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Environmental - Information

nora[®]

All About Flooring. All About You.

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Background

Nowadays the environmental compatibility of a product must encompass not only environmental quality but also the entire product life cycle – from manufacturing to disposal.

In this process, the *decisive considerations* are:

Basis of nora[®] rubber floorcoverings

The basis for nora[®] rubber floorcoverings is provided by high-quality grades of industrial and natural rubber.

Raw Materials

Additionally, there are also minerals that are extracted from natural deposits, as well as environmentally compatible colour pigments.

An essential aspect is the fact that nora[®] floorcoverings consist of rubber. That means they are free of plasticizers and chlorine-based organohalogenes (which are both present in PVC).

In addition, we place extensive ecological requirements upon the qualities of the rubbers used, which can be met only by a few suppliers. We use only the highest grades of natural rubber.

Furthermore, it is important to us that our suppliers are certified to the international standards **ISO 9001** and **ISO 14001**. The testing process for raw materials is rounded out by regular monitoring performed by independent institutes.

Production Process

nora[®] rubber floorcoverings are manufactured in state-of-the-art production facilities. The production process is designed to conserve resources. In order to reduce water consumption, the cooling water is contained in a closed cycle. Electrical energy and process steam are generated as much as possible in an environmentally friendly power plant, utilising not only high-efficiency air filtration systems but also the principle of combined heat and power (CHP) cogeneration.

Production

nora[®] floorcoverings are produced at *one* location in Germany. The production processes used there are subject to strict ecological requirements and some of the highest technical standards in the world.

Our company is certified to **EMAS**, an EU guideline for assessment of environmental management systems (see also under Environmental Seals).

nora[®] is also certified to international standards such as **ISO 9001** quality management and **ISO 14001** environmental management system.

Product Life Cycle

Processing **nora**[®] floorcoverings are installed in tiles or sheets, as a rule using solvent-free, environmentally compatible dispersion adhesives. For **nora**[®] floorcoverings, the leading adhesive manufacturers offer products that are rated as very low-emitting under EC1 or South Coast (CA) Air Quality Management. In areas with extreme traffic, **norament**[®] floorcoverings can be installed using solvent-free reaction adhesives.

nora[®] floorcoverings do not have to be joint-sealed. With a few function-related exceptions, the dimensional stability of sheets and tiles after installation makes joint sealing superfluous. This constitutes a substantial advantage during installation.

nora[®] stair systems, stair margins, and skirtings can be installed from the roll using SIFLOOR Goman[®] special dry adhesive. This high-performance dry adhesive is odourless, environmentally compatible, and free of solvents, high-boiling compounds, formaldehyde, chlorine, plasticizers, etc. Other advantages include substantially faster installation, immediate accessibility, and high adhesive performance.

Utilisation In addition to a long period of utilisation, a **long product lifespan** also means conservation of resources. If we consider the entire life cycle, it is clear that the **nora**[®] product offers not only optimal ecology but also optimal economy.

nora[®] floorcoverings are extremely resilient and wear-resistant. Their extremely long lifespan is well above the average for resilient floorcoverings.

Cleaning The closed surface of **nora**[®] rubber floorcoverings offers the advantage of easy and **economical cleaning**. The extreme wear resistance of the floorcoverings offers a number of advantages in care and maintenance. Since no coating is needed, there is

- no formation of pathways
- no flaking or yellowing of the coating
- no disposal problem for the cleaning company after the basic cleaning.

Emission Nowadays **indoor air** quality is becoming increasingly important.

For many years, **nora**[®] rubber floorcoverings have already been undergoing regular testings for emissions by independent institutions. The composition of **nora**[®] floorcoverings precludes the emission of substances that could be hazardous to health.

The toxicological safety of **nora**[®] rubber floorcoverings is continuously monitored by the Blue Angel, the GREENGUARD Environmental Institute (GEI), BRE Certification Ltd., the Fresenius Institute, and others.

Recycling – Removal – Packaging

How are production scraps handled by nora flooring systems?

It has long been the practice to reuse production scraps, such as punch burrs and abrasive dust, from **nora**[®] rubber floorcoverings. They are granulated and used as part of the raw material basis of different **nora**[®] products. Additionally they are utilised as high-quality filling materials and, in part, as decoration granules.

Production Scraps

What happens with the laying cuttings and removed floorcoverings?

There are various ways to dispose of laying cuttings and removed floorcoverings:

1. Return to nora flooring systems

Laying cuttings from new installations as well as any **nora**[®] floorcovering material that has been removed and does not have any major adhesions of levelling compound and screed can be taken back by nora flooring systems and re-utilised.

Removal

2. Material Recycling

Granulated rubber floorcoverings are recycled by specialized companies for use in landing mats, industrial mats, stable mats, and coverings for sports areas.

