

Building  
New Solutions

Business Division  
Building Envelope

 **Lindner**



A strong Unit made  
of Wood and Aluminium

**Lindner ECO\_N<sup>®</sup>**

# Lindner ECO\_N®

Hybrid Element Façade made  
of Wood and Aluminium

The ECO\_N is the first hybrid façade among the Lindner element façades: The combination of timber modules and aluminium unites economy with sustainability.

- **Sustainability**  
Using pure materials for a consistent circular economy
- **Sleek Design**  
Optimum interaction of aluminium profile and timber module due to form closure
- **Flexibility in terms of Building Physics**  
Compatibility with the aluminium system Lindner ECO® opens up wet room use with the same outfit
- **Preventive Fire Protection**  
Non-combustible materials in ceiling connection area
- **Freedom of Design**  
Optional features such as LED modules or various joint designs
- **Innovative Strength**  
Patented functional parts and force-locking technology
- **Durability**  
Constructive wood protection guaranteed





# Sustainability in Focus

## CO<sub>2</sub>-neutral Timber Module

**The reference to sustainability and CO<sub>2</sub>-neutrality naturally moves the material wood into the focus of façade assessment. The effect of upgrading the building through a good classification is obvious.**

The special wood material demands a different approach to technical implementation, similarly with aluminium construction. Lindner offers a solution for this by combining a proven basic construction made of aluminium with a statically effective timber module.

In addition to the patented components such as the spring clip mounting and the PA pressure strip, a new innovation is used: the dovetail connection of the timber module with the aluminium

profile. Extensive design options also enrich the new building envelope.

The prefabrication of the system elements in the production hall enables the best quality assurance – the prerequisite for rapid, on-time installation at the construction site. Lindner relies on transparent and thus comprehensible documentation with regard to life cycle assessment and environmental management: In the hybrid façade, pure materials with the highest recyclability are used. The guarantee of longevity, from which the sustainability of the product is derived, offers the investor long-term value retention of the property.

- Lindner ECO\_N® consistently separates the timber module from the rebate/functional level, which is affected by moisture. The durability thus corresponds to that of a proven aluminium façade.
- The aluminium content can be reduced in the façade element with the help of the static wood module, which represents an enormous ecological added value.
- The consumption of energy used to heat and cool the building is significantly reduced due to the thermal insulation properties of the façade.



# Materials Cycle

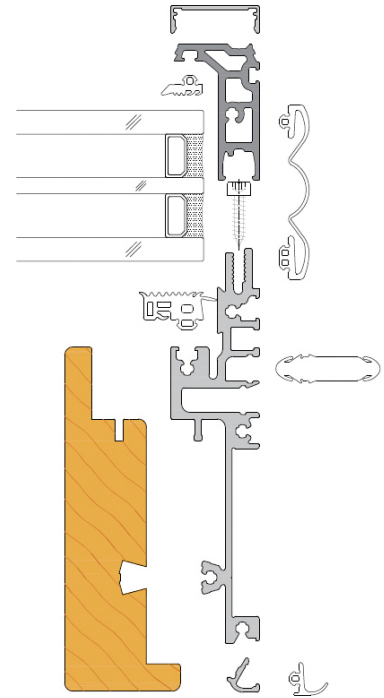
Separability, Reusability and Recyclability through Pioneering Product Design

## Use of Pure Materials

In the hybrid façade, pure materials with maximum recyclability are used. Lindner ECO\_N® consists of environmentally classified materials. Furthermore, the joining process is purely mechanical.

