



NORIT-UNDERFLOOR HEATING SYSTEM (GF)

SELF-DECLARATION ACC. TO DIN EN ISO 14021

Holder of the declaration: Lindner GFT GmbH | Lange Länge 5 | 97337 Dettelbach | Germany

Content of the declaration: Product information
Certification system DGNB
Certification system LEED
Certification system BREEAM
Circular Economy

PRODUCT INFORMATION

Green Building Statement

We already think in closed loops while developing our products. In this context we act as one of the specialists within the range of sustainable building for many years. Supported by our internal technical department „Green Building“, we ensure the sustainability target of your building projects.

Product description

NORIT-Underfloor Heating System – NORIT-TE 30 Therm GF

The NORIT-TE 30 Therm GF system is made from gypsum and cellulose fibres. The underfloor heating system is homogeneous, heavy-duty, non-flammable and biologically harmless.

Application area

The NORIT-TE 30 Therm GF combines dry screed and underfloor heating in one system and thus enables the comfort of a heated construction in the interior design. In addition, it fulfills building physics properties such as fire- and insulation. It can also be used in damp rooms according to DIN 18534 (W0-I, W1-I) and has a regulating effect on the room climate.

The environmental product declaration refers to the NORIT-TE 30 Therm GF in a thickness of 33 mm.

Base materials

Base materials per sqm/element = aprox. 44,0 kg		
System components	Material	Weight proportions (%)
Gypsum fibre board	FGD gypsum/ cellulose fibres	~ 74,0
NORIT-Primer	polystyrene acrylate	< 0,5
NORIT-Heating Tube	PE-RT 5-layer	< 0,5
NORIT-Wall Connection Foam Tape	PE-material	< 0,5
NORIT-TE-Adhesive	1k-PUR	< 0,5
NORIT-Filler	Calcium sulphate / Portland cement	~ 25,5

Material explanation

FGD gypsum

FGD gypsum is produced industrially, e.g. by desulfurization of the flue gases when burning coal. Furthermore, production residues (sanding dust or even sawdust) can be returned to the production process by calcination.

Cellulose Fibres

Cellulose fibres are obtained as a recycled product from the industry or manufactured by recycling paper.

NORIT-Wall Connection Foam Tape

PE-Edge tape with welded-on flap made of PE film for the sound bridge-free laying of floating dry screed.

NORIT-TE-Adhesive

The NORIT-TE adhesive is a solvent-free, joint-filling and universally applicable one-component polyurethane assembly adhesive. Details of the adhesive can be found in the technical product or safety data sheet.

NORIT-Primer

Synthetic resin dispersion based on polystyrene acrylate for priming the NORIT-TE 30 Therm GF elements.

NORIT-Filler

Cement-bound and polymer-modified potting compound for leveling and pouring the NORIT-TE 30 Therm GF elements.

NORIT-Heating Tube

Heatmedium carrier for use in surface heating installations.

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CERTIFICATION SYSTEM DGNB

Not listed characteristics do not apply to this product.



Environmental Quality

ENV 1.1 Life Cycle Assessment of the Building

An ecological balance sheet is available for the production facilities and it can be provided on demand. A project-specific EPD can be produced in accordance with the valid standards. Additional time and costs have to be considered.

ENV 1.2 Local Environment Impact

Components	Weight proportion (%)	VOC (%)	GISCODE / Emicode	Other
Gypsum fibre board	-	-	-	-
NORIT-Primer	-	-	-	-
NORIT-Heating Tube	-	-	-	-
NORIT-Wall Connection Foam Tape	-	-	-	-
NORIT-TE-Adhesive	-	-	-	-
NORIT-Filler	-	-	-	-
Total	-	-	-	-

As a manufacturer, Lindner fulfils the obligations towards the EU chemical directive "REACH" and has created its own REACH declaration.

