CÂNHAMOR

ECOblocks® Ibérica

Table of Contents

1. Sustainable Construction

Complete Wall System with ECOblocks 03

2. Essentials

Foundation and Structure 04
Protection of ECOblocks on Site 05
Prevention of Infiltration and Moisture 06
Application 07
Grooves 08
Correction of Thermal Bridges 09
ECOblocks in Roofing
- Flat Roof 10
- Pitched Roof 10

ECOblocks in Flooring 11
Renovation 12
Load Securing
- Securing of Heavy Loads 13
- Securing of Light Loads 13

Finishings
- Traditional Finishings 14
- Tile Finishings 14

3. Materials

Required Tools 15
Technical Information 16
Technical Data Sheet: Renovations 17
Technical Data Sheet: New Constructions 18
Technical Data Sheet: ECOpremium 19

Guide made in partnership with *Natura Matéria.*

Complete Wall System with *ECOblocks*

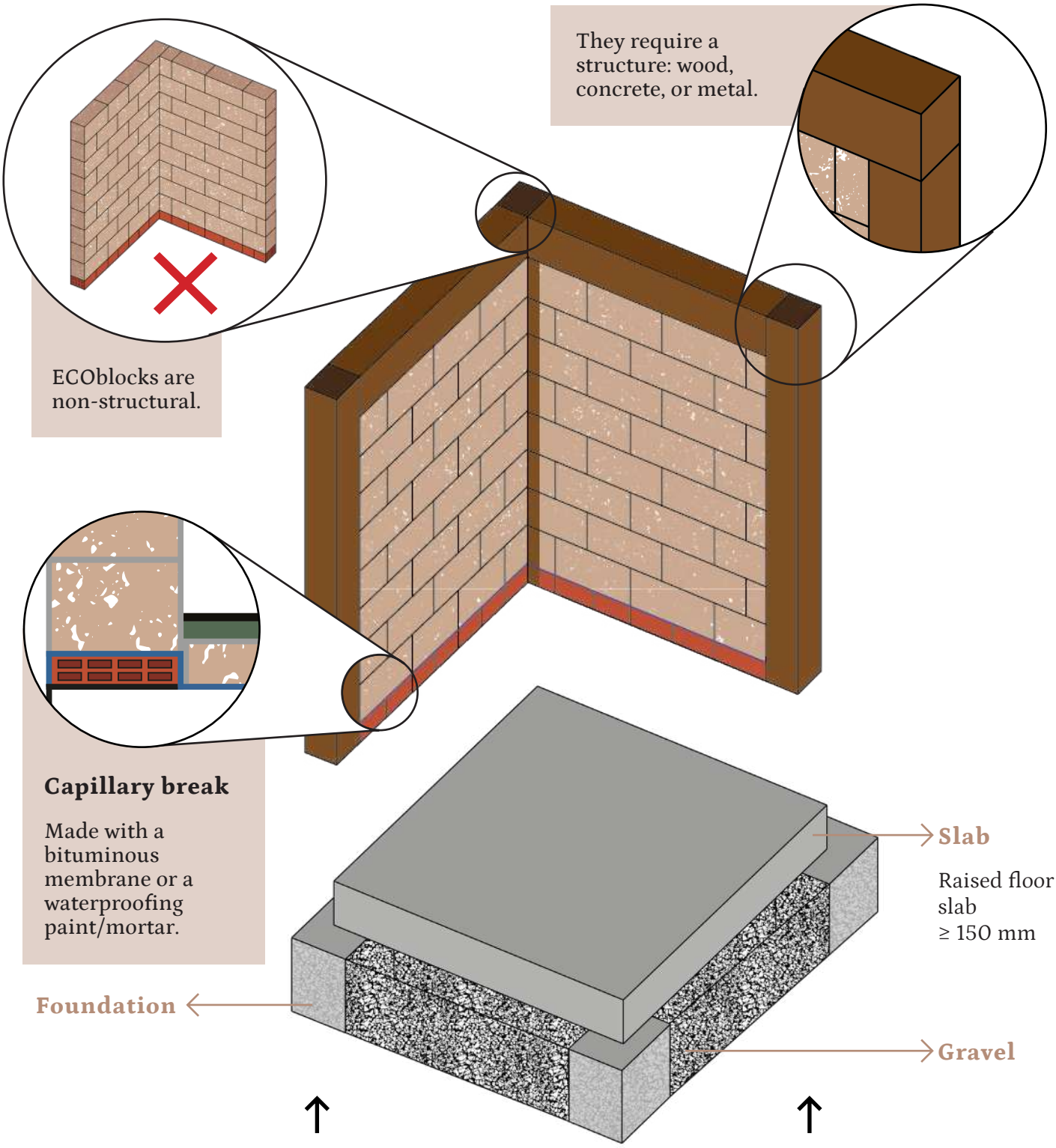
The Cânhamor complete wall system was developed to simplify on-site execution, integrating thermal performance, moisture regulation, and fire safety into a single construction solution. The reduction of layers and the elimination of additional systems contribute to greater installation efficiency, lower labor requirements, and better cost control.

ECOblocks are versatile and easy to work with, allowing on-site cutting and adaptation with simplicity, which facilitates execution and reduces the risk of errors. Proper application of the system also helps prevent future issues related to moisture.

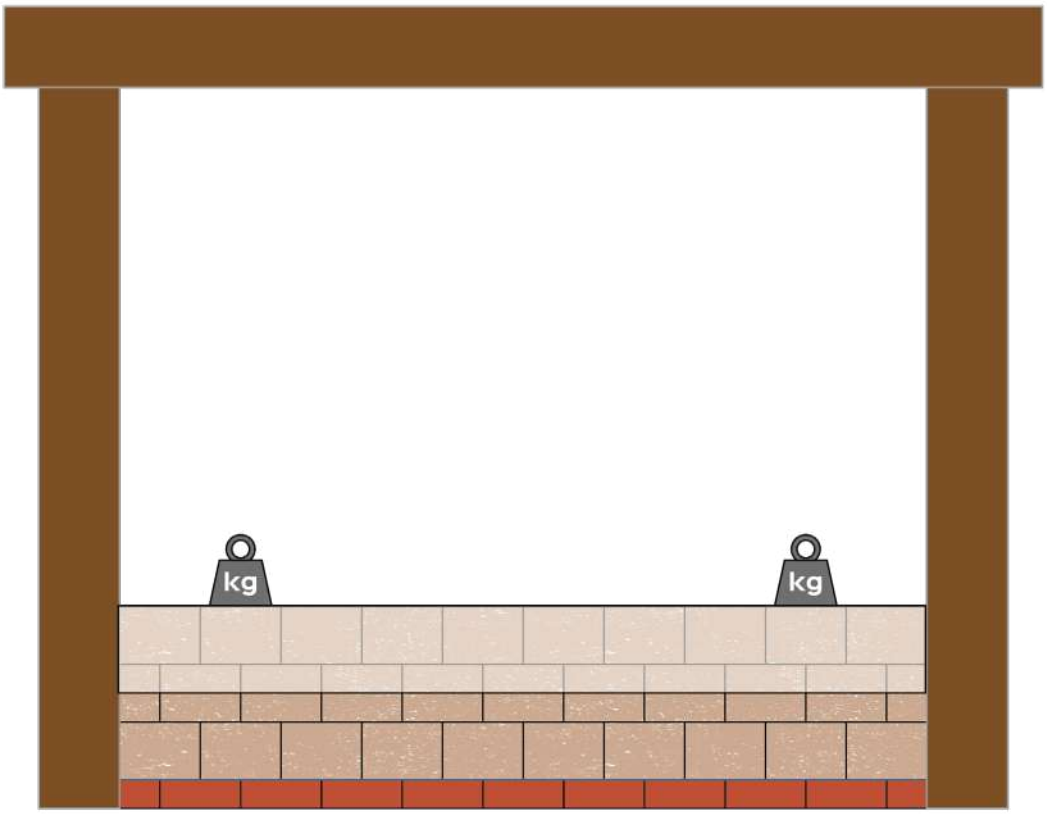
This guide is for informational purposes and does not replace consultation of applicable technical standards nor compliance with best construction practices, which are essential for the proper execution of the building.