3. Thermal Recycling

Burning as substitute fuels in thermal power plants instead of gas or oil in order to utilise the energy contained in the combustible material.

4. Complete material/thermal recycling

Energy recovery in the cement industry through thermal recycling: Because of its favourable composition, the fillers remain within the cement clinkers.

5. Disposal in landfills

Removed **nora**[®] rubber floorcoverings are free of plasticizers (phthalates) and halogens (e.g. chlorine). Therefore, these materials cannot escape into the ground water after being buried. **nora**[®] floorcoverings can thus be disposed of in landfills without any problem. The current regulations valid at the time of this printing must be observed. They can vary from region to region. Our information applies only to floorcoverings to which no adhesives or flooring residues have adhered.

Recycling

What about the environmental compatibility of the packaging material?

Removal

nora® floorcoverings are available as rolls or tiles. As requested by the customer, tiles are supplied either loose or in cardboard boxes on pallets. nora flooring systems uses only wooden pallets, which are taken back and reused in compliance with a European recycling program. The cardboard boxes are produced from waste paper and are 100% recyclable.

The sheeting is rolled on cardboard cores made of recycled cardboard. The cardboard cores are also taken back and reused. Even the secondary packaging of the rolls consists of recyclable paper. The individual rolls are positioned vertically on wooden pallets and sealed in environmentally compatible and recyclable polyethylene film.

Labelling of product quality using the following environmental seals

Because of its consistently high quality standards in regard to health-conscious product characteristics, the **nora**[®] product range possesses the following certifications:



1. The Blue Angel

In 2006, the **noraplan**[®] 913 floorcoverings became the very first resilient floorcovering to win the Blue Angel according to the qualification guideline RAL-UZ 120.

The Blue Angel is a German certification for products and services that are environmentally friendly and low in emissions.

The Blue Angel

The purpose of this certification is to provide better information and protection to the environment and consumers in order to promote environmental quality and health.

The Blue Angel is awarded by the *German Federal Ministry for the Environment, Nature Conservation, and Nuclear Safety*, the *German Federal Environmental Agency*, the “*Jury Umweltzeichen*,” consumer organizations, and others.

The Blue Angel is the world’s first and oldest environmental label for products and services.

The basic prerequisites for attaining this environmental label are the absence of carcinogens and a particularly low level of emissions of organic substances and formaldehyde.

Further criteria for attaining The Blue Angel are:

- No chlorinated or halogenated organic compounds
- No N-nitrosamines (carcinogenic)
- No materials rated as poisonous or very poisonous by EU directives or the German Toxic Substances Act (“Gefahrstoffverordnung”)
- No substances that are carcinogenic, mutagenic, hazardous to reproduction, or embryotoxic
- No phthalates (plasticizers)
- Compliance with the quality requirements for the usability of floorcoverings

2. AgBB Rating

The German Committee for Health-Related Evaluation of Building Products (AgBB) is a group of experts from a number of environmental and health agencies at the state and national level in Germany.

The goal is to assess the health effects of emissions from floorcoverings based on the appropriate threshold values.

Floorcoverings are not approved for construction and may not be installed until external testing shows that they fall below these critical values.

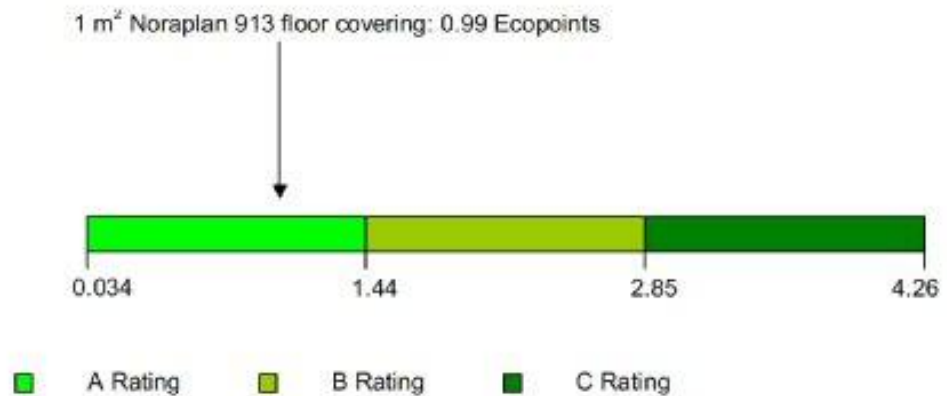
Environmental Seals

3. BRE Certification

BRE Certification BRE Certification Ltd. is a nonprofit organisation that assesses the environmental qualities of products.

BRE Rating Ltd. specialises as an external approval and certification body in the areas of construction, environment, fire protection, and safety.

