



# SOUND INSULATION DOOR – GTB 56

## ENVIRONMENTAL PRODUCT DECLARATION ACC. TO ISO 14021

**Holder of the declaration:** Lindner SE | Bahnhofstraße 29 | 94424 Arnstorf | 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

#### Lindner GTB 56

The door leaf GTB 56 is an aluminium frame door with double-sided stuck glazing of safety glass. The door leaf thickness is 56 mm.

### Application area

For the application inside of buildings, e.g. offices, conference rooms, industrial workspaces as well as rooms for training and research

### Base materials

Base materials per door leaf 1 m x 2,2 m with double glazing		
System components	Material	Weight proportions (%)
Tempered/ laminated safety glass	Glass	~ 82
Glazing frame	Aluminium	~ 14
Gasket	EPDM	~ 2
Thin plate	Timber	< 0,5
Screws	Steel	< 0,5
Screws	Stainless Steel	< 0,5
Clip-on	Plastic	< 0,5

### Material explanation

#### Glass

ESG, Tempered safety glass  
 VSG, Laminated safety glass

#### Aluminium

Extruded aluminium profiles are coated (powder coated or anodized), cut and mounted as a frame with screws and corner connectors.

#### Steel

All metal alloys whose main component is iron and whose content of carbon dioxide is between 0.02 % and 2.06 % are named steel.

## 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
Tempered/ laminated safety glass	~ 79 %	-	-	
Glazing frame	~ 12 %	-	Giscode BS 10 not applicable for powder coating	without lead, mercury, cadmium and chrome (VI) compounds
Bonding		-	-	
Screws	~ 5 %	-	-	ohne Blei, Quecksilber, Cadmium und Chrom (VI)-Verbindungen
Thin plate	~ 2.7 %			
Clip-on	< 0.5 %			
<b>Total</b>	< 0.5 %			

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

The product Lindner GTB 56 does not contain any timber, timber-based products or timber-based components.

## Economical Quality

### ECO 1.1 Life Cycle Costs

Door leaves can be expected to remain durable for up to 50 years (acc. to BBSR table, code no. 344.111 to 344.311, state 11/2011, published by the Federal Institute for Research on Building, Urban Affairs and Spatial Development).

## Sociocultural & Functional Quality

### SOC 1.2 Indoor Air Quality

Products of the Lindner company are fabricated with materials of low emission like VOC or formaldehyde.

### SOC 1.3 Acoustic Comfort

The Lindner GTB 56 single door leaf can be designed with a valued sound insulation of  $R_w = 37$  dB according to DIN EN ISO 140-03.

### SOC 1.4 Visual Comfort

The Lindner GTB 56 consists mostly of glass. Therefore, daylight from the facades can reach the corridor.

### SOC 2.1 Accessibility

Our products can be designed according to the guidelines and regulations of accessibility. Therefore, they facilitate the access to rooms.

### **Technical Quality**

#### **TEC 1.2 Sound Insulation**

The Lindner GTB 56 single door leaf can be designed with a valued sound insulation of  $R_w = 37$  dB according to DIN EN ISO 140-03.

#### **TEC 1.6 Deconstruction and Disassembly**

The door leaves and frames can be dismantled and reutilized. Lindner system product are designed to allow assembly on site with almost no rubbish. Certain rubbish can not be avoided on site, but will principally be recycled by specialised companies.

### **Process Quality**

#### **PRO 1.5 Documentation for Facility Management**

Customary user, maintenance and care instructions are available.

#### **PRO 2.1 Environmental Impact of Construction**

The compliance with project-related requirements regarding a low-waste, low-noise and low-dust construction site as well as all measures regarding soil and ground water protection are ensured by specialised in-house departments. An appropriate verification can be produced and implemented on request by specialized personnel.

#### **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.

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 **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 have a long life expectancy. Doors can be expected to remain durable for up to 50 years (acc. to BBSR table, code nr. 344.111 to 344.311, state 02/2017, published by the Federal Institute for Research on Building, Urban Affairs and Spatial Development). Moreover, certain products can systematically be dismantled and reused after small processing (C2C).