Foundation and Structure

To ensure construction quality—whether using ECOblocks or other construction materials—the following best practices must be ensured:



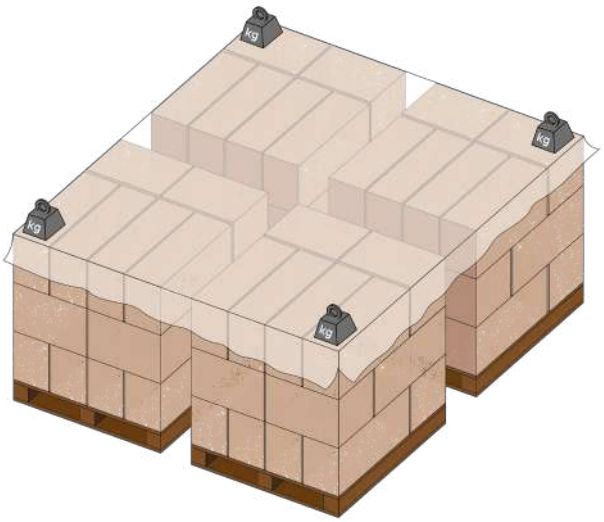
Protection of *ECOblocks on Site*



From the moment ECOblocks arrive on site, they should be stored in a well-ventilated indoor environment, or under an already completed roof.

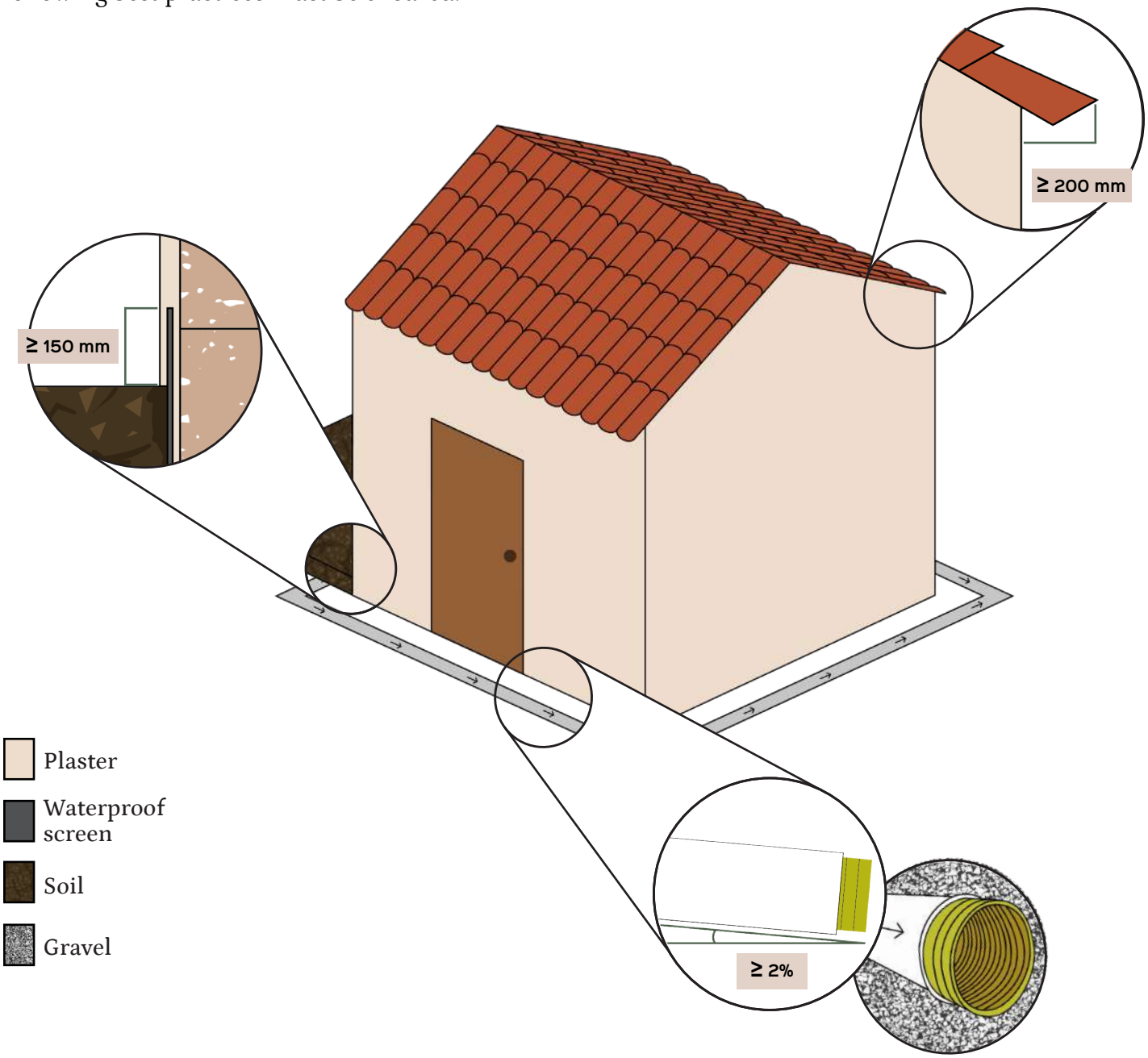
If this is not possible, they should be covered with a tarpaulin, as shown in the diagram on the right.

If it rains during the construction of the ECOblock wall, the top of the wall should be covered.



Prevention of *Infiltration and Moisture*

To ensure construction quality—whether using ECOblocks or other construction materials—the following best practices must be ensured:

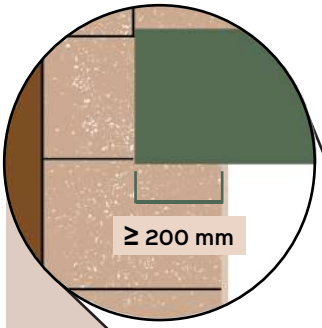


It is important to always start the construction with the roof, with proper waterproofing.

We recommend a traditional (pitched) roof with eaves all around, at least 200 mm. These are simple solutions and require less maintenance.

If the ECOblock is less than 150 mm above ground (or buried), the area must be fully waterproofed. If using bituminous membranes, first level the substrate with mortar. Do not apply directly onto the ECOblock.

Application

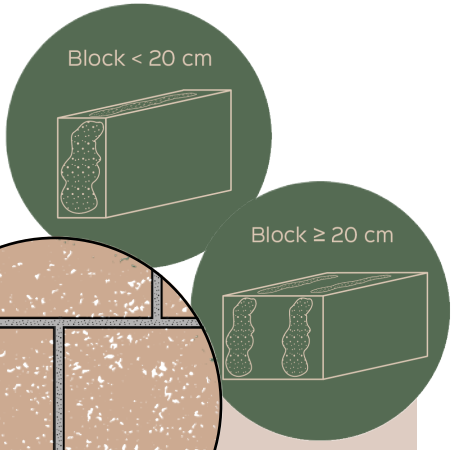


Lintels and Subsill

See how to correct the thermal bridge on page 9.

