



# PARTITION SYSTEM – LINDNER LIFE HYBRID 622

## ENVIROMENTAL 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  
Product-Certification Cradle to Cradle®

## 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

The glass partition - Lindner Life Hybrid 622 is a non-bearing, flush-mounted frameless double glazed system. The Lindner Life Hybrid 622 is delivered as individual components and can be mounted easily on site.

### 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

Grundstoffe pro 3,75 m <sup>2</sup> *		
System components	Material	Weight proportions (%)
Tempered/ laminated safety glass	Glass	~ 94.3
Floor and ceiling profile	Aluminium	~ 3
Floor and ceiling profile	Steel	~ 1,3
Transparent adhesive tape	PETP-Foil with acrylate	< 0.5
Fitting spring	Steel	< 0.5
Height adjustment bracket	Steel	< 0.5
Glass angle	Steel	< 0.5
Sealing	TPE	< 0.5
Gasket strip	PE	< 0.5
Sound insulation inlay	Rockwool	< 0.5

\*) Calculation base: 3.75 m<sup>2</sup> corresponds to the standard dimensions of height x width of an element: 3,000 mm x 1,250 mm

### 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	~ 94.3 %	-	-	
Floor and ceiling profile	~ 3 %	-	Giscode BS 10 not applicable for powder coating	without lead, mercury, cadmium and chrome (VI) compounds
Floor and ceiling profile	~ 1.3 %	-	Giscode BS 10 not applicable for powder coating	without lead, mercury, cadmium and chrome (VI) compounds
Transparent adhesive tape	< 0.5 %	-		
Fitting spring	< 0.5 %	-	-	
Height adjustment bracket	< 0.5 %	-	-	
Glass angle	< 0.5 %			
Sealing	< 0.5 %			
Gasket strip	< 0.5 %			
Sound insulation inlay	< 0.5 %			
<b>Total</b>	<b>100 %</b>			

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 Life Hybrid 622 does not contain any timber, timber-based products or timber-based components.

## Economical Quality

### ECO 1.1 Life Cycle Costs

Non-bearing partitions can be expected to remain durable for up to 50 years (acc. to BBSR table, code no. 342 411, state 11/2011, published by the Federal Institute for Research on Building, Urban Affairs and Spatial Development).

### ECO 2.1 Flexibility and Adaptability

Life Hybrid 622 is a non-bearing partition which is easy to disassemble. Each glazing element can be dismantled, moved or replaced individually. Partitions can be installed at each facade axis without harming floor or ceiling. The reutilization of the partitions is possible at any time.

## Sociocultural & Functional Quality

### SOC 1.2 Indoor Air Quality

Due to the low TVOC value, the Lindner Life Hybrid 622 positively contributes to the indoor air quality.

It is many times lower than the limit value of 500 µg/m<sup>3</sup>.

TVOC (AgBB/DIBT) C<sub>6</sub>-C<sub>16</sub>:after 28 days 38 µg/m<sup>3</sup>

Volatile aldehydes: 3 µg/m<sup>3</sup> (test report no. 392-2018-00053902)

A Material Health Certificate "Silver" from the Cradle to Cradle Products Innovation Institute is available for the product.

### SOC 1.3 Acoustic Comfort

Lindner double glazings can be equipped with acoustic elements.

### SOC 1.4 Visual Comfort

The Lindner Life Hybrid 622 consists mostly of glass. Therefore, daylight from the facades can reach the corridor.

## Technical Quality

### TEC 1.2 Sound Insulation

The Lindner Life Hybrid 622 can be designed with a sound insulation up to R<sub>w</sub>= 47 dB acc. to ISO 140-3.

### TEC 1.6 Deconstruction and Disassembly

The Lindner Life Hybrid 622 can be dismantled and replaced by using usual tools. Furthermore, you can clearly separate the components in order to recycle them.

## 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.

 **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 partition systems have a long life expectancy. Partition systems can be expected to remain durable for up to 50 years (acc. to BBSR table, code nr. 342.411, 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).

A project-specific life cycle assessment can be created for the product in compliance with the applicable standards ISO 14025, 14040, 14044 and EN 15804.

Additional time and costs may have to be taken into account for this.

**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.

cycle assessment may be provided if required.

