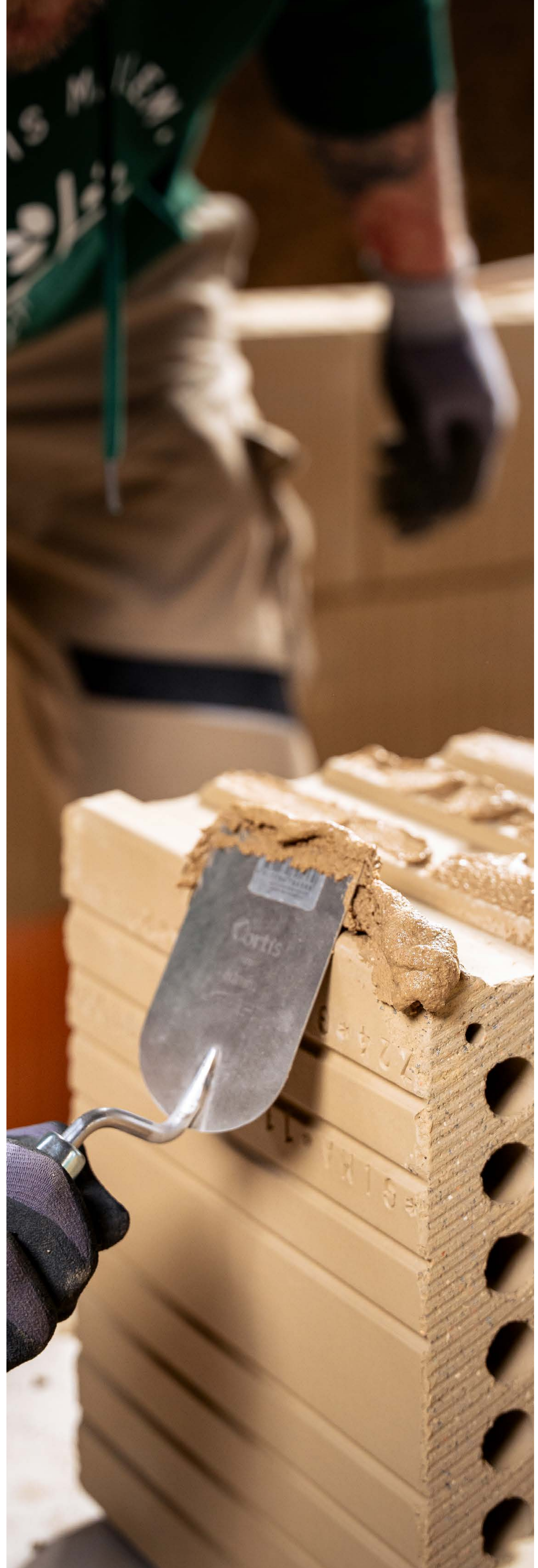
Clay blocks

CONSTRUCTION NOTES



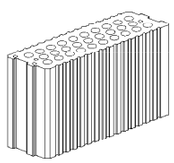
The GIMA clay vertically perforated block makes recyclable clay masonry suitable for mass production. The general building authority approval was granted by the DIBt under the number Z-17.6-1306. In addition, the general type approval for load-bearing clay block masonry using the thin-bed method is also available.

In the following, we show the corresponding processing instructions in accordance with the approval. Please note that country-specific regulations and safety requirements must be observed.

The QR code will take you directly to the processing video, which illustrates the practical implementation step by step.

Clay blocks

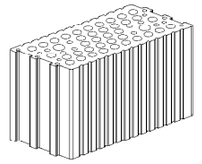
With our vertically perforated clay block, we want to create a building material that is suitable for mass production, can be manufactured industrially and is therefore affordable, while also meeting the highest sustainability requirements as a purely natural product made from 100% clay. We have based the design on conventional masonry block formats, which is why they can be processed just as efficiently and quickly. Clay blocks can be used for non-load-bearing interior walls, load-bearing interior walls and load-bearing exterior wall constructions. Below you will find current formats of the new product. As with all our product groups, we respond explicitly to customer requests, which is why alternative formats can also be produced to order.