Brush off any loose material before laying;

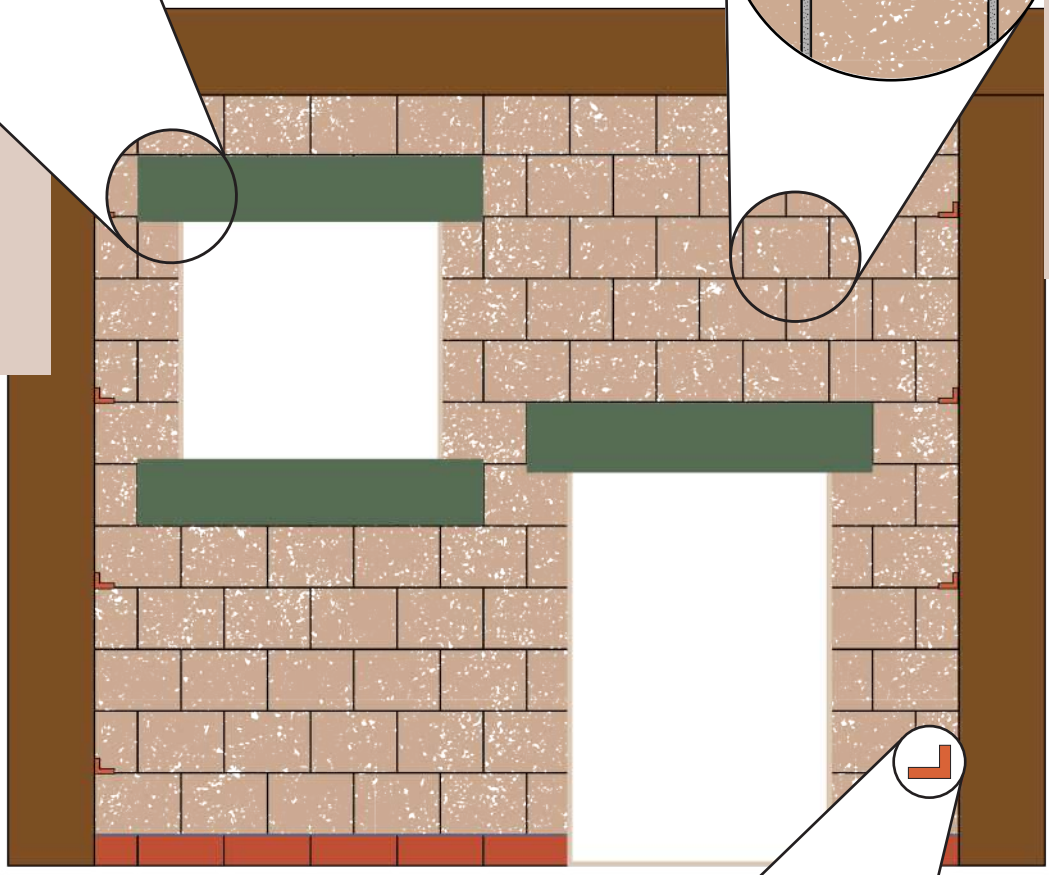
Dampen the blocks before applying the mortar.



Joints of +/-8 mm;

Lime based mortar;

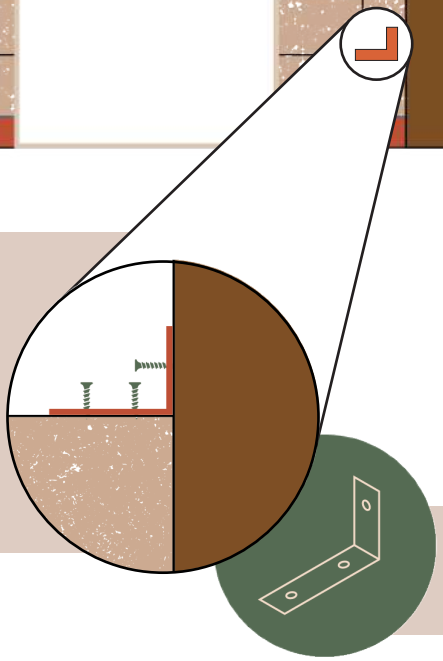
Never use cement.



Use every third layer;

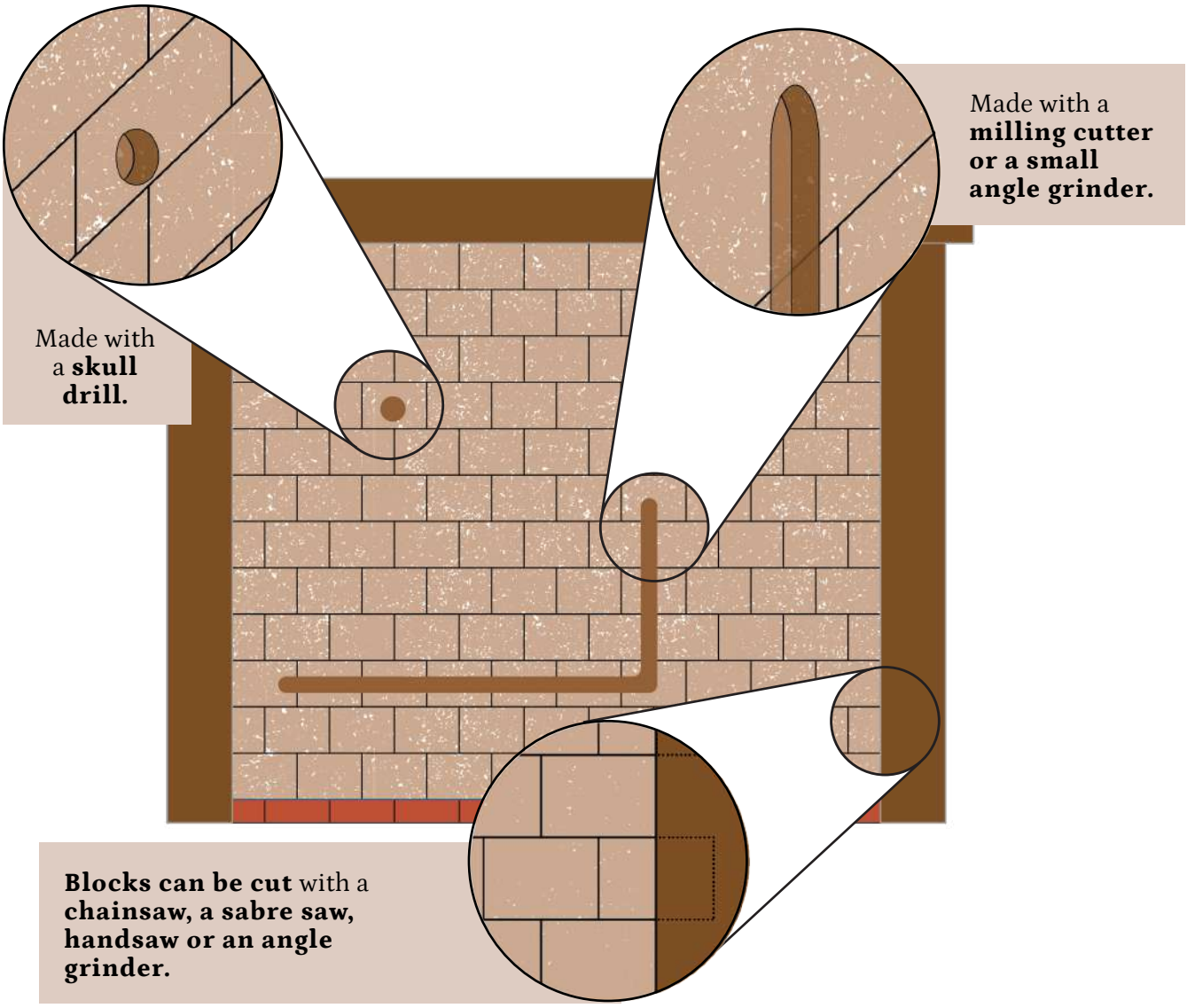
Use self-tapping screws in the ECOblocks;

Use chemical anchors in the structural column if it is made of concrete.