The aim of the **REACH** regulation (**R**egistration, **E**valuation and **A**uthorization of **C**hemicals) is to register materials produced and used in the EU and to determine and record their impact on health and environment.

ENV 1.3 Responsible Procurement

Due to the use of industrially produced gypsum (FGD gypsum), natural gypsum resources are spared due to the avoidance of land consumption caused by the mining of natural gypsum deposits.

The product NORIT-TE 30 Therm GF does not contain any timber, timber-based products or timber-based components. A FSC / PEFC detection is therefore not required.

Economical Quality

ECO 1.1 Life Cycle Costs

The NORIT-TE 30 Therm GF can be detected separately without any problems in case of the conversion or termination of the use phase of a building in case of a selective dismantling.

ECO 2.2 Market Ability

The NORIT-TE 30 Therm GF is continuously adapted to the current market demands.

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Sociocultural & Functional Quality

SOC 1.1 Thermal Comfort

With the NORIT-TE 30 Therm GF the limits of a surface temperature of 29°C for the thermal comfort can be maintained.

SOC 1.2 Indoor Air Quality

Products of the company Lindner are manufactured with materials which have very low or no emissions of e.g. VOC and formaldehyde have. There are currently no concrete values for VOC emissions or AgBB measurement values of NORIT-TE-30 Therm GF.

According to Directive 2010/75 / EU (VOC), the value of the NORIT-TE-Adhesive is 0% . Our products contribute positively to indoor air quality. This ensures that even the highest demands for indoor air measurements can be achieved with the NORIT-TE 30 Therm GF.

SOC 1.3 Acoustic Comfort

Depending on the installation method of the NORIT-TE 30 Therm GF system, the required sound insulation dimensions can be achieved. The required overall sound insulation can be maintained. The NORIT-TE 30 Therm GF can help meet the DGNB-requirements. Laboratory tests according to DIN EN ISO 10140 for the product were carried out in accordance with the required sound transmission paths. With the system thickness of 33 mm, various improvement values can be achieved in order to meet the required overall sound insulation for buildings, in particular for residential buildings according to DIN 4109, VDI 4100, as well as the DEGA-Recommendation 103.

SOC 1.4 Visual Comfort

Due to the individual possibilities in the choice of surface coating and coverings, the visual well-being can be adapted. The NORIT-TE 30 Therm GF combines dry screed and underfloor heating into one system and can be finished with different floor coverings and thus can be individually designed. The floor coverings used range from carpet, tiles / natural stone (also large formats up to 1200 x 1200 mm), to parquet and liquid design coatings.

SOC 2.1 Accessibility

The NORIT-TE 30 Therm GF implements all the requirements of the generally accepted rules of technology. Upon request, the product can also be designed as barrier-free in accordance with the respective specifications and regulations, allowing easier access to the specific rooms.

Technical Quality

TEC 1.2 Sound Insulation

For the product, laboratory tests according to DIN EN ISO 10140 were carried out in accordance with the required sound transmission paths. With the system thickness of 25 mm, various improvement values can be achieved in order to achieve the required overall sound insulation for buildings, in particular residential buildings in accordance with DIN 4109, VDI 4100, as well as the DEGA-Recommendation 103.

TEC 1.5 Cleanability

The cleaning of the NORIT-TE 30 Therm GF system depends on the respective laid coverings or coatings. Here the cleaning instructions for floor coverings or coatings as well as the cleaning instructions of the flooring manufacturer must be observed.

TEC 1.6 Deconstruction and Disassembly

The NORIT-TE 30 Therm GF can be processed with the usual woodworking tools. Special tools are not required.

Lindner system products are produced in this way so that a low-waste installation on the construction site is possible. Waste that cannot be avoided on site will be preferentially returned to recycling processes via waste management companies.

 Process Quality**PRO 1.5 Documentation for Facility Management**

Usage, maintenance and care instructions are created to the usual extent and are available.