It is a wholly owned subsidiary of BRE Trust (a nonprofit association) and a sister company of BRE, which has been carrying out research work on building safety, regulations, and performance on behalf of the UK government for more than 80 years. Although BRE specialises in construction and the built environment, its services are currently being utilised worldwide by customers in numerous industrial areas – ranging from chemistry to aerospace.



The **noraplan[®] 913** floorcovering is certified according to the BRE certification system for environmental profiles of construction products. It earned enough eco credits in the certification processes to achieve an **A rating as per the “Green Guide to Specification.”**



4. GREENGUARD

All standard products and adhesives of **nora**[®] have the GREENGUARD certificate for indoor air quality and, because of their low-emitting materials, contribute to the LEED (Leadership in Energy and Environmental Design) performance credits for indoor environmental quality.

GREENGUARD

Information on the GREENGUARD Environmental Institute

The GREENGUARD Environmental Institute (GEI) is a cross-industry, nonprofit organisation that oversees the GREENGUARD Certification Program. As an ANSI Authorised Standards Developer, GEI establishes permissible indoor air standards for indoor products, environments, and buildings. The goal of GEI is to improve general health and quality of life through programs for the improvement of indoor air quality. The GEI advisory board consists of independent, volunteer members who are renowned experts in the areas of indoor air quality, public health and environmental health, building design and construction, and public policy, and who provide guidance and leadership to GEI.

History of GREENGUARD

GEI was founded in June 2001 to introduce a program for external certification based on proven emission standards and to provide specification and procurement professionals with resources for low-emitting products. This program was initially based on the AQSpec List[™] developed in 1996 by Dr. Marilyn Black and Air Quality Sciences Inc. Originally, the AQSpec List[™] program was implemented in order to recognize manufacturers and products that demonstrated compliance with the general standards for product emissions of the State of Washington and the emissions standards for office furniture specified by the US Environmental Protection Agency for the project in their headquarters.

Information on the GREENGUARD Indoor Air Quality certification Program for Low-Emitting Products

The GREENGUARD Certification ProgramSM is a cross-industry, external test programme for low-emitting products and materials. The first GREENGUARD certification was awarded in the autumn of 2002. In 2005, GEI announced the GREENGUARD Children & Schools standard, which takes into account the sensitivity of school children along with the specific characteristics of school buildings and prescribes the strictest product emission criteria to date. Currently, more than 150 manufacturers in various industries offer GREENGUARD Indoor Air Quality Certified[®] products.

Environmental Seals

Fresenius



5. Fresenius

Within a periodical quality control, the floorcoverings produced by nora flooring systems are subjected to quality testings by the renowned **Institut Fresenius Chemische und Biologische Laboratorien AG** in Taunusstein.

As a result, **nora**[®] floorcoverings are entitled to bear the quality label “**inspected quality.**”

The INSTITUT FRESENIUS is one of Europe’s leading providers of chemical laboratory analyses. The competence of the institute is demonstrated by more than 150 certifications, accreditations, and approvals, as well as 155 years of experience in the field of analysis. This outstanding wealth of knowledge provides the foundation for the excellent reputation of the institute among manufacturers, retailers, service providers, and end consumers, both within Germany and abroad.

Many consumer goods of our daily lives bear the quality label of the INSTITUT FRESENIUS. By attaching this seal to their products, manufacturers document their above-average commitment to quality and safety.

EMAS



6. EMAS

The Eco-Management and Audit Scheme (EMAS) of the European Union is a management instrument that can be used by companies and other organisations to assess, report, and improve their environmental performance. The system has been available for participation by companies since 1995; but was initially restricted to companies in the industrial sector.

Since 2001, EMAS has been accessible to all economic sectors, including public and private service providers.

In 1996, nora flooring systems became one of the first manufacturers of resilient floorcoverings to subject itself to a voluntary audit of its **environmental management system** under EEC Regulation 761/2001. The company was listed in the EMAS register under number D-153-00016.