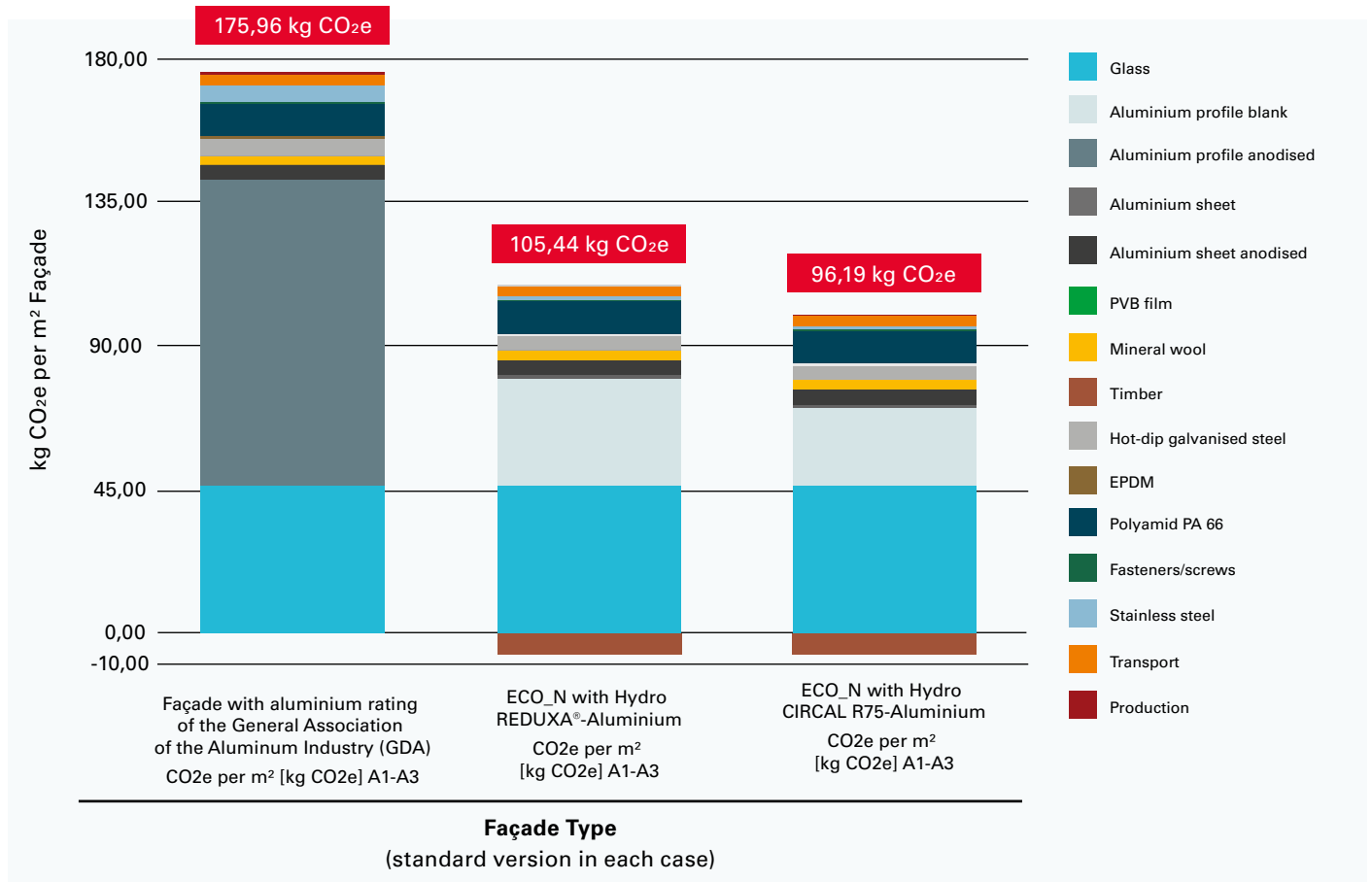
At the end of use, separation of the materials by type is possible without great effort.

Due to the selection of high-quality components with a long lifetime, individual components can be reused even after their actual period of use.