PRO 2.1 Environmental Impact of Construction

Compliance with project-specific requirements with regard to low-waste, low-noise and low-dust construction site, as well as measures for soil and groundwater protection are ensured by specialized in-house departments. An appropriate verification can be produced and implemented on request by specialized personnel. Due to the fact that the NORIT-TE 30 Therm GF is only occasionally required on the construction site, the product contributes to a noise-free and dust-free construction site. The packaging is chosen for the respective project so that as little waste as possible is produced.

PRO 2.2 Construction Quality Assurance

All documents relevant for project documentation can be provided.



CERTIFICATION SYSTEM LEED

Not listed credits do not apply for this product.

Sustainable Site

Construction Activity Pollution Prevention

The compliance with project-related requirements of an ESC plan is ensured by specialised in-house departments. A complete ESC plan can be produced and implemented on request by specialised personnel.

Materials and Resources

Construction and Demolition Waste Management Planning

Waste that cannot be avoided on site will be preferentially returned to recycling processes via waste management companies. A complete CWM plan can be issued and implemented by the specialists on request.

Building Life Cycle Impact Reduction

Lindner products (due to the raw materials, the production processes and the high production quality) have a long service life under normal conditions of application and the consideration of the given climatic conditions.

A specific life-cycle assessment may be provided if required. Additional time and costs have to be considered.

Building Product Disclosure and Optimization – Environmental Product Declaration

A project-specific EPD can be produced in accordance with the valid standards. Additional time and costs have to be considered.

Building Product Disclosure and Optimization – Sourcing of Raw Materials

Components	Weight proportion (%)	Recycling content (%)		Production location
		Pre-Consumer	Post-Consumer	
Gypsum fibre board	~ 74,0	100	0	Dettelbach
NORIT-Primer	< 0,5	0	100	Krölpa
NORIT-Heating Tube	< 0,5	0	100	Knetzgau
NORIT-Wall Connection Foam Tape	< 0,5	0	100	Erpfendorf (A)
NORIT-TE-Adhesive	< 0,5	0	100	Haiger
NORIT-Filler	~ 25,5	0	100	Krölpa
Total	100			

The product NORIT-TE 30 Therm GF contains no materials made of wood. FSC / PEFC detection is therefore not required.

Building Product Disclosure and Optimization – Material Ingredients

As manufacturer of products Lindner fulfils the obligations towards the EU chemical directive „REACH“ and created its own REACH declaration.

The aim of the **REACH** regulation (Registration, Evaluation and Authorization of **C**hemicals) is to capture materials produced and used in the EU and to determine and record their impact on health and environment.

Construction and Demolition Waste Management

The scope of delivery only contain panels which are ready for installation and do not have to be processed on site.

Therefore, the product contributes to a noise- and dust-free construction site.

Lindner system products have been designed to minimize processing waste during their installation. Waste that cannot be avoided on site is preferentially put into recycling processes by means of waste management facilities.

 Indoor Environmental Quality**Daylight****Minimum Acoustic Performance**

The NORIT-TE 30 Therm GF meets high requirements for sound insulation. The required overall sound insulation can be achieved.

Low Emitting Materials

Products made by Lindner consist of low-emitting materials e. g. with respect to VOC or formaldehyde. There are currently no concrete values for VOC emissions or AgBB measurement values of the NORIT-TE 30 Therm GF. According to Directive 2010/75 / EU (VOC), the value of the NORIT-TE-Adhesive is 0% . Our products contribute positively to the indoor air quality. This ensures that even the highest requirements for indoor air measurements can be met with the NORIT-TE 30 Therm GF.

Construction Indoor Air Quality Management Plan

The compliance with project-related requirements of an IAQ plan is ensured by specialised in-house departments. A complete IAQ plan can be produced and implemented on request by specialised personnel.