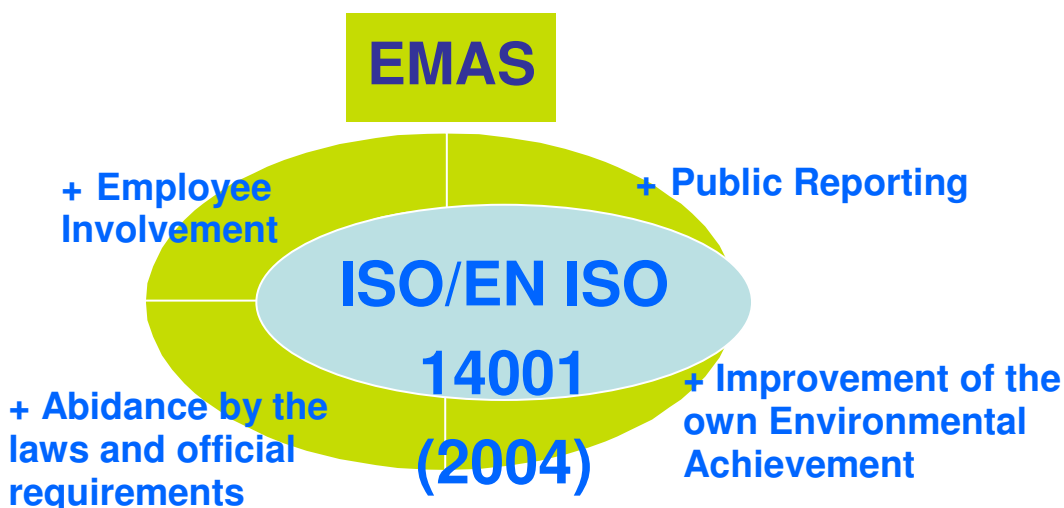
The objective of this Europe-wide regulation is to promote a process for continuous improvement of environmental protection by organisations and to strengthen the individual responsibility of industry for implementing measures to protect the environment.

To receive EMAS registration, an organisation must carry out the following steps:

1. Conduct an environmental review covering all environmental aspects of the activities, products, and services of the organisation, the assessment methods used, their legal and regulatory framework, as well as the practices and processes that are in place for environmental management.
2. Establish an effective environmental management system based on the results of the review in order to implement the organisation's environmental policy as defined by its management. The management system must define responsibilities, objectives, means, operational procedures, and training needs, as well as systems for monitoring and communications.
3. Carry out an environmental audit, in particular to assess the existing management system and its conformity with the policy and the programme of the organisation and compliance with the applicable regulatory requirements.
4. Submit a declaration of the organisation's environmental performance, comparing the environmental goals with results, as well as the steps that need to be taken in the future in order to achieve a continuous improvement in the organisation's environmental performance.

Before an organisation can use the EMAS logo, the environmental review, the environmental management system, the audit procedure, and the environmental statement must be confirmed by an accredited EMAS verifier, and the validated statement must be sent to the EMAS Competent Body for registration and made public.

EMAS goes beyond ISO 14001.



7. Member of the DGNB

DGNB nora flooring systems is a member of the German Sustainable Building Council (DGNB).

DGNB is aiming to show different ways and possibilities for sustainable building in Germany. This refers not only to the planning of buildings but also to their construction and utilisation.

The overall aim of sustainable building is particularly the quality in all areas that are important for building. Sustainable buildings are eco-friendly, economically efficient and resource-saving. These buildings will retain their high values in the long run. Additionally they are cosy and healthy for the users and do fit ideally into their sociocultural environment.

The important aspect concerning DGNB is the award of a certificate for sustainable constructions. **nora**[®] floorcoverings are installed in some of the until now few awarded buildings.

**U.S. Green
Building Council**



8. Member of the U.S. Green Building Council

As part of the ongoing commitment to protect the environment and its natural resources, nora joined the U.S. Green Building Council (USGBC) in 2002. The USGBC is the most important coalition of leading representatives from across the building industry, dedicated to the promotion of buildings that are environmentally friendly and profitable yet still offer healthy places to live and work.

Together, they have developed the LEED system (Leadership in Energy and Environmental Design) to classify environmentally friendly buildings based on a voluntary, consensus-based national standard for the development of high-performance, sustainable buildings.

DIN ISO 14001



9. DIN ISO 14001

nora was one of the first companies in our industry to be certified under ISO 14001 for environmental management systems.

The ISO 14001 environmental management standard was introduced to help organisations minimize their environmental impact, to comply with applicable laws, regulations, and other environmentally related requirements, and to achieve continuous improvement. To demonstrate the consistency of its processes, nora has also received ISO 9001 certification for its quality management system.

10. CA 01350

All **nora**[®] standard products and adhesives comply with California standard 01350. These products are also included on the CHPS (Collaborative for High Performance Schools) list of low-emitting materials, which requires testing for compliance with California standard 01350. The products on the CHPS list of low-emitting materials can contribute to LEED Indoor Environmental Quality Credits for Low-Emitting Materials.

CA 01350

The California Environmental Protection Agency (Cal/EPA) developed California 01350 as a special standard specification for environmental requirements to cover key environmental performance issues related to the selection and handling of construction materials.

This specification defines goals and provides an overview of special environmental requirements.

In addition – among other things – it also includes guidelines for the efficient use of energy, materials, and water; guidelines for indoor air quality (IAQ), non-toxic performance standards for cleaning and maintenance products, and guidelines for sustainable site planning and landscape design. Key elements of specification 01350 include procedures to ensure good indoor air quality to protect human health. This portion of the specification contains product selection guidelines as well as emission-testing protocols for labelling low-emitting materials.

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