LZ11

for non-load-bearing interior walls

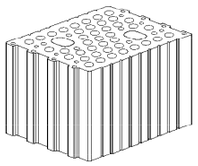
Length:	**372 mm**
Width:	**115 mm**
Height:	**249 mm**
Compressive strength:	5
Pallet contents:	80
Requirements per m²:	11



LZ17

for non-load-bearing interior walls

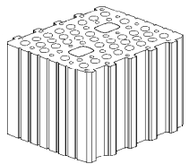
Length:	**372 mm**
Width:	**175 mm**
Height:	**249 mm**
Compressive strength:	5
Pallet contents:	48
Requirements per m²:	11



LZ24

For load-bearing interior walls and exterior walls

Length:	**307 mm**
Width:	**240 mm**
Height:	**249 mm**
Compressive strength:	5
Pallet contents:	36
Requirements per m²:	13



LZ30

For load-bearing interior walls and exterior walls

Length:	**247 mm**
Width:	**300 mm**
Height:	**249 mm**
Compressive strength:	5
Pallet contents:	45
Requirements per m²:	16

The QR code will take you to the planning documents.
For detailed questions and personal advice on planned projects, please contact us by email at info@gima-lehmziegel.de

The clay block building site

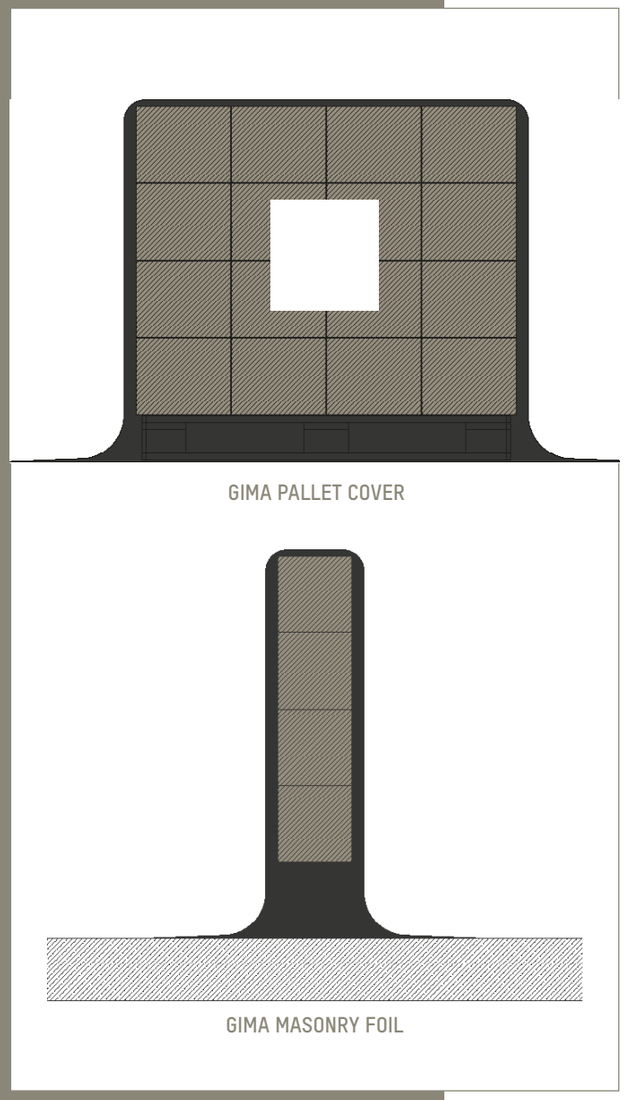
During the construction phase, it is crucial to protect the masonry from moisture. Rain and other weather influences can affect the clay, so clay blocks should be protected from extreme weather conditions.

+ Delivery and storage on the construction site

Areas must be provided where the pallets can be stored in a protected location. Suitable weather protection must be provided for the pallets during the construction period. The material must be protected from ground moisture and rain until it is processed. GIMA provides special covers for this purpose, e.g. for open pallets.

