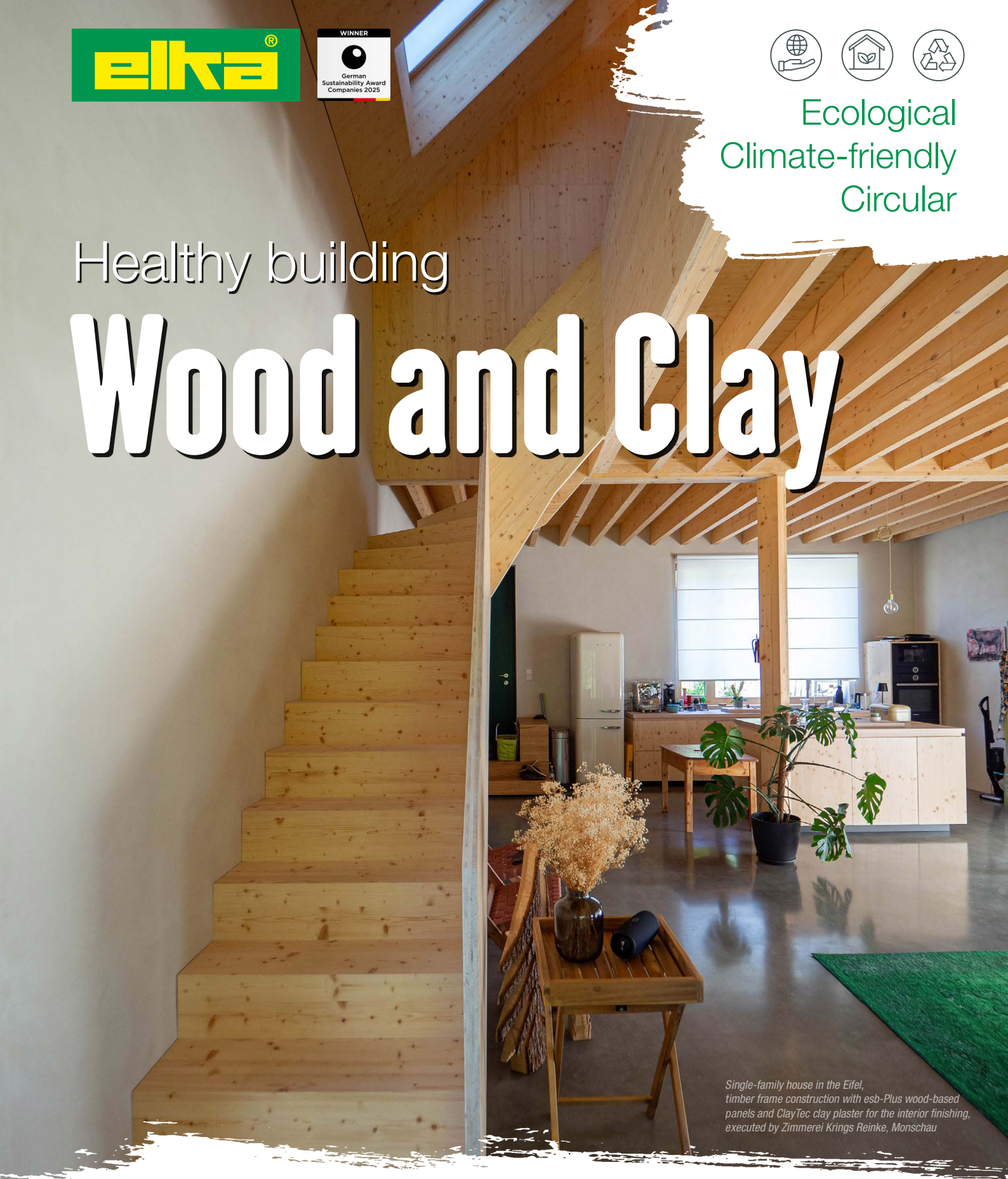




Ecological  
Climate-friendly  
Circular

Healthy building

# Wood and Clay



*Single-family house in the Eifel,  
timber frame construction with esb-Plus wood-based  
panels and ClayTec clay plaster for the interior finishing,  
executed by Zimmerei Krings Reinke, Monschau*



ClayTec clay building products and esb-Plus wood-based panels from elka

**The innovation in climate-friendly building**





## esb-Plus – The healthy living building board from elka-Holzwerke

The esb-Plus is the health-friendly wood-based panel for structural timber construction. It is made primarily from local spruce wood with low VOC emissions and ensures an excellent, odor-neutral indoor climate.

The unique production process at elka, with an integrated sawmill, keeps CO<sub>2</sub> emissions low. In addition, only regional wood sourced within a maximum radius of 150 km is used.