Our pursued target of a 100 % technical cycle, allows a clean separation and a complete recycling of all components. Lindner products are designed in a way that they can be easily dismantled without any damages what enables to easy changes of the use of the building.

**Building Product Disclosure and Optimization – Environmental Product Declaration**

A project-specific EPD can be created for the product in compliance with the applicable standards. Additional time and costs may have to be taken into account for this.

**Building Product Disclosure and Optimization – Sourcing of Raw Materials**

Components for double glazed door leaf with 37 dB	Weight proportion (%)	Recycling content (%)		Regionality Production location
		Pre-Consumer	Post-Consumer	
Tempered/ laminated safety glass	~ 82 %	20 %	5 %	Arnstorf
Glazing frame	~ 14 %	0 %	30 %	Arnstorf
Bonding	~ 2 %	0 %	0 %	Arnstorf
Screws	~ 1 %	0 %	0 %	Arnstorf
Screws	< 0,5 %	0 %	0 %	Arnstorf
Thin plate	< 0,5 %	0 %	0 %	Arnstorf
Clip-on	< 0,5 %	0 %	0 %	Arnstorf
<b>Total</b>	<b>100</b>	<b>16,5%</b>		

**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 **CH**emicals) is to capture materials produced and used in the EU and to determine and record their impact on health and environment.



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## Materials and Resources

### 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

The Lindner GTB 56 consists mostly of glass. Therefore, daylight from the facades can reach the corridor.

### Minimum Acoustic Performance

The Lindner GTB 56 single door leaf can be designed with a valued sound insulation of  $R_w = 37$  dB according to DIN EN ISO 140-03.

### Low Emitting Materials

Due to the low TVOC value, the Lindner GTB 56 positively contributes to the indoor air quality.

Coating on site is not necessary.

### 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

Due to the low TVOC value, the Lindner GTB 56 positively contributes to the indoor air quality.

Coating on site is not necessary.

### Acoustic Performance

The Lindner GTB 56 single door leaf can be designed with a valued sound insulation of  $R_w = 37$  dB according to DIN EN ISO 140-03.

## CERTIFICATION SYSTEM BREEAM

Not listed characteristics do not apply for this product.



### Management

#### Man 02 Life cycle cost and service life planning

Lindner products have a long life expectancy (due to the raw materials, production processes and high production quality). Moreover, certain products can systematically be dismantled and reused after small processing (Circular Economy). Doors can be expected to remain durable for up to 50 years (acc. to BBSR table, code no. 344.111 to 344.311, state 02/2017, published by the Federal Institute for Research on Building, Urban Affairs and Spatial Development).

#### 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

The Lindner GTB 56 consists mostly of glass. Therefore, daylight from the facades can reach the corridor.

#### Hea 02 Indoor air quality

Products made by Lindner consist of low-emitting materials e. g. with respect to VOC or formaldehyde.

#### Hea 05 Acoustic performance

The Lindner GTB 56 single door leaf can be designed with a valued sound insulation of  $R_w = 37$  dB according to DIN EN ISO 140-03.

#### Hea 18 Volatile organic compounds (In-Use only)

Products made by Lindner consist of low-emitting materials e. g. with respect to VOC or formaldehyde.



### Materials

#### Mat 01 Life cycle impacts

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

#### Mat 03 Responsible sourcing of construction products

Lindner doors are made from materials with a high recycling content. Local suppliers are preferred. The company Lindner is certified according to the environmental management system according to DIN EN ISO 14001.

#### Mat 06 Material efficiency

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.



#### **Wst 01 Construction waste management**

Lindner soundproof door leaves are produced project-specific so that they can be installed on site as low-waste as possible. Waste that cannot be avoided on site will be preferentially returned to recycling processes via waste management companies.

Due to the controlled assembly in the factory, unnecessary sources of error can be avoided.

A complete CWM plan can be issued and implemented by the specialists on request.

#### **Wst 06 Functional adaptability (non-residential only)**

Lindner products have a long life expectancy. Doors can be expected to remain durable for up to 50 years (acc. to BBSR table, code nr. 344.111 to 344.311, state 02/2017, published by the Federal Institute for Research on Building, Urban Affairs and Spatial Development). Moreover, certain products can systematically be dismantled and reused after small processing (C2C).