# Reduction of Carbon Dioxide

Saving CO<sub>2</sub>-intensive Aluminium by Using Wood and Hydro REDUXA®

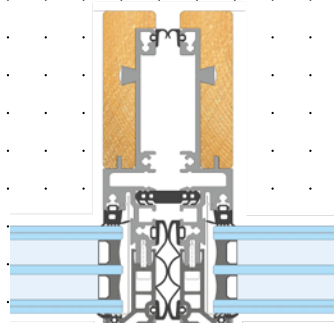
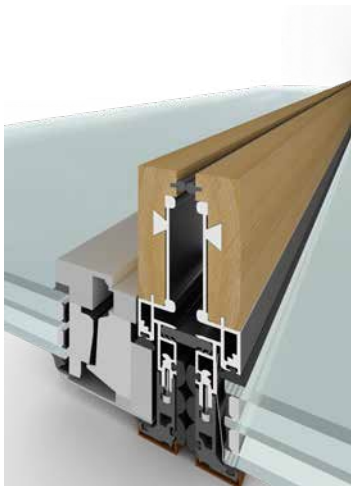


# Product Variants

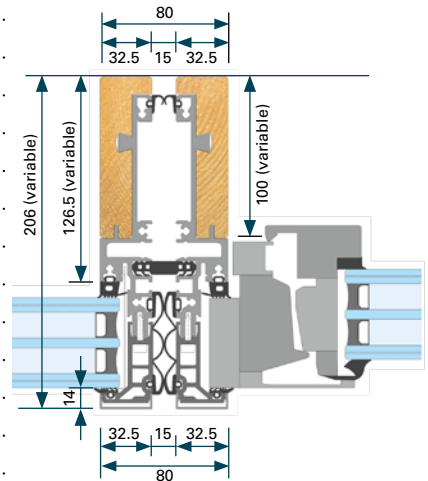
## Lindner ECO\_N® 80

Combination of a coloured aluminium part with timber module

**Visible width inside:** 80 mm | **Visible width outside:** 80 mm (2 x 32.5 mm ceiling strip + 15 mm joint)



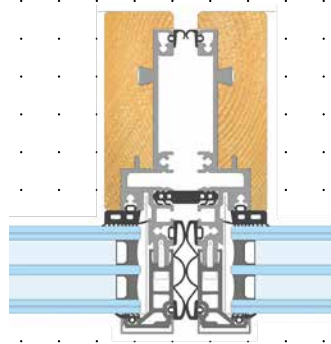
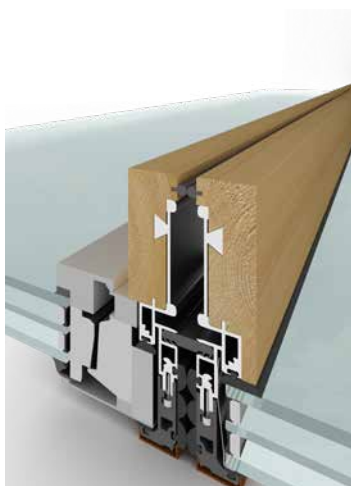
**Narrow line of sight,  
visible combination  
of timber and aluminium**