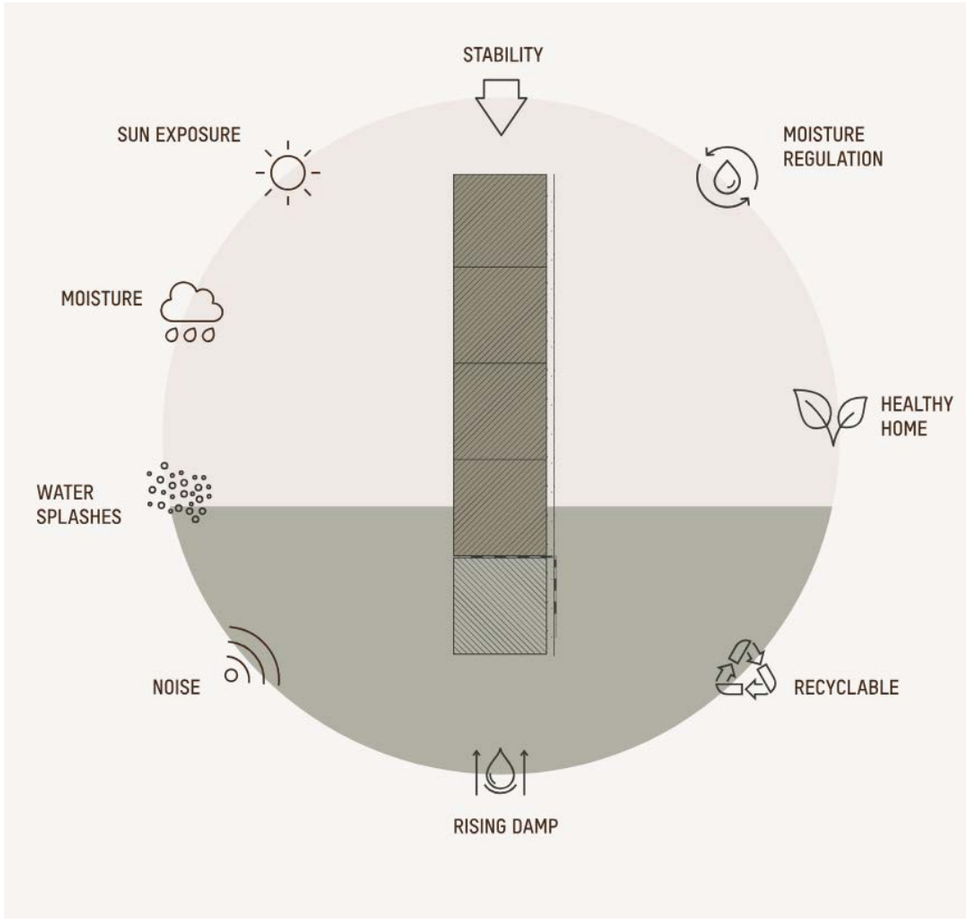
+ Processing on the construction site

Clay reacts sensitively to rain and water. Water can lead to moisture penetration and leaching. Clay walls must be covered on site after construction or at the end of the day. GIMA provides suitable tarpaulins by the meter for this purpose.



GIMA PALLET COVER

GIMA MASONRY FOIL



+ Drying time

Clay building work should be completed by the end of the summer, depending on the weather, by the beginning of fall to avoid frost damage. Under normal conditions (summer building season, normal weather), the clay block (e.g. LZ 24) requires approx. two to four weeks drying time on the building site. Clay blocks require sufficient drying time to avoid cracks and other structural problems. The drying time can take several weeks depending on weather conditions and the thickness of the walls. To prevent drying too quickly and the associated cracking, the construction process should be planned to allow for slow and even drying. Make sure that the walls are protected from direct sunlight and strong winds to prevent uneven drying.

+ Ventilation

Sufficient air circulation during the drying phase is essential for a successful construction process. Good ventilation helps to regulate the moisture content in the clay and prevents mold growth. Windows and doors should be opened regularly to provide fresh air, especially indoors. In addition, fans or other mechanical ventilation systems can be used to promote air movement and enable even drying.

„THIS SAVES US MORE THAN A THIRD OF THE COST-INTENSIVE WORKING TIME COMPARED TO MASONRY WITH CLAY BLOCKS USING THE THICK-BED MORTAR METHOD. THIS MAKES CLAY MASONRY ECONOMICALLY COMPETITIVE AND PROVES THAT CLAY BUILDING MATERIALS CAN NOW STAND ON A PAR WITH CONVENTIONAL MATERIALS AS PRACTICAL INDUSTRIAL PRODUCTS."

Maximilian Breidenbach | Head of Production & Corporate Development at ClayTec.

Clay is efficient

Need for material

To create clay masonry with GIMA clay blocks at, you will need the following materials, tools and machines:

- Clay blocks
- Burnt clay blocks for the edge layer
- Clay thin-bed mortar
- Mortar sledge
- Mortar stirrer
- Bucket for mixing the mortar/mortar mixer
- Water level
- Hammer
- Angle iron
- Gripping aids
- Stone cutter

Creating a ridge layer

For reasons of accidental damage protection, the edge layers should generally be constructed from moisture-independent building materials. The use of fired vertically perforated blocks is recommended.

Clay blocks can be excellently combined with other building materials. A combination with fired blocks, wooden building materials or even concrete is possible at any time.

