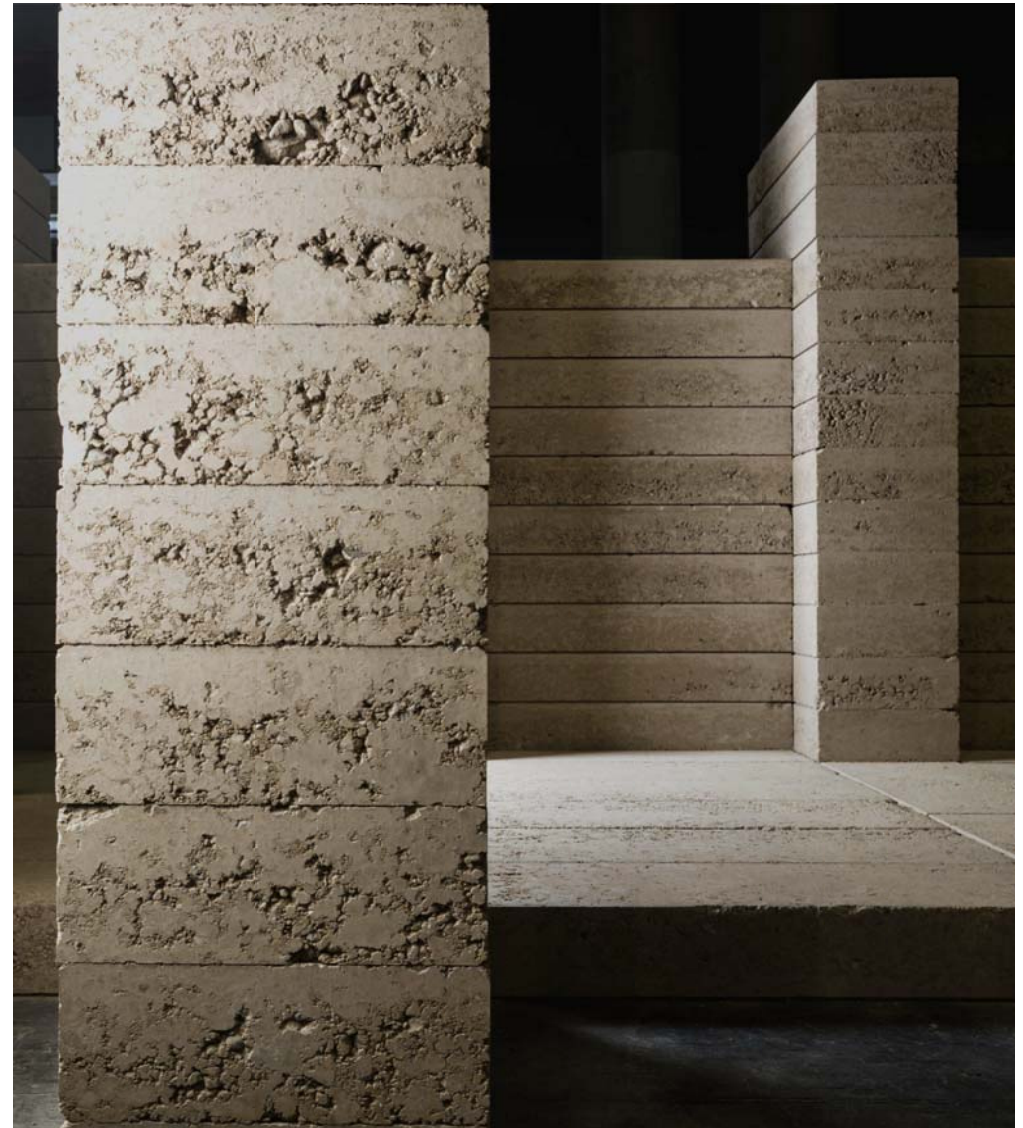


# FETDETERRA

INNOVATIVE EARTH PROJECTS AND PRODUCTS

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# FETDETERRA

INNOVATIVE EARTH PROJECTS AND PRODUCTS

## FETDETERRA

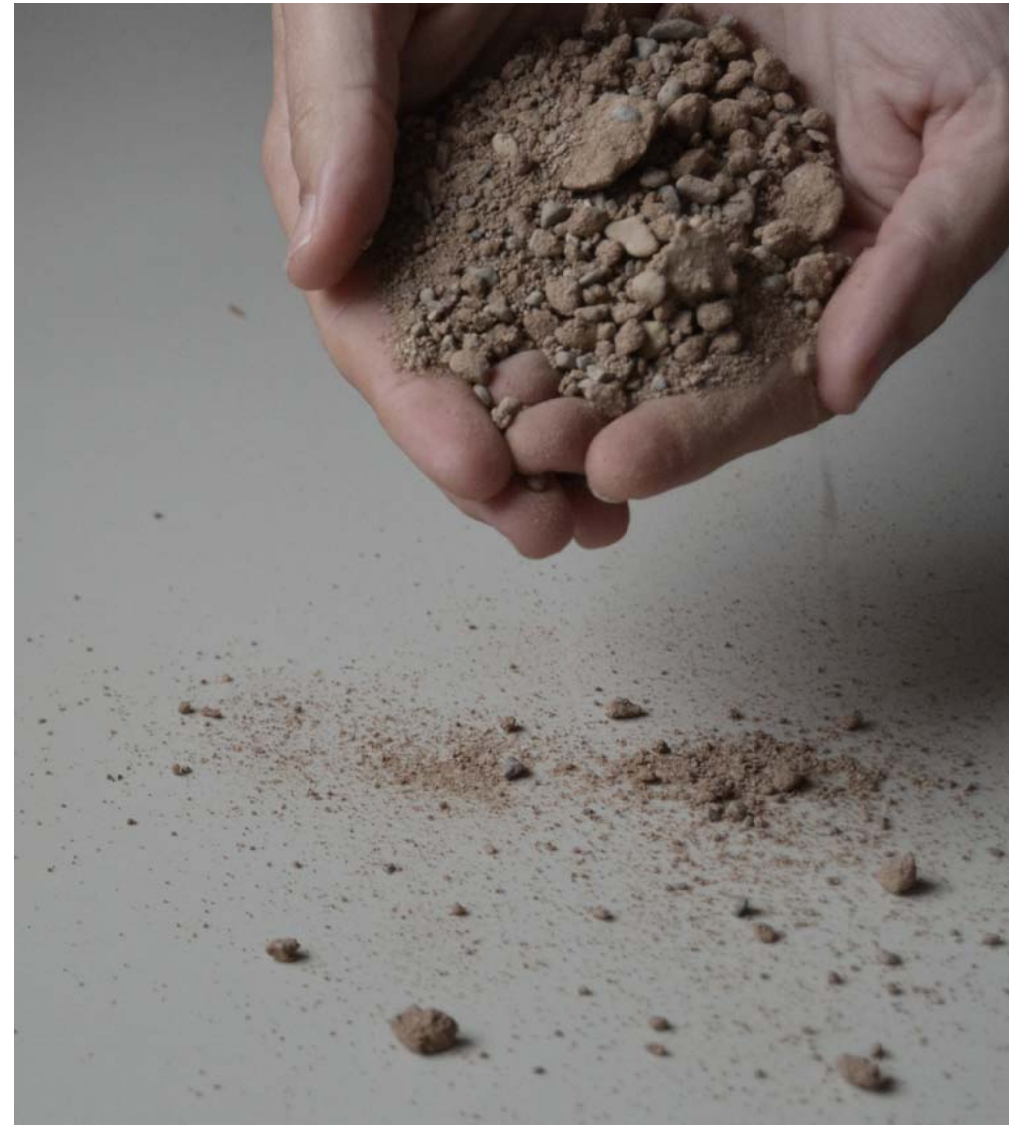
We are specialists in Earth Architecture and accredited consultants in eco-innovation, product design and technological development.

We work with final users, technicians and manufacturers from beginning of the project to find the solution that will best suits their needs.