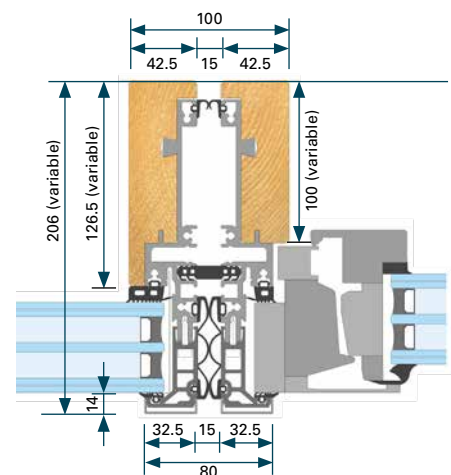
## Lindner ECO\_N® 100

Full-timber view

**Visible width inside:** 100 mm | **Visible width outside:** 80 mm (2 x 32.5 mm ceiling strip + 15 mm joint)



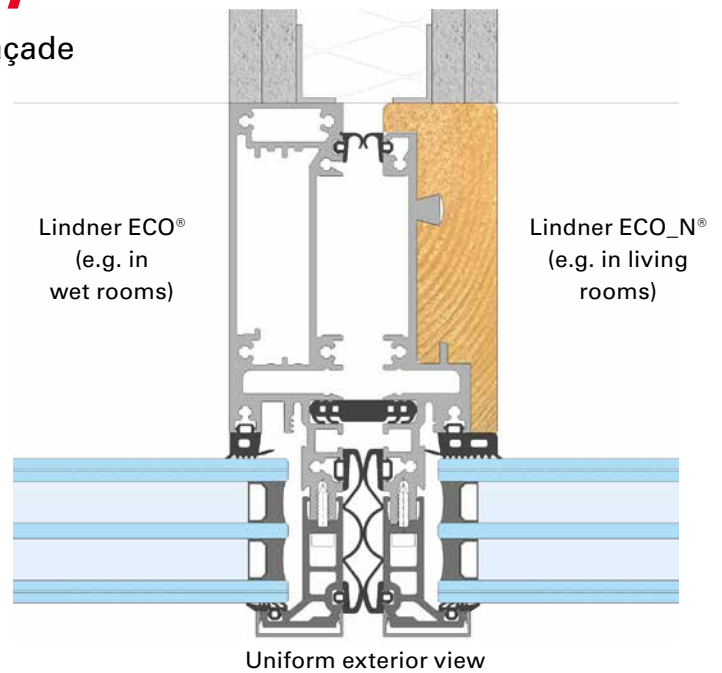
**Timber look**



# System Compatibility

## Combination of the Hybrid and Aluminium Façade

- Individual design freedom
- Various types of wood available in addition to coloured aluminium
- Individual reactions to the building's physical requirements of different room environments
- Combination of hybrid and aluminium profiles within one element (e.g. transom in aluminium, mullion in wood view)
- Uniform exterior view (80 mm)
- Uniform profile geometry



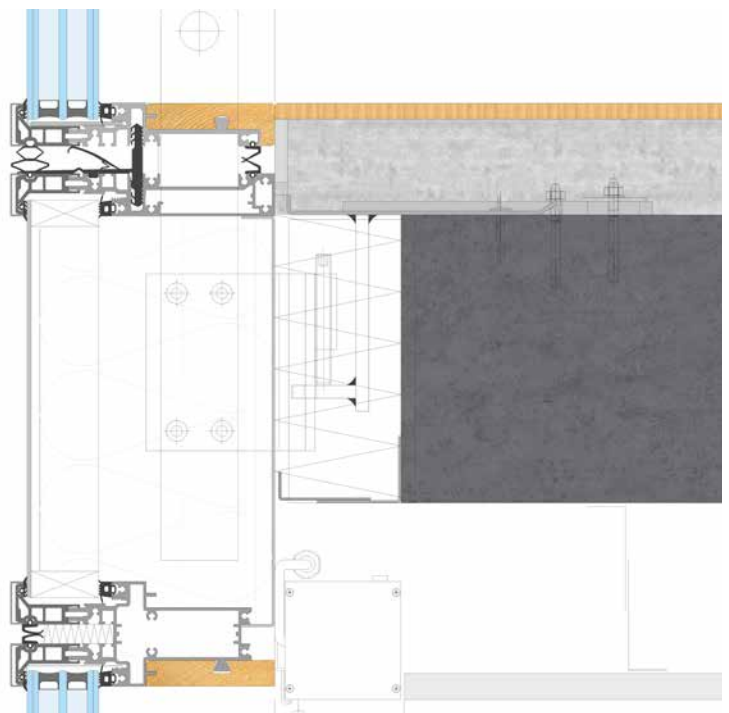
# Preventive Fire Protection

## A Construction-related Consequence

Only non-combustible materials are used in the ceiling connection area to ensure maximum safety. The timber module can be statically compensated.