The panel convinces with outstanding technical properties: it offers 40% higher transverse tensile strength and reduced swelling.

- › Low VOC emissions thanks to the use of spruce wood
- › Very low formaldehyde emissions, formaldehyde content  $\leq 0.03$  ppm  
Specifically suitable for certified structural timber construction and prefabricated housing. Certified with Blue Angel and Sentinel Haus
- › No use of reclaimed wood, sustainable regional timber (<150 km)  
PEFC certification available
- › Largely vapor-permeable panel
- › Sanded surface
- › Excellent technical and structural properties (equally strong in both directions)
- › Available either square-edged or with all-round tongue & groove



Lehm in Bestform.

## ClayTec Clay Plaster – for a sustainably healthy indoor climate

**Reed lath** is a natural building material plaster base that has been rediscovered and further developed by ClayTec.

**Clay undercoat plaster with straw** is the classic solution for climate-effective clay plasters. The material is easy to apply and forms the basis for all ClayTec top plasters. Particularly eco-friendly is the cost-efficient moist delivery form in big bags.

**Clay topcoat fine 06** is the simple alternative: with this product, fine surfaces can be produced quickly and economically. Finally, the surfaces are finished with ready-to-use ClayTec clay paint.

**YOSIMA clay design plaster** offers colorful walls finish with clay and loam. In this product, clay serves both as binder and colorant. YOSIMA is available in 146 refined, harmonious earth tones.

- › Sustainable, ecological, and circular wall coatings made from ClayTec clay plasters as a system
- › Machine-compatible plaster mortars for professionals, but also suitable for manual application
- › Individual interior design with natural colors and surfaces
- › Excellent indoor climate thanks to thermal mass and moisture buffering, water vapor adsorption class WS III according to DIN 18947



Dachverband Lehm e.V.





# Tradition meets future: Healthy building with wood and clay

For centuries, people have been building with wood and clay – natural materials that create comfort, durability, and a healthy indoor climate. Our ancestors already knew how important breathable walls and beneficial materials are for everyday life. Wooden beams, clay plasters, and clay walls have kept houses stable and comfortable for generations and still stand today as a building method that brings people and nature into harmony.

This traditional building method combines with modern knowledge to create a contemporary, healthy living environment that places the value of sustainability and the well-being of the residents at its center.



*Villa V: Professional restoration of the pastel green clay plaster with YOSIMA design plaster (Photo: ClayTec)*



*Ecological renovation of a residential building as part of the well-known Mainzer Tempelhof (Photo: Matthias Bender)*





❶ Wood-based panel **esb-Plus P5 tongue & groove** for certified structural timber construction and prefabricated housing.

❷ **Reed matting St 70** Fastening on walls with galvanized staples at least 16 mm long, spacing 50–70 mm. The continuous, thicker base wire must face the room side, so that the reeds are stapled to the substrate and, together with the plaster system, are securely fixed in the long term.

❸ **Clay undercoat plaster with straw** Apply in 12 mm thickness using a plastering machine or by hand. While still wet, embed **glass mesh** well into the surface, with approx. 100 mm overlap of the mesh strips. Rapid drying of the plaster must be organized and monitored.

❹ **Clay topcoat fine 06** After complete drying of the undercoat, apply in 2–3 mm thickness. The surface is usually finely rubbed.

❺ **YOSIMA clay design plaster** Apply in 2 mm thickness after drying. The surface is usually final grated.

As an alternative, a simple coating with ready-to-use **ClayTec clay paint** is possible, as well as the **ClayFix clay paint system**, which – like YOSIMA – is available in 146 earth tones.

For each product, all ClayTec application instructions must be observed (see [www.claytec.de](http://www.claytec.de))



❶ Construction in timber frame design, interior cladding of the walls with **esb-Plus** wood-based panels.



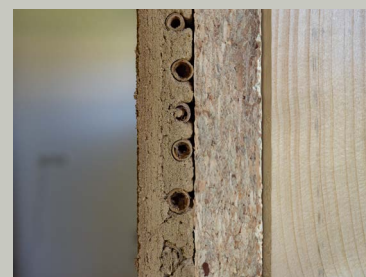
❷ Installation of reed matting **St 70** as plaster carrier directly onto the **esb-Plus** panels.



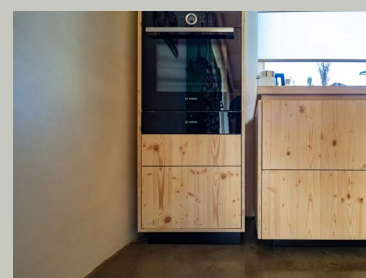
❸ Machine application of **ClayTec Clay** undercoat plaster with straw



❹ ❺ **YOSIMA clay design plaster** is usually finely grated. Surface finishing should be carried out with only a small amount of water.