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

Components	Weight proportion (%)	Recycling content (%)		Regionality Production location
		Pre-Consumer	Post-Consumer	
Tempered/ laminated safety glass	~ 94.3 %	20 %	5 %	Specific for project
Floor and ceiling profile	~ 3 %	0 %	30 %	Arnstorf
Floor and ceiling profile	~ 1.3 %	0 %	25 %	Arnstorf
Transparent adhesive tape	< 0.5 %	0 %	0 %	Arnstorf
Fitting spring	< 0.5 %	0 %	25 %	Arnstorf
Height adjustment bracket	< 0.5 %	0 %	25 %	Arnstorf
Glass angle	< 0.5 %	0 %	25 %	Arnstorf
Sealing	< 0.5 %	0 %	0 %	Arnstorf
Gasket strip	< 0.5 %	0 %	0 %	Arnstorf
Sound insulation inlay	< 0.5 %	0 %	0 %	Arnstorf
Total	100 %	~ 15.7 %		

The Lindner Life Hybrid 622 product does not contain any materials made of wood. FSC / PEFC certification is therefore not required.



### Materials and Resources

#### 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 (**R**egistration, **E**valuation and **A**uthorization 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

#### Minimum Acoustic Performance

The Lindner Life Hybrid 622 can be designed with a sound insulation up to  $R_w = 47$  dB acc. to ISO 140-3 and insulates the rooms from incoming noises.

#### Low Emitting Materials

Due to the low TVOC value, the Lindner Life Hybrid 622 positively contributes to the indoor air quality.

Coating on site is not necessary.

TVOC (AgBB/DIBT) C6-C16: after 28 days 38  $\mu\text{g}/\text{m}^3$

Volatile aldehydes: < 3  $\mu\text{g}/\text{m}^3$  (test report no. 392-2018-00053902, Eurofins).

A Material Health Certificate "Silver" from the Cradle to Cradle Products Innovation Institute is available for the product.

#### 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

Lindner partition systems are made from materials that show almost no emissions of e.g. VOC and formaldehyde.

TVOC (AgBB/DIBT) C6-C16: after 28 days 38  $\mu\text{g}/\text{m}^3$

Volatile aldehydes: < 3  $\mu\text{g}/\text{m}^3$  (test report no. 392-2018-00053902).

A Material Health Certificate "Silver" from the Cradle to Cradle Products Innovation Institute is available for the product.

#### Daylight

The Lindner Life Hybrid 622 consists mostly of glass. Therefore, daylight from the facades can reach the corridor.

#### Acoustic Performance

The Lindner Life Hybrid 622 can be designed with a sound insulation up to  $R_w = 47$  dB acc. to ISO 140-3.

Lindner double glazings can be combined with acoustic elements. Depending on the design, sound absorption values up to 1.0 are possible. The values have been tested in the reverberation room acc. to ISO 354 and have been scored acc. to DIN EN ISO 11654.

**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 (C2C). Partition systems can be expected to remain durable for up to 50 years (acc. to BBSR table, code no. 342.411, 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 Life Hybrid 622 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.

TVOC (AgBB/DIBT) C6-C16: after 28 days 38 µg/m

Volatile aldehydes: < 3 µg/m<sup>3</sup> (test report no. 392-2018-00053902).

A Material Health Certificate "Silver" from the Cradle to Cradle Products Innovation Institute is available for the product.

**Hea 05 Acoustic performance**

The Lindner Life Hybrid 622 can be designed with a sound insulation up to  $R_w = 47$  dB acc. to ISO 140-3.

Lindner double glazings can be combined with acoustic elements. Depending on the design, sound absorption values up to 1.0 are possible. The values have been tested in the reverberation room acc. to ISO 354 and have been scored acc. to DIN EN ISO 11654.

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

Lindner partition systems are made from materials that show almost no emissions of e.g. VOC and formaldehyde.

Test chamber measurements according to the AgBB test method are available as proof.

TVOC (AgBB/DIBT) C6-C16: after 28 days 38 µg/m (test report no 392-2018-000188002, Eurofins).

**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 partition systems 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.

 **Waste****Wst 01 Construction waste management**

Lindner partition systems 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. Partitions can be expected to remain durable for up to 50 years (acc. to BBSR table, code nr. 342.411, 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.

 **Pollution****Pol 05 Reduction of noise pollution**

The Lindner Life Hybrid 622 can be designed with a sound insulation up to  $R_w = 47$  dB acc. to ISO 140-3. Lindner glazings can be combined with acoustic elements. Depending on the design, sound absorption values up to 1.0 are possible. The values have been tested in the reverberation room acc. to ISO 354 and have been scored acc. to DIN EN ISO 11654.