Our pursued target of a 100 % technical cycle, allows a clean separation and a complete recycling of all components.

Lindner products are designed in a way that they can be easily dismantled without any damages what enables to easy changes of the use of the building.



#### **Pol 05 Reduction of noise pollution**

The Lindner GTB 56 single door leaf can be designed with a valued sound insulation of  $R_w = 37$  dB according to DIN EN ISO 140-03.



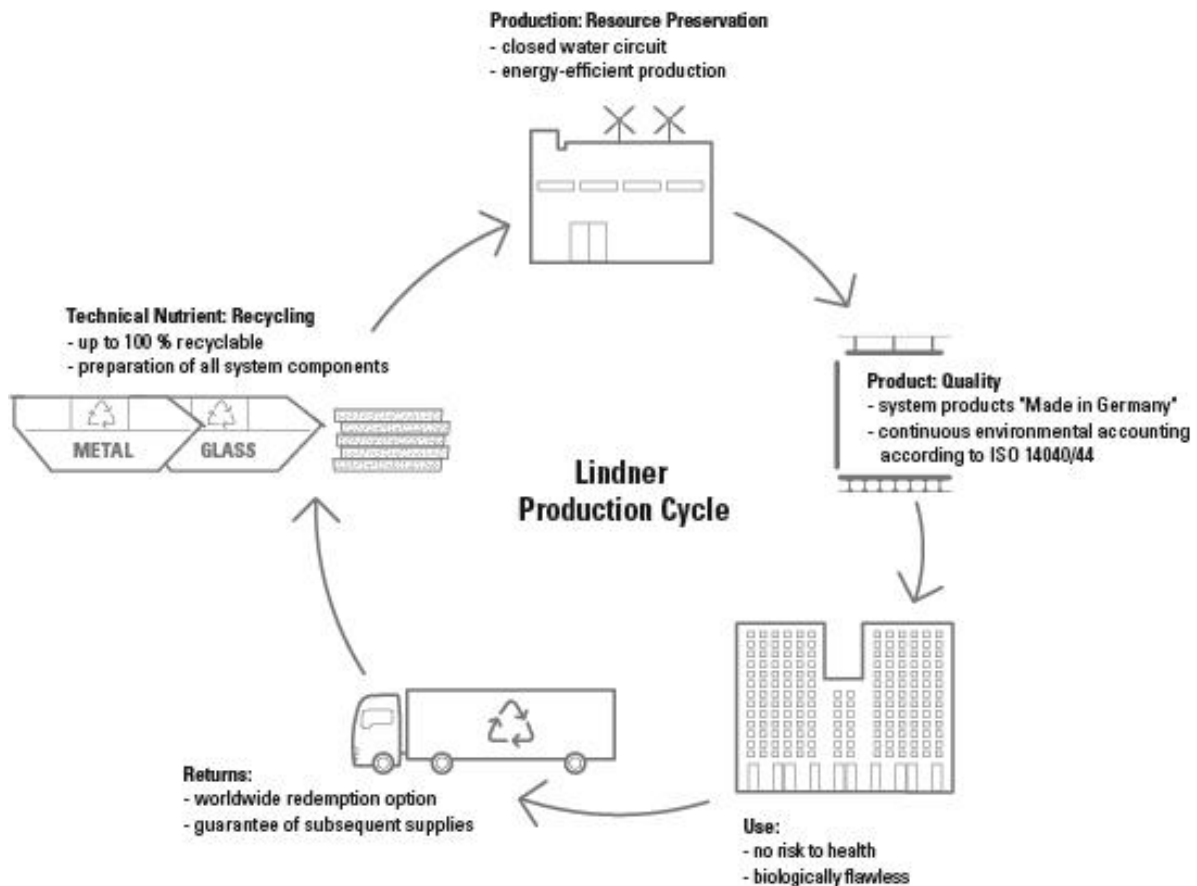
## CIRCULAR ECONOMY



### 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 Lindner GTB 56 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 Lindner GTB 56 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.