The reed matting adheres to the **esb-Plus** wood-based panel by stapling, and the plaster system adheres to the reed matting.

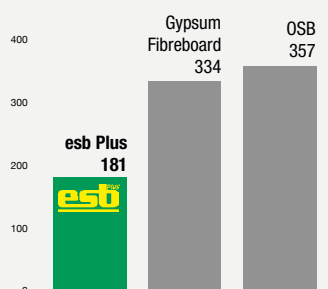


Finished wall design

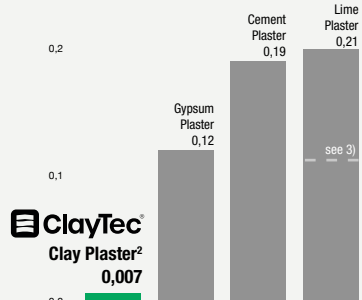
The new dream team: **ClayTec clay plaster** and the **esb Plus** wood-based panel from **elka** – an unique innovation on the European market.

**2x better climate protection with a low CO<sub>2</sub> footprint!**

GWP<sup>1)</sup> (Global Warming Potential) [kg CO<sub>2</sub>] per m<sup>3</sup>



GWP<sup>1)</sup> [kg CO<sub>2</sub>] per kg rendering mortar  
DIN EN 15804:2018 Module A1-A3



<sup>1)</sup> GWP = Global Warming Potential of a substance and thus its contribution to the warming of the near-surface air layer. The calculation values are based on the contents of ÖKOBAUDAT and the Environmental Product Declaration chipboard/esb (EPD), available at [www.elka-holzwerke.de/downloads](http://www.elka-holzwerke.de/downloads)

<sup>2)</sup> Earth-moist; source UPD\_LPM\_CLAY2018001\_PKR04-DE, Dipl.-Ök. Manfred Lemke

<sup>3)</sup> 0.11 including the carbonation effect according to Module B5 DIN EN 15804:2018



## ClayTec clay boards and wood fiber boards in combination with esb-Plus panels from elka

### Ecological drywall systems

❶ Wood-based panel **esb-Plus P5 tongue & groove** for certified structural timber construction and prefabricated housing. The esb-Plus panel is the healthy and sustainable alternative to OSB panels. It is listed in the DGNB Navigator (German Sustainable Building Council) and certified with the Blue Angel and Sentinel Haus.

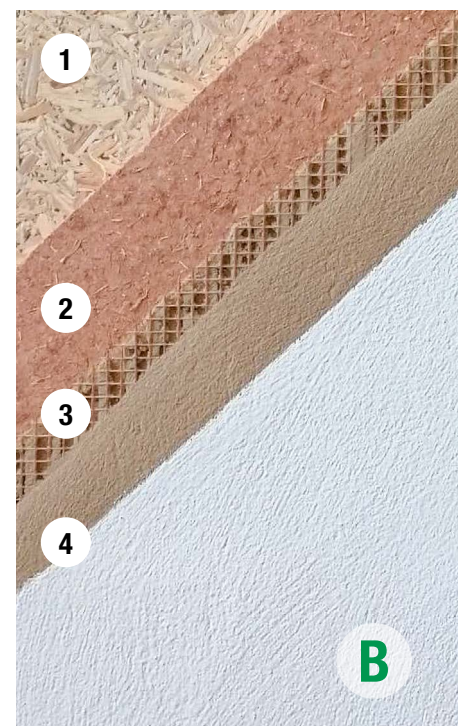
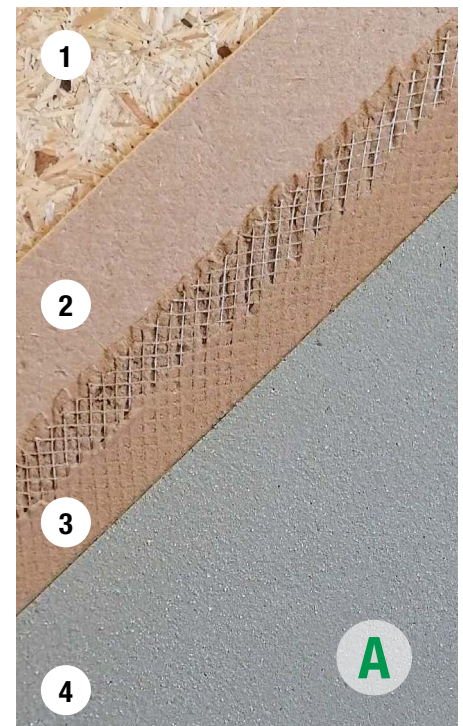
❷ **A Wood fiberboards (HFA) thin 8mm**, fixed with staples (e.g. haubold 650402 KG 725, resin-coated Cnk 12 mm, ETA). The staple length should be chosen according to the panel thickness, but must not penetrate the panel. Stapling distance horizontally and vertically  $\leq 150$  mm, edge distance approx. 25 mm. Drive in staples diagonally and flush with the surface, not countersunk. If screws are used, proceed analogously.