Working in various areas of research and the search for new products and construction systems with rammed earth. We study the properties of the materials, to obtain the maximum benefits, while we open a path for their normalization and adaptation to current legislation, as members of the UNE Technical Committee, CTN 41 / SC 10.

We promote the use of natural materials, such as 100% recyclable earth, with low energy consumption in its manufacture and low economic cost, for a sustainable, ecological and environmentally friendly construction.

We are concerned about the conservation of the existing architectural heritage built with rammed earth, hence we develop new methods of restoration for the correct rehabilitation of the vernacular architecture, with interventions coherent with the existing materials, which guarantee their preservation.



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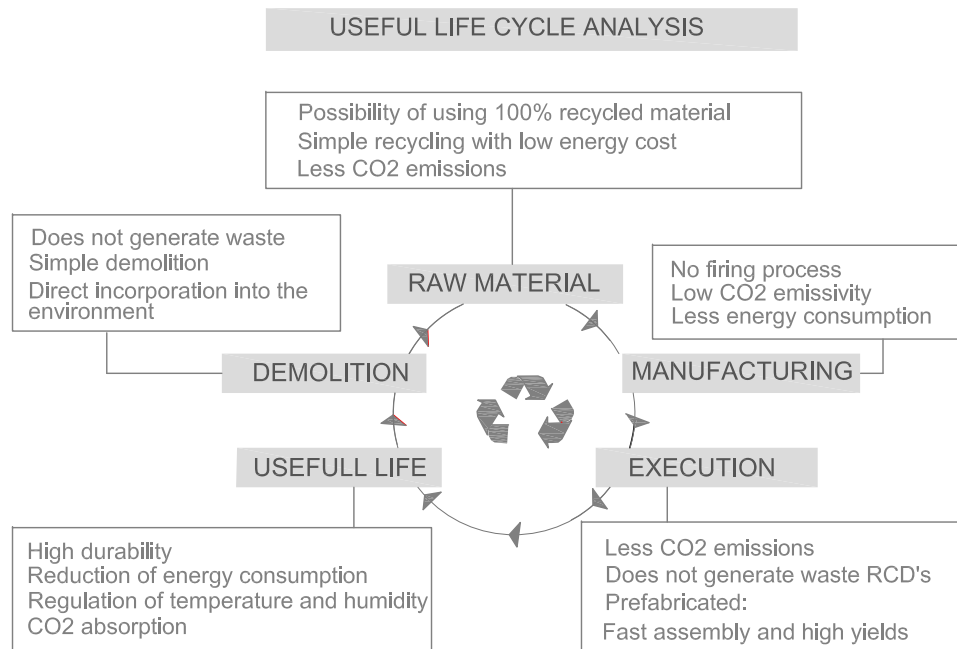
## MATERIAL

Rammed Earth is one of the materials that nature offers us. Used in its pure form as raw material, we include it in our products, for the construction of sustainable buildings.

The presence of the material can always be felt. Not only are they natural and ecological materials but they are also elegant, unique and authentic.

Thanks to the specific properties of the minerals contained in the earth, a healthy, balanced and relaxing environment is created, capable of transmitting a feeling of well-being.

The quality faces the quantity and the small details charge special importance. The strength lies in its mass, texture and natural colour.