+ Application of mortar

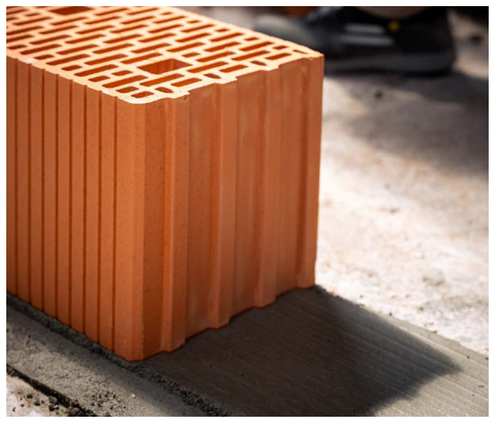
Align the angle brackets correctly and apply the adhesive mortar to the base plate in accordance with the supplier's instructions.

+ Installing the wall barrier strip

To protect against rising damp, the transition to the edge layer must be executed with a horizontal barrier layer. To do this, place the masonry barrier membrane on top of the adhesive mortar.

+ Creating a ridge layer

We recommend the use of fired vertically perforated blocks for the creation of the edge layer. The format can be selected to match the clay block format.



+ Note height

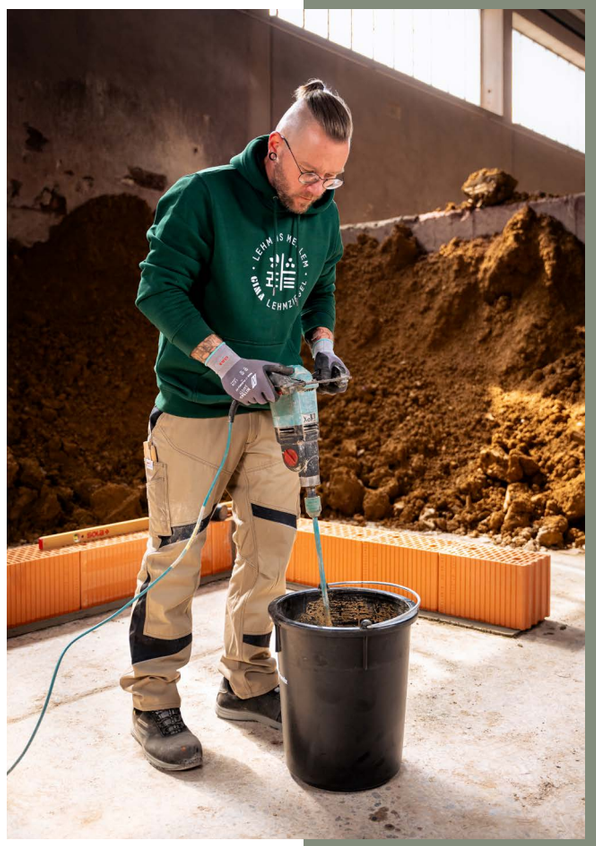
The height of the edge layer must take into account the terrain and the splash water area. Depending on the situation, the edge layer should be at least 30 cm high.

Clay masonry

The use of GIMA clay block masonry is regulated in the building authority approval Z-17.6-1306 and the ABP P-BWU03-I 17.2.60. Furthermore, the areas of application of DIN 18945:2024-03 "Clay blocks - Requirements, testing and marking" apply to application class AKII in conjunction with service class 1.

+ Mixing clay thin-bed mortar

The clay thin-bed mortar consists of building clay, other primary mineral raw materials and plant fibers, which are ground and mixed. Thanks to its solubility, once bonded masonry can be separated again without leaving any residue. The product can be processed like any conventional thin-bed mortar: the dry mix is mixed with water and then applied with standard thin-bed mortar sledges, mortar rollers or application rollers to a thickness of 2 millimetres. The joints harden by drying alone. The processing guidelines of the mortar manufacturer must be observed.



+ Application Clay thin-bed mortar

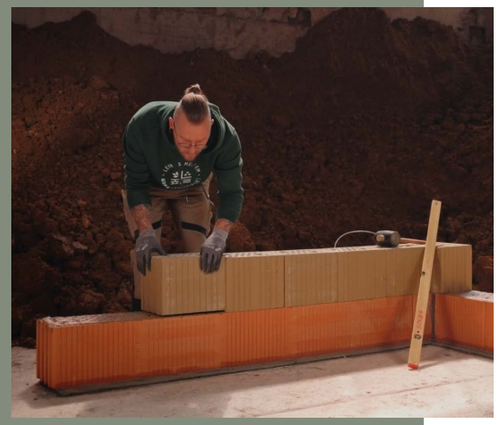
The thin-bed mortar must be applied to the entire surface of the bearing surfaces of the blocks cleaned of dust as a closed mortar band.