❸ **B ClayTec clay board solar D22; clay board heavy D16/22** fixed with staples (e.g. haubold 574947 KG 745, resin-coated Cnk 12 mm, ETA). The staple length should be chosen according to the panel thickness but must not penetrate the panel. Stapling distance horizontally and vertically  $\leq 150$  mm, edge distance approx. 25 mm. Drive in staples diagonally and flush with the surface (not countersunk). If screws are used, proceed analogously.

❹ **Clay adhesive and reinforcing mortar** Fill joints  $\geq 1$  mm wide across the full depth, also close staple or screw holes and any defects. After drying, level out any differences in thickness at the joints across the panel surfaces. Once dry, apply and align reinforcing mortar in approx. 3 mm thickness. Place glass fibre mesh 112 onto the wet reinforcing mortar, then smooth off with an aluminum straightedge or wide trowel across the overlap areas (double layer).

❺ **A YOSIMA clay design plaster** is the first choice for sophisticated interior design. It is available in 146 natural colors, without artificial pigments. After drying of the reinforcement layer, apply the plaster in 2 mm thickness. The surface is then grated with a sponge float.

❻ **B ClayTec clay paint (ready-to-use)** is a pasty and particularly easy-to-apply coating, which can be rolled or sprayed by airless sprayer. The ClayFix clay paint system is also suitable and is available in 146 earth tones, analogous to YOSIMA clay design plaster. As a primer for both variants, the reinforcement layer itself can serve as a base coat, provided the preparation is good. For this, clay adhesive and reinforcing mortar is applied fresh-in-fresh after the reinforcement layer has slightly set, in a thickness  $\geq 1$  mm, and then grated. As an alternative primer, clay topcoat fine 06 can be applied in 2–3 mm thickness onto the dry reinforcement layer and grated.







Ecological  
Healthy Living  
Circular



Single-family house in the Eifel, timber frame construction with esb-Plus wood-based panels and ClayTec clay plaster in the interior, executed by Zimmerei Krings Reinke.

# Healthy building with wood and clay



## The eco pioneer • Sawn timber & wood-based materials in perfection – since 1906

The family-owned company from Hunsrück low mountain range in southwest Germany has been committed for many years to healthy living, emission reduction, and sustainability. Elka is a member of the DGNB (German Sustainable Building Council) and its products are listed in the DGNB Navigator. In its modern sawmill, sawn and structural timber are produced, with part of the sawn timber being processed into three-layer natural wood panels, known under the brand name “elka vita.” The fresh sawdust and wood chips generated in the sawmill are processed into further wood-based materials such as chip-board and esb construction panels.

esb and esb Plus are brands of elka-Holzwerke and have been awarded several times by independent institutes – they were the first wood-based panels on the German market to be certified climate neutral in 2021.

**elka-Holzwerke GmbH • [www.elka-holzwerke.de](http://www.elka-holzwerke.de)**

Hochwaldstraße 44 • D-54497 Morbach • Phone +49 (0)6533 956-0 • [info@elka-holzwerke.de](mailto:info@elka-holzwerke.de)

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## ClayTec • Clay at its best.

ClayTec is Europe's leading manufacturer of clay building materials and an expert in resource-efficient solutions for solid and interior construction. Founded over 40 years ago as a specialist in monument preservation and half-timbered house restoration, the company today develops and markets mass-usable, ecological, and recyclable clay building products of the highest quality. The product range includes masonry mortars, internal insulation, clay plasters, and versatile clay drywall systems. Through research, development, and training, ClayTec promotes the professional use of clay building materials and supports architects, builders, and craftsmen in implementation.

This owner-managed family business, headquartered in Viersen, produces nationwide for an international market and employs around 80 staff members at six locations.

**ClayTec GmbH & Co. KG • [www.claytec.de](http://www.claytec.de)**

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### Technical Notes and Disclaimer

The instructions provided in the respective ClayTec product and application sheets must be strictly observed. Before starting plastering work, it is the sole responsibility of the user to check the substrate with regard to its construction and surface condition. Substrate suitability, application thickness, and surface appearance must always be verified by means of a sufficiently large test area. Claims for defects that do not result from factory mixing errors are excluded.