Indoor Air Quality Assessment

Products of the company Lindner are manufactured with materials which have very low or no emissions of e.g. VOC and formaldehyde have. There are currently no concrete values for VOC emissions or AgBB measurement values of NORIT-TE 30 Therm GF. According to Directive 2010/75 / EU (VOC), the value of the NORIT-TE-Adhesive is 0% . Our products contribute positively to indoor air quality. This ensures that even the highest demands for indoor air measurements can be achieved with the NORIT-TE 30 Therm GF.

Acoustic Performance

Depending on the installation method of the NORIT-TE 30 Therm GF system, the required sound insulation dimensions can be achieved. The required overall sound insulation can be maintained. The NORIT-TE 30 Therm GF can help meet the LEED-requirements. Laboratory tests according to DIN EN ISO 10140 for the product were carried out in accordance with the required sound transmission paths. With the system thickness of 33 mm, various improvement values can be achieved in order to meet the required overall sound insulation for buildings, in particular for residential buildings according to DIN 4 109, VDI 4100, as well as the DEGA-Recommendation 103.

CERTIFICATION SYSTEM BREEAM

Not listed characteristics do not apply for this product.

**Management****Man 02 Life cycle cost and service life planning**

Lindner products (due to the raw materials, the production processes and the high production quality) have a long service life under normal conditions of application and the consideration of the given climatic conditions.

Man 03 Responsible construction practices

All companies of the Lindner Group meet the requirements of an environmental management system.

For ISO 14001, ISO 50001, SCC ** and OHSAS certified companies within the Lindner Group, additional specific environmental and safety objectives are defined in conjunction with the annual management review.

The implementation of environmental protection and the relevant legal regulations are defined in the Lindner internal guideline "Environmental Protection".

**Health and Wellbeing****Hea 01 Visual comfort**

Due to the individual possibilities in the area of surface coating and coverings, the visual well-being can be adapted. The NORIT-TE 30 Therm GF is primarily used as a precast floor screed to accommodate a wide variety of floor coverings and can therefore be designed individually. The floor coverings range from carpet, tile / natural stone (even large formats up to 1200 x 1200 mm), to parquet and liquid design coatings.

Hea 02 Indoor air quality

Products of the company Lindner are manufactured with materials which have very low or no emissions of e.g. VOC and formaldehyde have. There are currently no concrete values for VOC emissions or AgBB measurement values of NORIT-TE 30 Therm GF.

According to Directive 2010/75 / EU (VOC), the value of the NORIT-TE-Adhesive is 0%. Our products contribute positively to indoor air quality. This ensures that even the highest demands for indoor air measurements can be achieved with the NORIT-TE 30 Therm GF.

Hea 03 Thermal comfort

With the NORIT-TE 30 Therm GF the limits of a surface temperature of 29°C for the thermal comfort can be maintained.

Hea 05 Acoustic performance

Depending on the installation method of the NORIT-TE 30 Therm GF system, the required sound insulation dimensions can be achieved. The required overall sound insulation can be maintained. The NORIT-TE 30 Therm GF can help meet the BREEAM-requirements. Laboratory tests according to DIN EN ISO 10140 for the product were carried out in accordance with the required sound transmission paths. With the system thickness of 33 mm, various improvement values can be achieved in order to meet the required overall sound insulation for buildings, in particular for residential buildings according to DIN 4109, VDI 4100, as well as the DEGA Recommendation 103.

Hea 18 Volatile organic compounds (In-Use only)

Products of the company Lindner are manufactured with materials which have very low or no emissions of e.g. VOC and formaldehyde have. There are currently no concrete values for VOC emissions or AgBB measurement values of NORIT-TE 30 Therm GF.

According to Directive 2010/75 / EU (VOC), the value of the NORIT-TE-Adhesive is 0%. Our products contribute positively to indoor air quality. This ensures that even the highest demands for indoor air measurements can be achieved with the NORIT-TE 30 Therm GF.

 Materials**Mat 01 Life cycle impacts**

The NORIT-TE 30 Therm GF can be detected separately without any problems in case of the conversion or termination of the use phase of a building in case of a selective dismantling.