+ Application thickness of clay mortar

The application thickness of the wet mortar is 2 to 3 mm. The thickness of the dry bed joint is ≥ 1 mm.

+ Laying the first row of clay blocks

The clay block masonry is to be executed as single-stone masonry using the thin-bed method without butt joint mortar.



+ Correct processing

The clay blocks must be butted closely together ("crunched") in accordance with DIN EN 1996-1-1/NA, NCL to 8.1.5, pressed on and brought into their final position in a plumb and level manner.

Clay is sustainable

Block corner

The clay block masonry is to be executed as single-stone masonry using the thin-bed method without butt joint mortar.

Please refer to the approval for all test values and instructions for processing clay vertically perforated blocks using the thin-bed method. You can find these online at www.gima-lehmziegel.de

+ Applying clay mortar

Apply the clay mortar generously with the trowel on the corresponding head side.

+ Positioning the corner

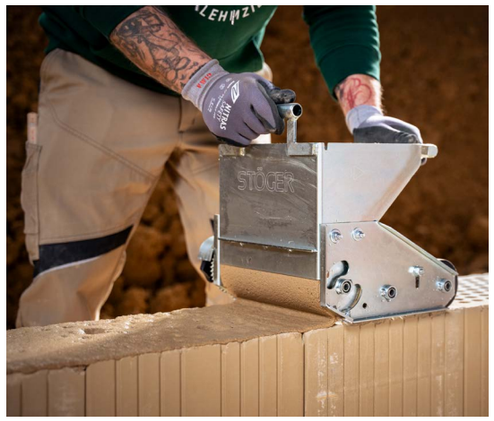
Immediately afterwards, the tile is placed at the corner, pressed into position and aligned correctly.

+ Tools for blocklaying

The classic aids and tools can be used to construct the masonry, just as with fired blocks.

+ Use of the mortar slide

We recommend using a mortar sledge to apply the thin-bed clay mortar evenly. This can be supplied by us for a rental fee.



Clay is versatile

Cutting clay blocks

Clay vertically perforated blocks can be cut with an angle grinder, a block cutting machine, a block saw or with a hammer and chisel, just like traditional masonry blocks. A higher level of dust is to be expected. We therefore recommend the use of respiratory protection during the cutting process. The health and safety regulations of the respective country must always be observed.

+ Set dimensions

As usual, the required stone length is measured with a folding rule.

+ Set cutting tool

The respective stone length is transferred to the cutting tool.

+ Cutting clay blocks

The clay block material is very soft and dusts relatively heavily. Therefore, cut the blocks slowly. There are no sharp edges as the material is very soft.

+ Placing the blanks

The cut stone is crunched and placed against the row of stones again.

Clay is solid

Grip aids

The clay vertically perforated blocks can be worked with your hands during masonry work. However, you can also work with grip aids or lifting cranes.

The respective weights and dimensions can be found in the respective price list. For larger formats from LZ24, we recommend the use of supporting tools and machines.

+ Using gripping aids

Place the grip aids in the two large grip holes and press them against the inner wall of the tile. This distributes the load and takes the strain off your hands.

+ Placement of the clay blocks

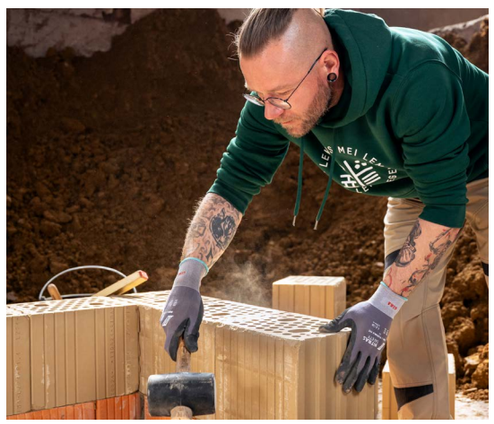
As the gripping aids are inserted from above, the tiles can be crunched together directly. The gripping aids are then released and the next tile can be moved.

+ Alignment of the clay blocks

As usual, the blocks are placed in their final position in a plumb and aligned manner.

+ Working with feeling

Small flaking may occur during processing. However, these can be easily repaired with clay mortar. This is where the perfect harmony of the materials used shows its full strength.



Protective cover

Clay blocks can last for centuries. However, unprotected blockwork should not be exposed to the weather. We therefore supply protective covers for open pallets on the construction site. You can also obtain special films to cover the blockwork. If you have any questions, please contact us at any time by e-mail at info@gima-lehmziegel.de

www.gima-lehmziegel.de