Check page 16.

Grooves

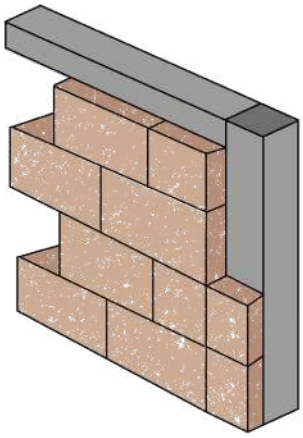


The generated waste can be reused by filling voids with a mixture of shavings, mortar, and water until the desired consistency is achieved.

Alternatively, the generated waste may be used as a fertilizer and/or soil amendment.

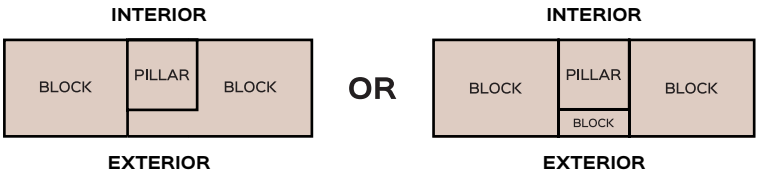
Correction of *Thermal Bridges*

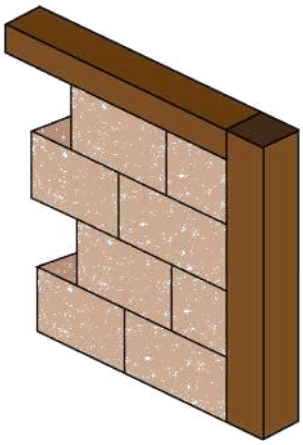
For thermal linings, use ECOblock 7 and/or ECOblock 11.



Concrete Structure

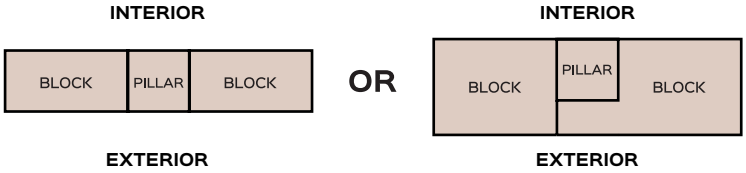
It is mandatory to use the block or another insulating material to correct the thermal bridge.

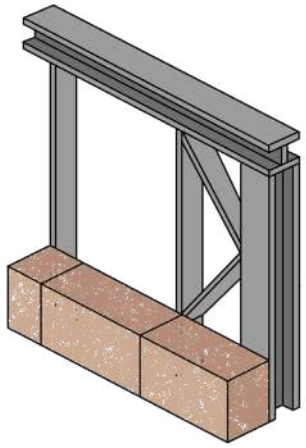




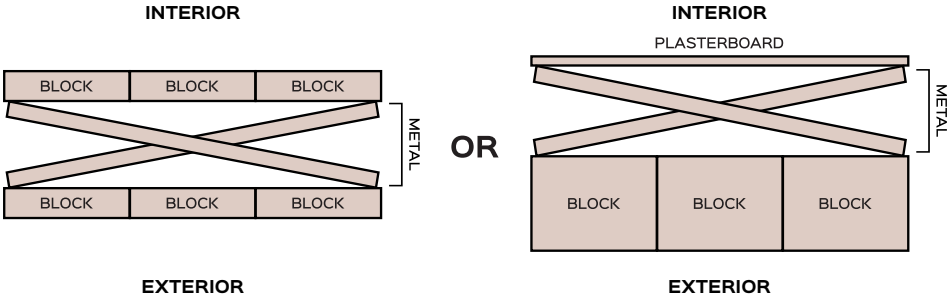
Wood Structure

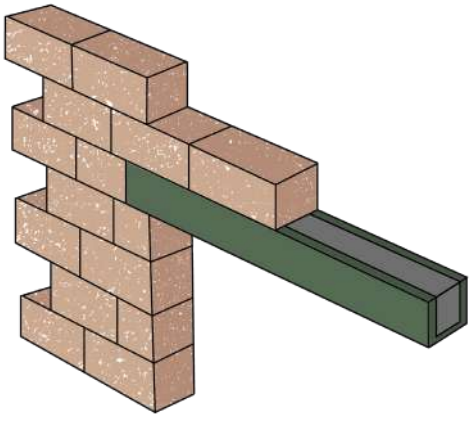
There is no need to correct the plane thermal bridge.





Light Steel Structure



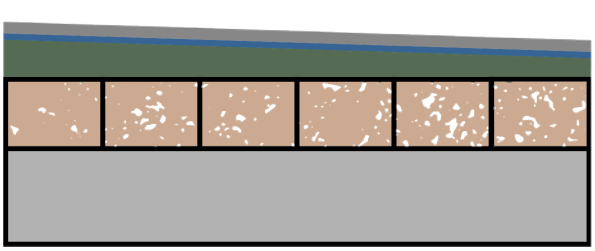


Lintel Spans

Wooden lintel: may have just one beam;
Concrete or metal lintel: needs thermal bridge;
Prefabricated lintel: concrete core with thermal bridge correction using hempcrete.

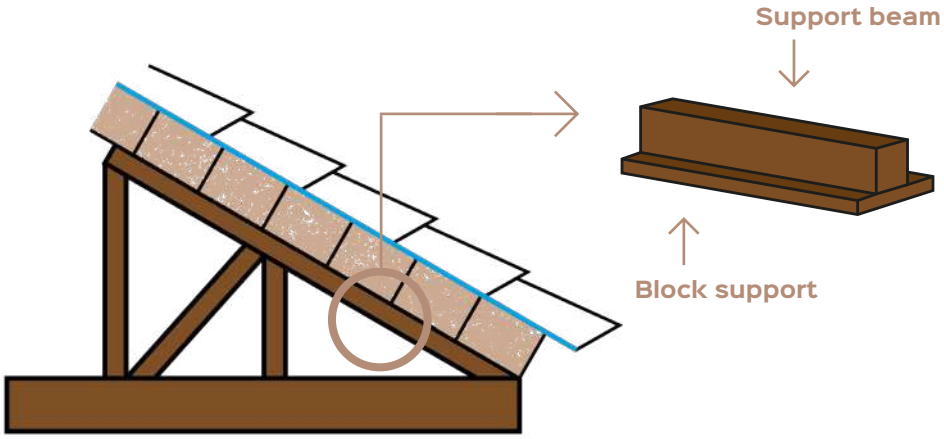
ECOblocks in *Roofing*

Flat Roof



Finishing
Waterproofing membrane
Screed
Hemp block
Slab

Pitched Roof



Breathable membrane
Hemp block
Load-bearing wood structure

Considerations regarding the weight of the blocks and the structural resistance must be assessed on a case-by-case basis, with the involvement of a structural engineer and the technical support of Cânhamor.