Mat 03 Responsible sourcing of construction products

The NORIT-TE 30 Therm GF consists of materials with a high recycled content. The gypsum fibre board consists of 100 % recycled components (pre-consumer). Local suppliers are preferred.

The company Lindner is certified according to the environmental managementsystem according to DIN EN ISO 14001.

Mat 06 Material efficiency

Lindner system products are produced this way, so that a low-waste installation on the construction site is possible. Waste that cannot be avoided on site will be preferentially returned to recycling processes via waste management companies.

 Waste**Wst 01 Construction waste management**

Lindner system products are produced in this way so that a low-waste installation on the construction site is possible. Waste that cannot be avoided on site is preferentially put into recycling processes by means of waste management facilities. The packaging is chosen for the respective project so that as little waste as possible is produced. A complete CWM plan can be produced and implemented on request by specialized personnel.

Wst 06 Functional adaptability (Commercial buildings only)

Lindner products (due to the raw materials, the production processes and the high production quality) have a long service life under normal conditions of application and the consideration of the given climatic conditions. The system can be detected separately without any problems in case of the conversion or termination of the use phase of a building in case of a selective dismantling.

The NORIT-TE 30 Therm GF can be processed with the usual woodworking tools.

Special tools are not required.

 Pollution**Pol 05 Reduction of noise pollution**

Depending on the installation method of the NORIT-TE 30 Therm GF system, the required sound insulation dimensions can be achieved. The required overall sound insulation can be maintained. The NORIT-TE 30 Therm GF can help meet the BREEAM-requirements. Laboratory tests according to DIN EN ISO 10140 for the product were carried out in accordance with the required sound transmission paths. With the system thickness of 33 mm, various improvement values can be achieved in order to meet the required overall sound insulation for buildings, in particular for residential buildings according to DIN 4109, VDI 4100, as well as the DEGA Recommendation 103.