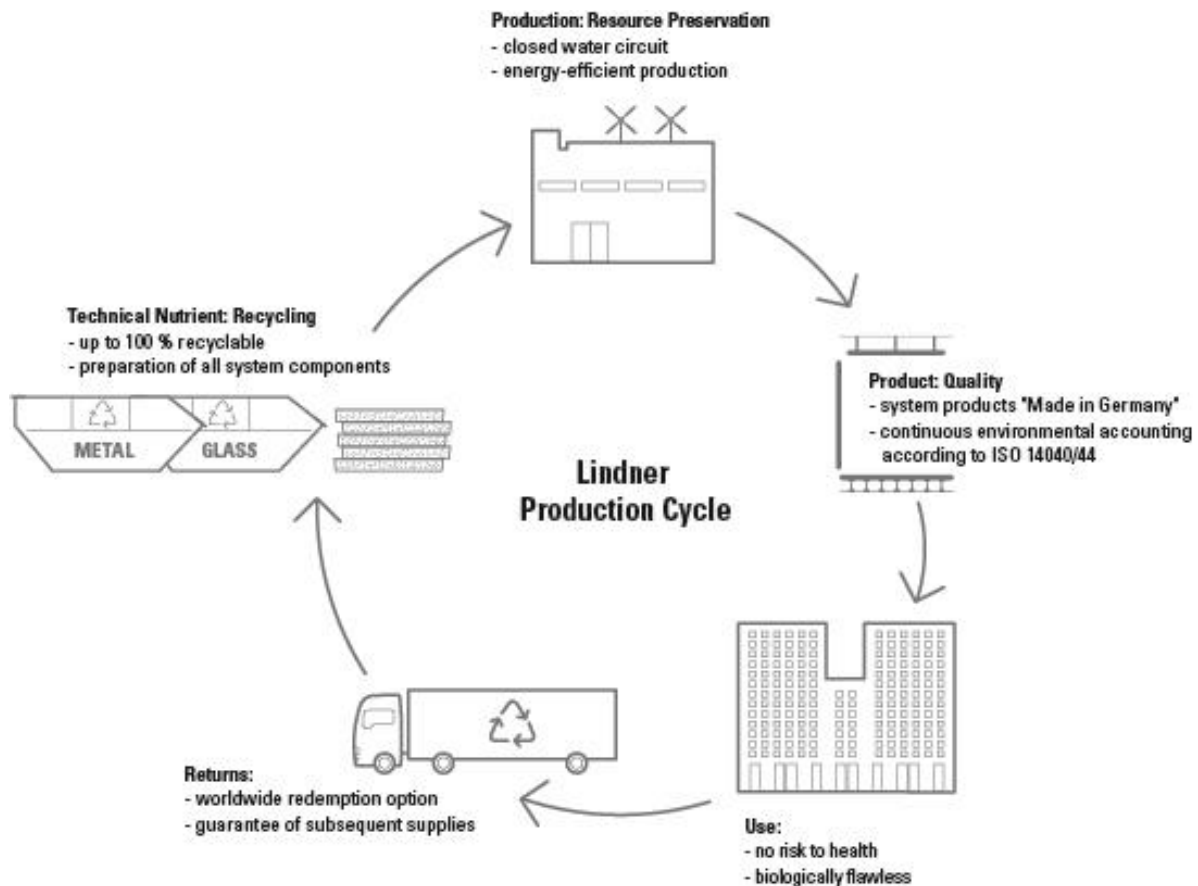
**PRODUCT CERTIFICATION CRADLE TO CRADLE®**

**Information on Cradle to Cradle®**

The partition system Lindner Life Hybrid 622 has a Cradle to Cradle® certification TM in silver.  
Certificate number: 4385

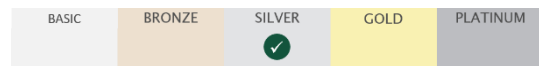
Due to the transfer of the Circular Economy thoughts we avoid waste, toxic substances and pollution. The 100 % technical cycle we are striving for, allows a separation of types and nearly a whole reuse of all materials.

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





### Material Health



The parts of the Lindner Life Hybrid 622 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. Emission tests to national- and international standards (for example AgBB-scheme) assure pollutant-free and unobjectionable materials.



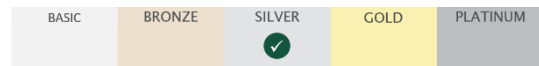
### Material Reutilization



The Lindner Life Hybrid 622 is a product which can be recycled or further recovered. Therefore, complete components can be reused or new created, after transferring to recycling processes. In the end of the use phase all ingredients can be sorted separately.



### Renewable Energy



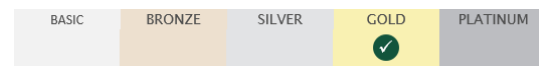
Through eco-management certification and our in-house environmental accounting, the whole Lindner Group campaigns for a reduction of the ecological footprint of their own production processes by using less energy.

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.