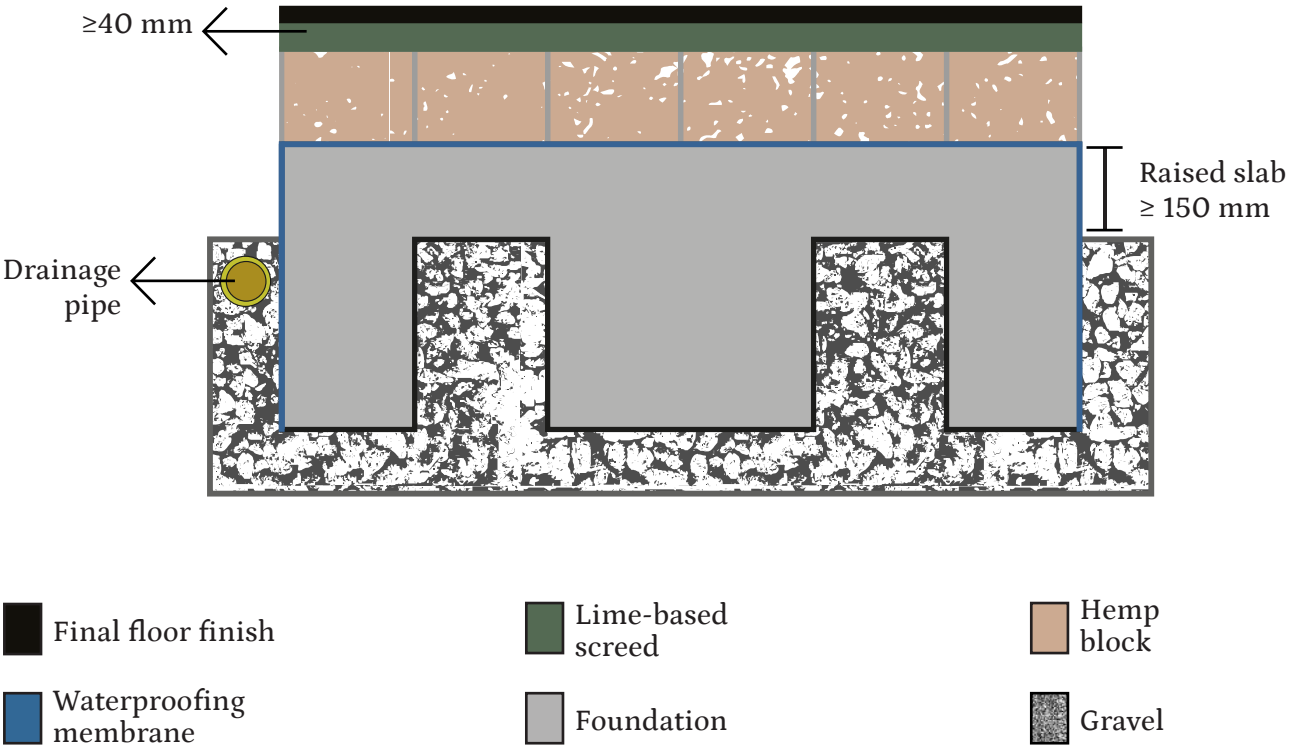
ECOblocks must be protected externally with appropriate waterproofing.

For flat roofs, the ECOblock surface must be levelled with a lime-based mortar to allow the correct application of the waterproofing membrane. A minimum slope of 2% is required to ensure proper water drainage. Before installing the waterproofing layer, the mortar must be fully cured.

The surface on which the ECOblocks are installed should be as level as possible. If the **foundation/ slab** is **uneven or poorly levelled**, a **levelling screed** should be applied.

For pitched roofs, a supporting structure is required to carry the blocks, typically a support beam.

ECOblocks in *Flooring*

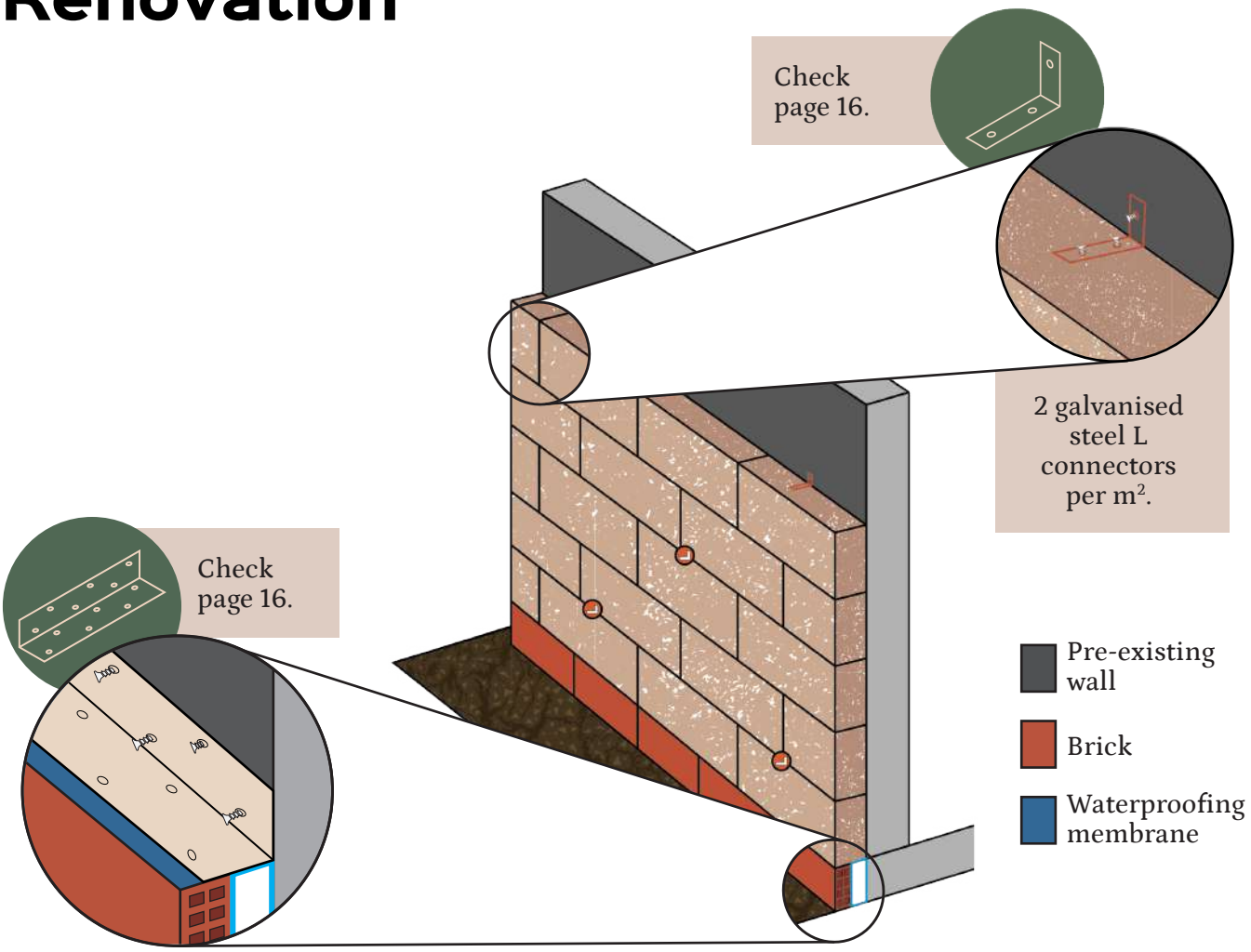


There is no need for mortar between the blocks.

If the surface area **exceeds 15 m²**, expansion joints must be provided between screed panels.