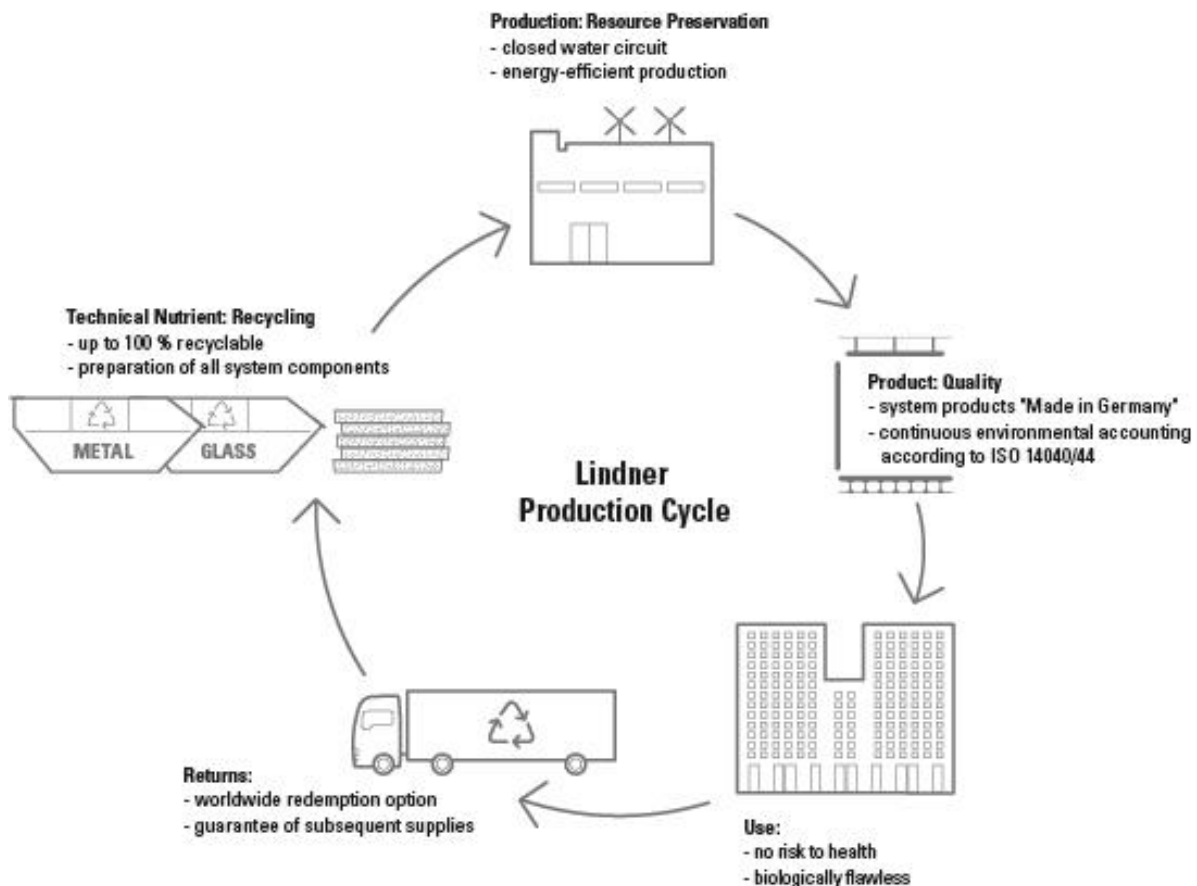
CIRCULAR ECONOMY

General Information

Due to the transfer of the Circular Economy thoughts we avoid waste, toxic substances and pollution. The 100 % technical cycle we are striving for, allows a separation of types and nearly a whole reuse of all materials.

Environmental aspects already play a primary role when choosing our suppliers. Responsibility towards people and environment is as important for Lindner as the quality of the products. Due to this reason an environmental management system according to DIN EN ISO 14001 is established and mostly certified through the whole Lindner Group.

- + Protection of prospective generations and eco systems through care of natural resources
- + Security by choosing high-quality and contaminant-free materials
- + Health as supreme asset of humans
- + Safe environment for all building occupants





Material Health

The parts of the NORIT-TE 30 Therm GF have to be secure and highly compatible for health and environment. Lindner develops systems which are environmentally friendly and also healthy for humans, from the production up to the usage and reuse.

We do know the chemical substances of all materials and run an ongoing process to develop safer products. To meet all criteria according to sustainability and human health, system components were modified and also replaced.



Material Reutilization

The NORIT-TE 30 Therm GF consists of materials with a high recycled content. The gypsum fibre board consists of 100 % recycled components (pre-consumer). The NORIT-Filler amounts to 100% (post-consumer).

The NORIT-TE 30 Therm GF is a product which can be recycled or further recovered.

Therefore, complete components can be reused or new created, after transferring to recycling processes.



Renewable Energy

Through eco-management certification and our in-house environmental accounting, the whole Lindner Group campaigns for a reduction of the ecological footprint of their own production processes by using less energy.

The share of renewable energy is currently around 37 %.

Increasing the share of renewable energy in our production sites is an ongoing process. The reduction of energy within the production sites is our main goal.



Water Stewardship

The concept of water circulation reduces our water consumption systematically.

Due to sedimentation and cleaning of the solid matter, the process water can be pursued in a closed loop, so the fresh water consumption is reduced to a minimum.



Social Fairness

The most important corporate principle is the focus on the individual employee. For this reason the compliance rules "Our Values" for employees were defined. The Lindner Group supports a number of social projects, which are distributed in regional and nationwide areas. Therefore, the charitable "Hans Lindner Stiftung" was founded in 1991.

As a responsible manufacturer, Lindner is certified in accordance to the international environmental management standard ISO 14001. This standard supports our further development of managing scarce resources and the environment in general.