## BENEFITS

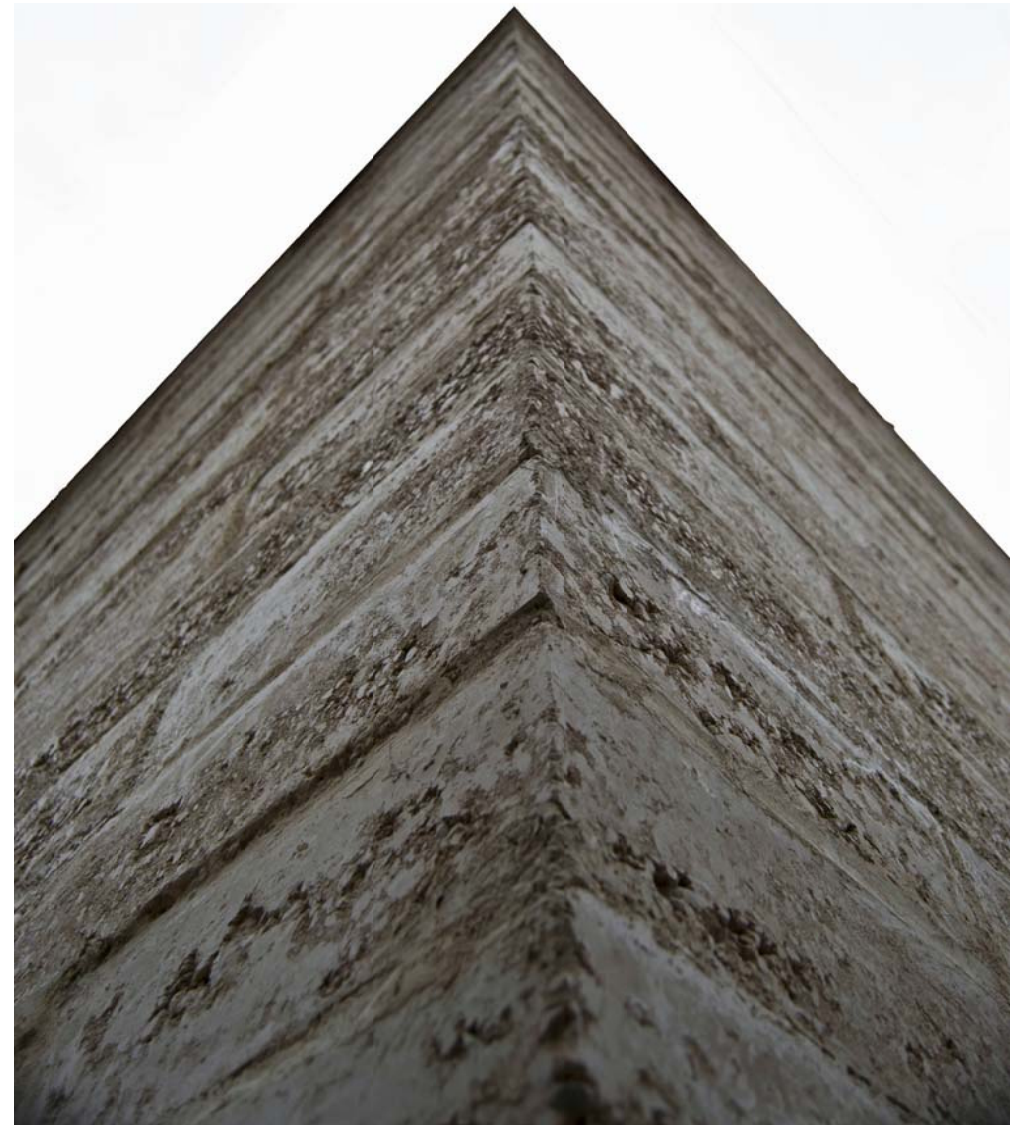
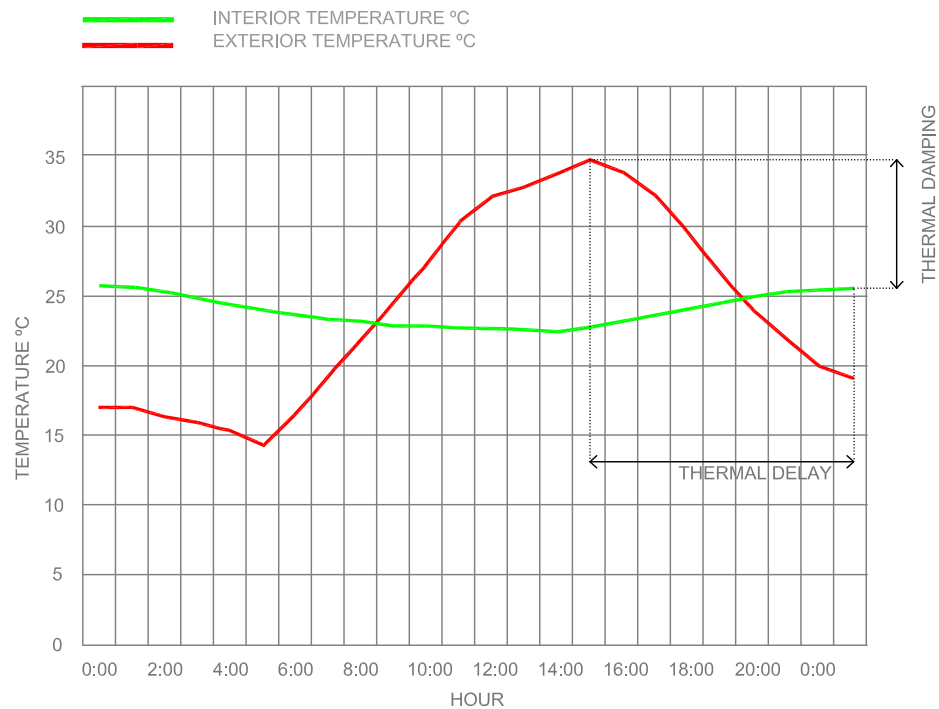
### HEALTH AND BENEFITS FOR THE USER