If the **foundation/slab** is **uneven or poorly levelled**, a **levelling screed** may be required between the foundation/slab and the waterproofing membrane.

Renovation



Ensure that the **existing wall** is structurally sound.

Use a **lime-based mortar** to ensure a minimum level of flatness/alignment of the existing wall.

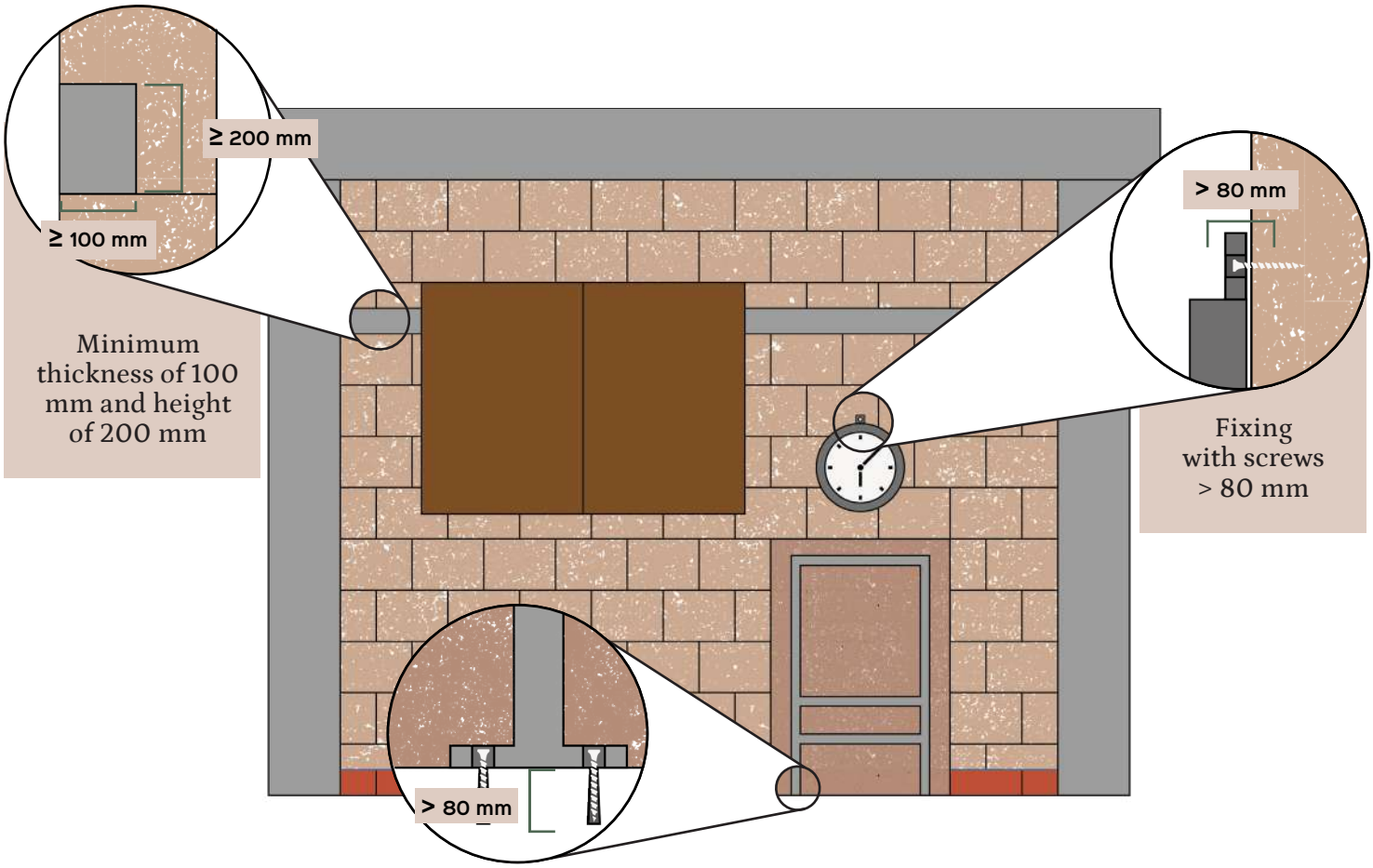
If opting for **ECOblock7**, use a **40 mm brick** and a **30 mm air cavity**. For **ECOblock11**, use a **70 mm brick** and a **40 mm air cavity.**

Ensure the best possible anchoring of the supports (galvanized steel L-connectors and support rail — see page 16) to the existing wall. Use the most suitable fastening systems (screws, chemical anchors) for the existing wall.

For walls higher than 4.5 m, contact the Cânhamor technical department.

For walls lined on the interior, if there are no infiltration or capillary issues, the blocks may be placed directly on the interior floor.

Load Securing



Securing of Heavy Loads

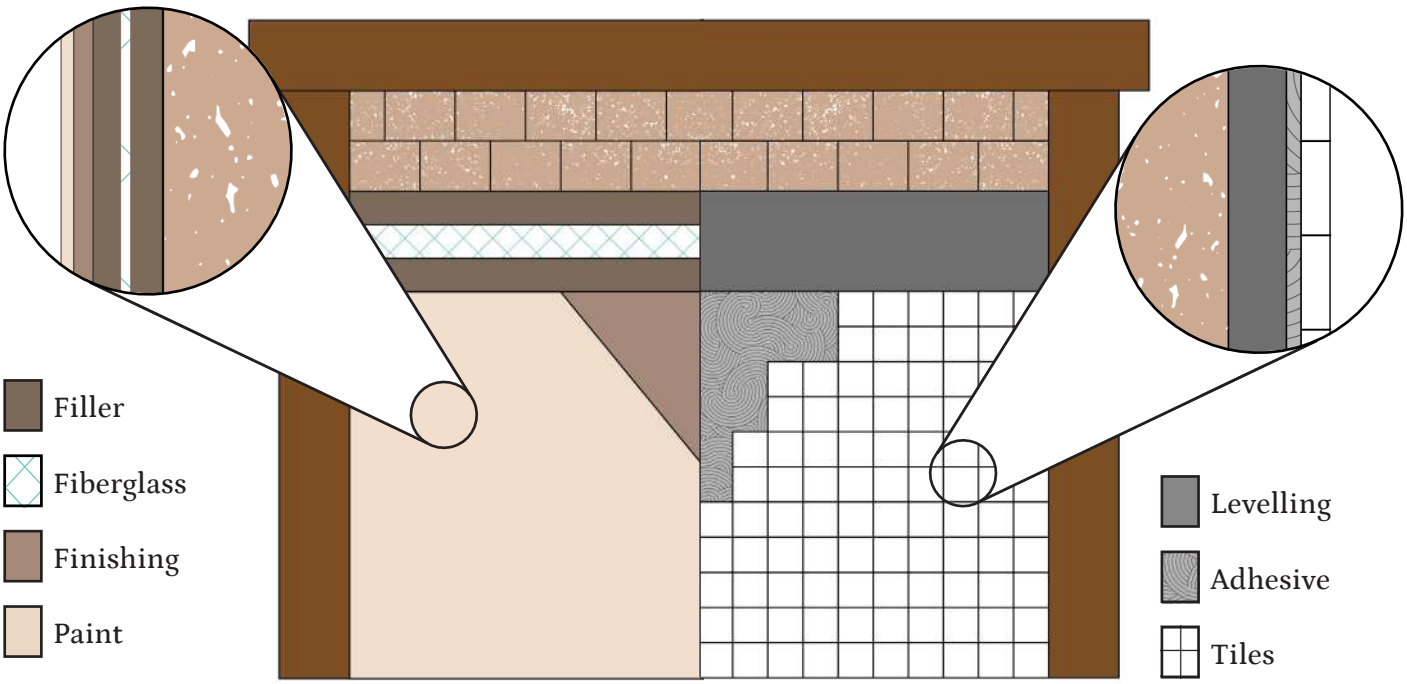
Load fixing with ECOblocks follows the same principles as conventional masonry.