The force connection of the façade elements to the building envelope takes place without a direct fire load, so that possible fire-promoting sources in this area are avoided.

The high stability of the hybrid system offers enormous advantages in terms of passive fire protection, which positively affects the fire protection concept of the building. The fire and smoke compartmentalisation from storey to storey takes place in the standard way as with conventional aluminium façade elements.



# Durability

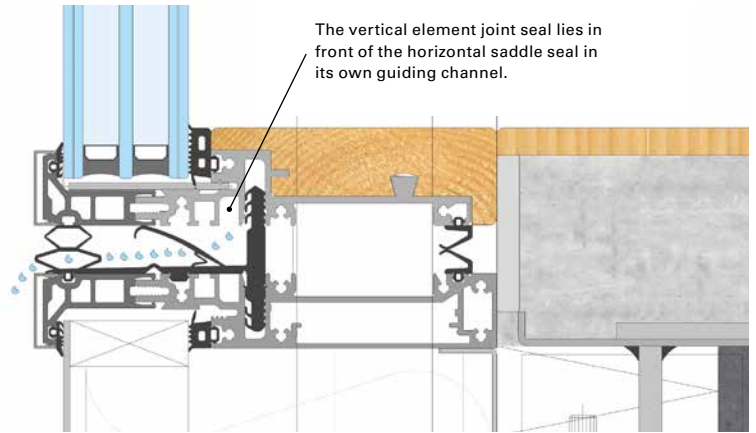
## Economically and Ecologically Valuable

Proven sealing and drainage levels (cascade drainage system) ensure the functional efficiency of the curtain wall.

The aluminium profiles exposed to moisture are clearly separated from the dry area of the timber modules.

Due to the dovetail form closure on the aluminium profile, the specific swelling and shrinking properties of the wood are not affected by anything.

The different materials find their best place in the system in terms of quality, so that the ECO\_N convinces with excellent durability and longevity.



# Performance Features

### Wood Species (PEFC certified)

Softwood/coniferous wood	Spruce, fir, larch, douglas fir (solid glued timber, finger-jointed)
Hardwood/deciduous wood	Solid oak, oak composite (soft wood core inside, hardwood outside)

### Surfaces (material ecologically tested)

Glazed, oiled, lacquered

### Safety

Fall protection according to DIN EN 18008-4 Category A

### Performance Test

Curtain wall according to DIN EN 13830:A4 | RE750. General building authority test certificate No. P-0300222-PFB

### Statics

ECO\_N 80 (standard version)  $I_x = 190 \text{ cm}^4$  |  
Standard element 1.35 x 3.5 m (3 m wood module height) with 1.45 kN wind load capacity

ECO\_N 100 (standard version)  $I_x = 220 \text{ cm}^4$  |  
Standard element 1.35 x 3.5 m (3 m wood module height) with 1.7 kN wind load capacity

Aluminium: FNAW-6060 T66

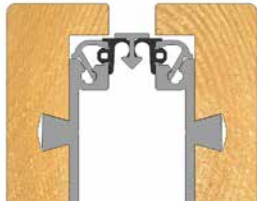
Wood: Spruce S13/GL30

Basically: The system is flexible for the project-specific static requirements.