Rammed Earth is a material that breathes and purifies the air, with thermal inertia to reduce the energy cost of the building, regulates humidity and interior temperature, absorbs electromagnetic waves and offers acoustic insulation.

### SUSTAINABILITY FOR THE ENVIRONMENT

It does not generate any waste, nor toxic, it reduces CO2 emissions, it is a long-lasting material, recyclable and totally reusable.

### THERMAL CURVE. TAPIALBLOCK LC. 24 summer hours



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## FETDETERRA PRODUCTS

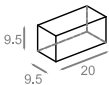
Tapialblock is an innovative prefabricated product with raw earth, which we have developed from Fetdeterra.

The advantages offered by the prefabricated block of earth against the traditional system of construction of walls of rammed earth are:

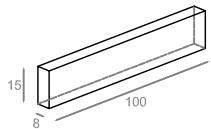
the absolute control of the material, the curing and quality of the product, guaranteeing a constant geometry and regular dimensions.

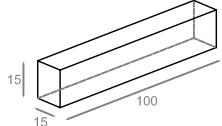
We achieve a reduction of the execution time, without the need for specialized labor, minimizing the necessary materials and equipment, and reducing the costs on site.

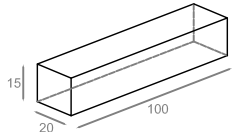
### LARGE FORMAT

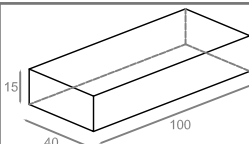
	PRODUCT	Tapialblock® 10/20/10
	DIMENSIONS	9.5 x 20 x 9.5 cm
	WEIGHT	4.5 kg
	THICKNESS OF WALL	9.5 cm

### SMALL FORMAT

	PRODUCT	Tapialblock® 8/100/15
	DIMENSIONS	8 x 100 x 15 cm
	WEIGHT	25 kg
	THICKNESS OF WALL	8 cm

	PRODUCT	Tapialblock® 15/100/15
	DIMENSIONS	15 x 100 x 15 cm
	WEIGHT	45 kg
	THICKNESS OF WALL	15 cm

	PRODUCT	Tapialblock® 20/100/15
	DIMENSIONS	20 x 100 x 15 cm
	WEIGHT	60 kg
	THICKNESS OF WALL	20 cm

	PRODUCT	Tapialblock® 40/100/15
	DIMENSIONS	100 x 40 x 15 cm
	WEIGHT	125 kg
	THICKNESS OF WALL	40 cm

The bonding mortar is made from the earth itself, with a finer granulometry, once dry retains the same texture, achieving a homogeneity in the wall.



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## CONSTRUCTION SYSTEM



### HANDLING

The prefabricated blocks of rammed earth can be cut without problems, with a radial, and must be manipulated, in the case of medium and large parts, with the help of clamps, mounted on crane or machine. These will have to guarantee the contact on all the lateral surface of the block, avoiding differential tensions on it.