For higher load situations (such as wall-hung toilets or kitchen cabinets, for example), use chemical anchors and/or a **structural framework (concrete, wood, or metal)** to distribute the load evenly across multiple fixing points and over a larger area.

Securing of Light Loads

For lighter loads, direct screws or screws with chemical anchors may be used. Refer to the technical information (see page 16) for the characteristics of the different fixing systems.

Finishings



Traditional Finishings

Exterior plastering is mandatory.

Before applying the render, it is necessary to **wait at least 14 days** to ensure proper setting of the mortar between blocks.

Always ensure that the **blocks are damp before applying the render.**

During the first 24 to 48 hours, the render should be kept moist to prevent excessively rapid drying.

The render thickness will always depend on the chosen supplier (see the finishing datasheets). The fiberglass mesh within the render provides greater strength and flexibility. This mesh should be placed at mid-thickness of the final render layer, never directly against the ECOblocks.

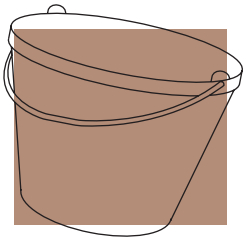
Tile Finishings

In the case of tiling and the installation of ceramic elements, the substrate must be levelled prior to bonding.

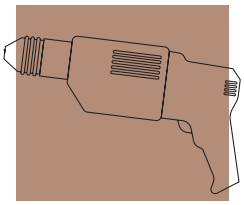
Ensure that the adhesives are compatible with lime-based substrates.

Large/heavy tiles may require the use of mechanical fasteners for fixing. In case of doubt, contact Cânhamor technical support.

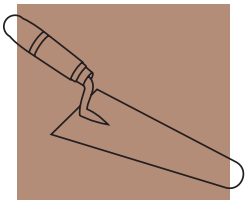
Required
Tools



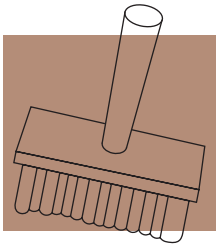
Bucket



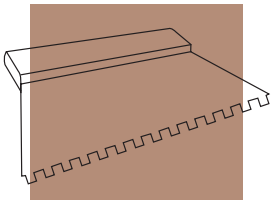
Drill



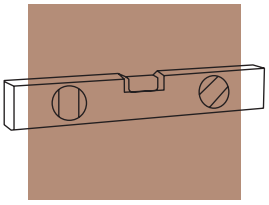
Trowel



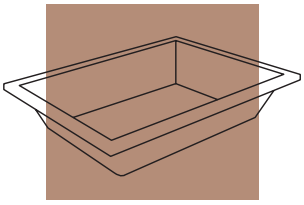
Brush



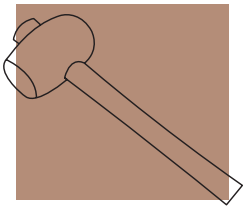
Notched spatula



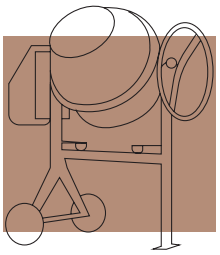
Spirit level



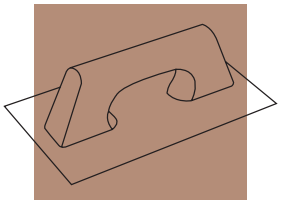
Trough



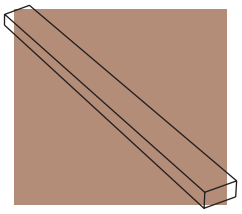
Rubber mallet



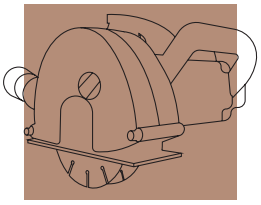
Cement mixer



Plastering trowel

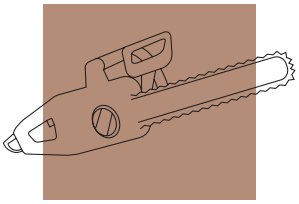


Plastering ruler



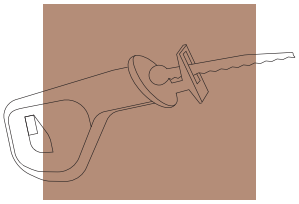
Milling cutter

OR



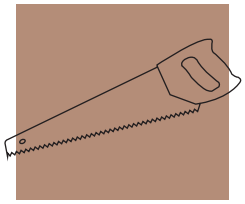
Chainsaw

OR



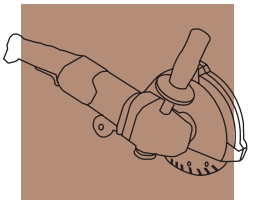
Sabre saw

OR



Handsaw

OR



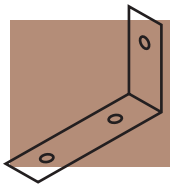
Angle Grinder (big or small)

Technical *Information*

L-connector: galvanised steel

Fixing ECOblocks to columns/existing walls.

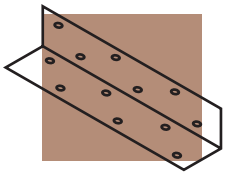
LENGTH (MM)	WIDTH (MM)	HEIGHT (MM)	BORE DIAMETER (MM)
70	25	50	8
110	25	50	8



Support/Starter rail

Starter course to prevent rising damp and support the weight of the wall.

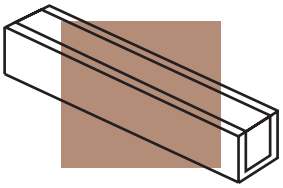
WEIGHT OF THE RAIL (KG)	LENGTH (MM)	WIDTH (MM)	HEIGHT (MM)	BORE DIAMETER (MM)
5,7	1200	100	100	10
4,56	1200	70	100	10



Lintels and Subsill

For doors and windows. For other lintel lengths please contact our technical team.

THICKNESS (MM)	WEIGHT KG)	HEIGHT (MM)	LINTEL LENGTH (MM)	LINTEL SPAN LENGTH (MM)
90	42	200	1600	1200
120	46	200	1600	1200
150	68	200	1600	1200
200	92	200	1600	1200
250	100	200	1600	1200
300	107	200	1600	1200

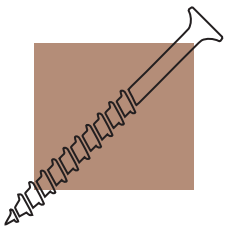


Securing Loads

Fixing loads and permitted weights per fixing point.