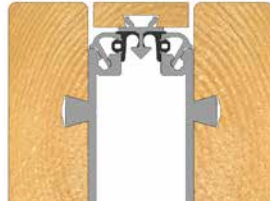


# ECO\_N Variants

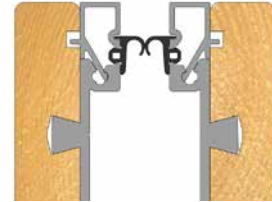
## Material Change/Material Combination/Joint Design



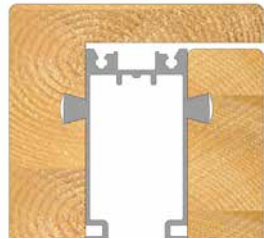
**Aluminium clip joint strip**  
Coloured alu profiles |  
coloured silicone gaskets



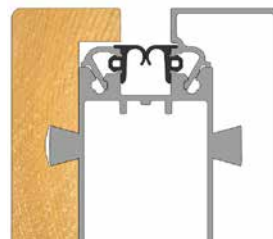
**All-timber look**  
Wooden cover  
of the butt joint



**Aluminium adapter profile  
with gasket**  
Timber embedded in  
coloured alu

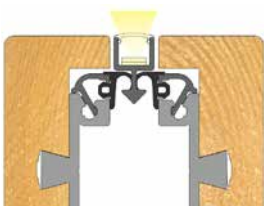


**All-timber look**  
Wooden cover  
of the butt joint

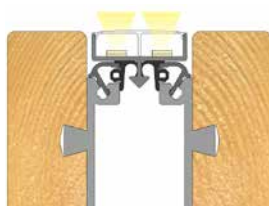


**Timber-aluminium combination**  
with sealing joints

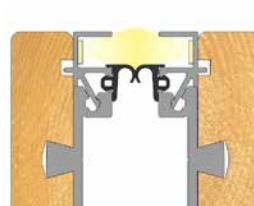
## Interior Lighting/LED Modules



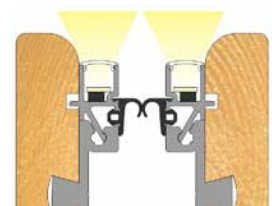
**Linear direct  
LED lighting**  
as joint design at  
the element joint



**Linear direct two-fold  
LED lighting**  
as joint design  
at the element joint



**Linear indirect  
LED lighting**



**Linear direct  
LED lighting**  
reversible; uncomplicated  
integration of the  
electrical supply lines

# Wooden Innovation ECO\_N

## Sustainable Building Technology with „Green“ Exterior Facade

**1** Lindner's new system innovation is based on the proven, statically highly effective dovetail connection, which allows the wood to naturally expand and contract.

**2** The sealing of the element system occurs cascadelike within the aluminium area.

**3** When fusing wood and aluminium profiles, the different properties of both materials are carefully coordinated and optimally utilised.

**4** The CO<sub>2</sub> reduction through the use of wood promotes true sustainability by permanently protecting the wood from moisture.

**5** Lindner ECO\_N® impresses with a high-quality, modern appearance and meets the criteria for the "Quality Seal Sustainable Building". The facade with wooden modules creates an immediate connection to nature through their aesthetics.



Find out more about  
Lindner ECO\_N®



# Rethinking Spaces

## Add.Vantage

Over time, the Lindner Group has developed into a technically sound, solution-oriented and reliable partner with a rock-solid commercial footing. Our comprehensive product and service portfolio for building envelopes, interior fit-out and insulation in almost all fields of application is second to none. True to the motto "Rethinking Spaces" we develop perfectly customised and yet versatile solutions and concepts for your building project.

As a 100% family-owned company we attach particular importance to our environment. With innovative concepts such as Cradle to Cradle Certified®, low-emission products and well thought-out room concepts we create Add.Vantage for people and their environment. As a service provider and employer we place people at the centre of our activities. Our customers notice this too: We enjoy our work, have conviction in what we do and are proud of what we are capable of achieving.

## Stability and Growth

Our head office has been in Arnstorf in Lower Bavaria, where we have seen massive growth in recent decades since the company was founded in 1965 by Hans Lindner. We are proud to be the largest employer in the Rottal-Inn district with some 7,100 employees worldwide. We handle 2,500 projects on a daily basis, mostly revolving around our core business of construction. This is complemented by our foundation, the mk | hotels, microbreweries and – most recently – sustainable agriculture and forestry.



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