the following installation and building products:

■ **Liquid, paste-like and mineral-based products**, e.g., primers and fillers for walls and floors, adhesives for floor coverings, parquet and tiles, as well as wall and ceiling plasters, joint sealants, floor coatings, screeds, etc.

■ **Ready-to-use products** that do not require chemical reaction or physical drying, e.g., insulation underlays, sealing tapes, adhesive tapes, etc.

■ **Surface treatment products for parquet**

To receive the EMICODE® seal, products must meet high standards regarding their ingredients and the emission of volatile organic compounds (VOCs). Measurements of VOC emissions are carried out by independent and accredited testing laboratories. In addition, the EMICODE® system regulates other harmful substances, such as CMRs

or SVHCs*, which pose a health hazard or have a negative impact on the environment. These substances hinder the recycling or disposal of building materials, for example during the demolition of a building.

Emission tests make a positive contribution to the circularity of building products. The test criteria are based on international standards and are continuously updated to reflect the latest scientific findings and technical developments.

Once a product has been certified, it is subject to regular spot checks. If a product is found to exceed the specified VOC limits or if unauthorized additives are detected, the EMICODE® seal may be revoked. This ensures that only those products receive the EMICODE® label that meet the high standards for environmental compatibility and indoor air quality, thereby guaranteeing the long-term quality and credibility of the certification system.

*SVHCs (Substances of Very High Concern) refers to chemicals that are harmful to human health or the environment, as defined by the EU REACH Regulation.



How DGNB and EMICODE® contribute to green building

Sustainability-driven decisions

At a time when sustainable construction and resource conservation are becoming increasingly important, the EMICODE® sets a clear benchmark. Products bearing this seal are preferred by building certification systems such as the DGNB because they make a significant contribution to indoor air quality. This affects not only the selection of products for public and commercial new-builds, but also for renovation and refurbishment projects.

Health and long-term economic benefits

The use of low-emission products not only improves indoor air quality but also minimizes the risk of complaints and health impairments. Naturally, this benefits the residents of buildings in the long term. At the same time, the use of such products can also potentially reduce repair and maintenance costs and help preserve the property's value.

Standardized simplification in building certification

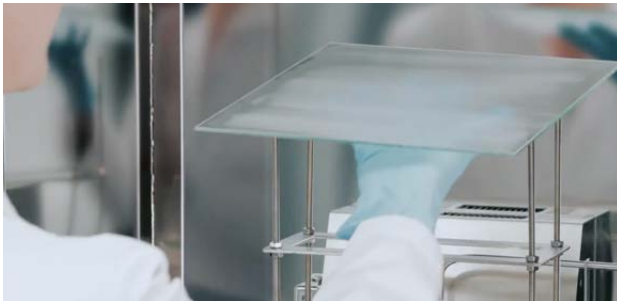
Within the DGNB system, indoor air quality is given significant weight. The DGNB requires building

products to make a substantial contribution to high indoor air quality, thereby ensuring a healthy indoor climate – not only in the short term, but also throughout the entire life cycle of a building.

Under criterion ENV1.2 “Local Environmental Impact”, the DGNB system therefore sets requirements for VOC emissions and ingredients: Building products must have only low levels of volatile organic compounds (VOCs). Meeting these requirements contributes to a higher overall rating of the building. To make compliance with the required limit values verifiable, manufacturers of building products are expected to provide transparent, comprehensive documentation and proof regarding the materials used and their emission behavior. This evidence is an integral part of the certification process.



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The results of the emission measurements are crucial to the outcome of the certification process. Low VOC levels not only contribute positively to the building's certification result, but also prevent the certification from failing.

The required emission tests are carried out by independent and accredited testing institutes that work with standardized test methods (use of test chambers). In this way, the EMICODE® provides objective, transparent and verifiable proof that a product has a low content of harmful pollutants. The EMICODE® is therefore recognized by the DGNB as proof of compliance and has already been integrated into the DGNB certification system.

For a broad range of building products¹, the EMICODE® EC 1^{PLUS} seal is accepted as proof that these products meet the requirements of the highest DGNB quality level 4 (QL4). Thus, the EMICODE® certificate is directly incorporated into the DGNB's evaluation system and supports construction projects in achieving the desired certification level.

In addition to the requirements for building products, the DGNB system stipulates mandatory indoor air measurements within the building under criterion SOC1.2 "Indoor Air Quality".

Compliance with the minimum requirements is mandatory for all targeted certification levels. Exceeding the maximum VOC levels at even a single measuring point will result in failure to obtain certification.

These strict requirements reflect a sustainable approach that focuses not only on protecting the environment but, above all, on safeguarding the health and well-being of residents. When selecting the right building products, a healthy and energy-efficient indoor climate can be produced in the long run.

The EMICODE® label enables auditors and contractors alike to efficiently and unbureaucratically document the quality of the building products used. The low VOC levels of EC 1-certified building products also protect those responsible for the construction process from unpleasant surprises during the mandatory indoor air measurements.



¹ Products regulated in lines 8, 9, 11, 13 or 27 of the DGNB criteria matrix (version 2023, 3rd edition)

Summary



The **DGNB**'s work has a significant impact on the construction industry and contributes to sustainable development. Through its standards and certifications, it creates incentives for sustainable construction and promotes innovation in the building sector. It helps improve the quality and sustainability of buildings and supports the transition to a built environment that is more environmentally friendly and also more livable.



The **GEV** and its eco-label **EMICODE®** are key elements in promoting health and environmental compatibility in the construction industry. Strict test criteria and the strong commitment of the GEV members ensure that low-emission products are developed and employed that make a positive contribution to good indoor air quality and sustainable development. The EMICODE® provides reliable guidance for the selection of building products that are beneficial to both the environment and human health. Furthermore, the label helps improve the quality of indoor life.

In conclusion, it can be said that **DGNB and EMICODE® complement each other very well**. While the DGNB handles the strategic and holistic assessment of sustainability and indoor air quality, the EMICODE® provides the specific tools and logistics needed to provide measurable proof of the low-emission quality of building products.



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