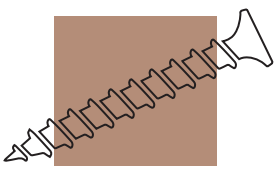
Specific screws

DIAMETER (MM)	LENGTH (MM)	PULLOUT STRENGTH (KG)	SUPPORTED WEIGHT (KG)
6	100	18	26
8	160	34	37



Conventional Alternatives

	ANCHORING DEPTH (MM)	WIDTH (MM)	SUPPORTED WEIGHT (KG)
Direct Screw	≥ 80	6	≤ 10
Screw + chemical bushing	≥ 100	8	≤ 40



Technical Data Sheet:
Renovations

ECOblock7 and ECOblock11

Characteristics	7 cm	11 cm	Standard	
Modular Dimensions	590x285 mm	590x285 mm	EN 772-16	
Width	70 mm	110 mm	EN 772-16	
Blocks/m^2	5.7 blocks	5.7 blocks	-	**
Dry Weight	3.7 kg	5.9 kg	-	
Maximum Weight	4.6 kg	7.2 kg	-	
Dry Apparent Density	318 +- 10 kg/m^3	318 +- 10 kg/m^3	EN 772-13	
Adhesive Mortar Consumption	3.5 kg/m^2	5.5 kg/m^2	-	**
Compressive Strength	>= 200 kPa	>= 200 kPa	EN 772-1	*
Dry Thermal Conductivity	0.069 W/m°C	0.069 W/m°C	EN 12664	
Dry Thermal Resistance	1.01 m^2k/w	1.59 m^2k/w	EN 12664	
Thermal Transmission Coefficient	0.91 W/m^2°C	0.59 W/m^2°C	ISO 6946	***
Specific Heat Capacity	1142 J/kg°C	1142 J/kg°C	ISO 13786	
Thermal Delay	3.4 h	5.3 h	ISO 13786	*
Reaction to Fire	B-s1-d0	B-s1-d0	EN 13501-1	
Resistance to Fire (EI)	-	-	EN 13501-2	***
Sound Absorption Coefficient α	≤ 0.8	≤ 0.9	NP EN ISO 354	*
Sound Resistance Index RW	≤ 33 dB	≤ 38 dB	ISO 10140-1, 2, 4	***
Water Vapour Diffusion Resistance Factor μ	6.51	6.51	ISO 12572	
Sd - Diffusion Equivalent Thickness	0.46 m	0.72 m	EN ISO 12572	*
Water Absorption by Capillarity	2.8 g/(m^2.s)	2.8 g/(m^2.s)	EN 772-11	
Drying Shrinkage	0.25 mm/m	0.25 mm/m	EN 772-14 : 2002	
Carbon Footprint/m^2	-2.48 kg CO_2 eq.	-3.9 kg CO_2 eq.	EN 15804	****

* Estimated values based on tests carried out on 20 and 30 cm ECOblocks.
** With 8 mm of adhesive mortar.
*** With 2.25 cm of plaster.
**** Values based on existing EPDs.

Technical Data Sheet:
New Constructions

ECOblock15, ECOblock20 and ECOblock25

Characteristics	15 cm	20 cm	25 cm	Standard	
Modular Dimensions	590x285 mm	590x285 mm	590x285 mm	EN 772-16	
Width	150 mm	200 mm	250 mm	EN 772-16	
Blocks/m^2	5.7 blocks	5.7 blocks	5.7 blocks	-	**
Dry Weight	8 kg	10.7 kg	13.4 kg	-	
Maximum Weight	9.8 kg	13.1 kg	16.3 kg	-	
Dry Apparent Density	318 +- 10 kg/m^3	318 +- 10 kg/m^3	318 +- 10 kg/m^3	EN 772-13	
Adhesive Mortar Consumption	7.5 kg/m^2	10 kg/m^2	12.5 kg/m^2	-	**
Compressive Strength	>= 200 kPa	>= 200 kPa	>= 200 kPa	EN 772-1	*
Dry Thermal Conductivity	0.069 W/m°C	0.069 W/m°C	0.069 W/m°C	EN 12664	
Dry Thermal Resistance	2.17 m^2k/w	2.90 m^2k/w	3.62 m^2k/w	EN 12664	
Thermal Transmission Coefficient	0.44 W/m^2°C	0.33 W/m^2°C	0.27 W/m^2°C	ISO 6946	***
Specific Heat Capacity	1142 J/kg°C	1142 J/kg°C	1142 J/kg°C	ISO 13786	
Thermal Delay	7.2 h	9.6 h	12 h	ISO 13786	*
Reaction to Fire	B-s1-d0	B-s1-d0	B-s1-d0	EN 13501-1	
Resistance to Fire (EI)	EI 180 min	EI 180 min	EI 240 min	EN 13501-2	***
Sound Absorption Coefficient α	0.9	0.9	0.9	NP EN ISO 354	*
Sound Resistance Index RW	39 dB	40 dB	> 40 dB	ISO 10140-1, 2, 4	***
Water Vapour Diffusion Resistance Factor μ	6.51	6.51	6.51	ISO 12572	
Sd - Diffusion Equivalent Thickness	0.98 m	1.3 m	1.63 m	EN ISO 12572	*
Water Absorption by Capillarity	2.8 g/(m^2.s)	2.8 g/(m^2.s)	2.8 g/(m^2.s)	EN 772-11	
Drying Shrinkage	0.25 mm/m	0.25 mm/m	0.25 mm/m	EN 772-14 : 2002	
Carbon Footprint/m^2	-5.32 kg CO_2 eq.	-7.09 kg CO_2 eq.	-8.87 kg CO_2 eq.	EN 15804	****

* Estimated values based on tests carried out on 20 and 30 cm ECOblocks.
** With 8 mm of adhesive mortar.
*** With 2.25 cm of plaster.
**** Values based on existing EPDs.

Technical Data Sheet:
ECOpremium

ECOblock 28.5 and ECOblock32

Characteristics	28,5 cm	32 cm	Standard	
Modular Dimensions	590x320 mm	590x285 mm	EN 772-16	
Width	285 mm	320 mm	EN 772-16	
Blocks/m^2	5.1 blocks	5.7 blocks	-	**
Dry Weight	17.1 kg	17.1 kg	-	
Maximum Weight	20.9 kg	20.9 kg	-	
Dry Apparent Density	318 +- 10 kg/m^3	318 +- 10 kg/m^3	EN 772-13	
Adhesive Mortar Consumption	11.58 kg/m^2	15.98 kg/m^2	-	**
Compressive Strength	>= 200 kPa	>= 200 kPa	EN 772-1	*
Dry Thermal Conductivity	0.069 W/m°C	0.069 W/m°C	EN 12664	
Dry Thermal Resistance	4.13 m^2k/w	4.64 m^2k/w	EN 12664	
Thermal Transmission Coefficient	0.24 W/m^2°C	0.21 W/m^2°C	ISO 6946	***
Specific Heat Capacity	1142 J/kg°C	1142 J/kg°C	ISO 13786	
Thermal Delay	13.7 h	15.4 h	ISO 13786	*
Reaction to Fire	B-s1-d0	B-s1-d0	EN 13501-1	
Resistance to Fire (EI)	EI 240 min	≥ EI 240 min	EN 13501-2	***
Sound Absorption Coefficient α	0.95	0.95	NP EN ISO 354	*
Sound Resistance Index RW	42 dB	43 dB	ISO 10140-1, 2, 4	***
Water Vapour Diffusion Resistance Factor μ	6.51	6.51	ISO 12572	
Sd - Diffusion Equivalent Thickness	1.86 m	2.08 m	EN ISO 12572	*
Water Absorption by Capillarity	2.8 g/(m^2.s)	2.8 g/(m^2.s)	EN 772-11	
Drying Shrinkage	0.25 mm/m	0.25 mm/m	EN 772-14 : 2002	
Carbon Footprint/m^2	-10.11 kg CO_2 eq.	-11.35 kg CO_2 eq.	EN 15804	****

* Estimated values based on tests carried out on 20 and 30 cm ECOblocks.
** With 8 mm of adhesive mortar.
*** With 2.25 cm of plaster.
**** Values based on existing EPDs.

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