### PLACEMENT

We foresee a minimum joint between blocks, which allows to introduce the mortar of earth (of the same characteristics as the rammed earth with which the blocks have been manufactured). When laying the work, it is recommended to use the Fetdeterra mortar. The same mortar can be used for the base and the grouting of the pieces.



## FINISHES AND SUPERFICIAL TREATMENTS

Both indoors and outdoors, the Tapialblock can be left exposed, or if preferred, it can be coated or painted, always with materials compatible with the earth to avoid possible later pathologies.

In the case of paints, it is recommended to use paints based on silicates, minerals, fat lime in paste or vegetables, to ensure maximum permeability with the support.



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## PRODUCT INDEX

### WALLS LARGE SIZE

TAPIALBLOCK® 8/100/15

TAPIALBLOCK® 15/100/15

TAPIALBLOCK® 20/100/15

TAPIALBLOCK® 40/100/15

### WALLS LARGE SIZE

TAPIALBLOCK® 10/20/10

### MORTAR

JOINTING MORTAR

PLASTER MORTAR

### PAINT

EARTH PAINTING

### ACCESSORIES

CONNECTORS AND REINFORCEMENT

TAPIALBLOCK CLAMPS

MINICRANE FOR BLOCKLAYING



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## FETDETERRA

	Product	Tapialblock® 8/100/15
	Dimensions	100 x 8 x 15 cm
	Weight	26 kg
	Wall thickness	8 cm

Appearance and surface	Rugged surface texture, with sporadic appearance of coarse aggregate as finishing texture
Finished	Sighted surface
Placement	Exterior and interior
Colour	Earth

Density	2.000 Kg/m <sup>3</sup>
Compression resistance	5,0 N/mm <sup>2</sup>
Cycle resistance moistening / drying	Suitable
Resistance to erosion	Suitable
Water absorption test by capillarity	4,5 %
Oxidable organic material content	0,06 %
Impact resistance	> 24,6 Joules
Coefficient of thermal conductivity	0,778 W/m·K
Specific heat	2,05 MJ/m <sup>3</sup> K
Fire resistance	A1
Reduction index. R <sub>A</sub>	42 dBA

The blocks are presented in indivisible pallets.  
It should be stored in a protected and dry place. Do not stack pallets.

Pcs/pallet	30 blocks/ pallet
Dimension/pallet	120 x 120 cm
Weight/pallet	900 kg/pallet
Quantity/palet	6m <sup>2</sup> /pallet
Area	6,7 blocks/m <sup>2</sup>



# DATA SHEET



## FETDETERRA

	Product	Tapialblock® 15/100/15
	Dimensions	15 x 100 x 15 cm
	Weight	45 kg
	Wall thickness	15 cm

Appearance and surface	Rugged surface texture, with sporadic appearance of coarse aggregate as finishing texture
Finished	Sighted surface
Placement	Exterior and interior
Colour	Earth

Density	2.000 Kg/m <sup>3</sup>
Compression resistance	5,0 N/mm <sup>2</sup>
Cycle resistance moistening / drying	Suitable
Resistance to erosion	Suitable
Water absorption test by capillarity	4,5 %
Oxidable organic material content	0,06 %
Impact resistance	> 24,6 Joules
Coefficient of thermal conductivity	0,778 W/m·K
Specific heat	2,05 MJ/m <sup>3</sup> K
Fire resistance	A1
Reduction index, R <sub>A</sub>	52 dBA

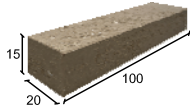
The blocks are presented in indivisible pallets.  
It should be stored in a protected and dry place. Do not stack pallets.

Pcs/pallet	12 blocks/ pallet
Dimension/pallet	120 x 120 cm
Weight/pallet	720 kg/pallet
Area	6,7 blocks/m <sup>2</sup>



# DATA SHEET

## FETDETERRA

	Product	Tapialblock® 20/100/15
	Dimensions	20 x 100 x 15 cm
	Weight	60 kg
	Wall thickness	20cm

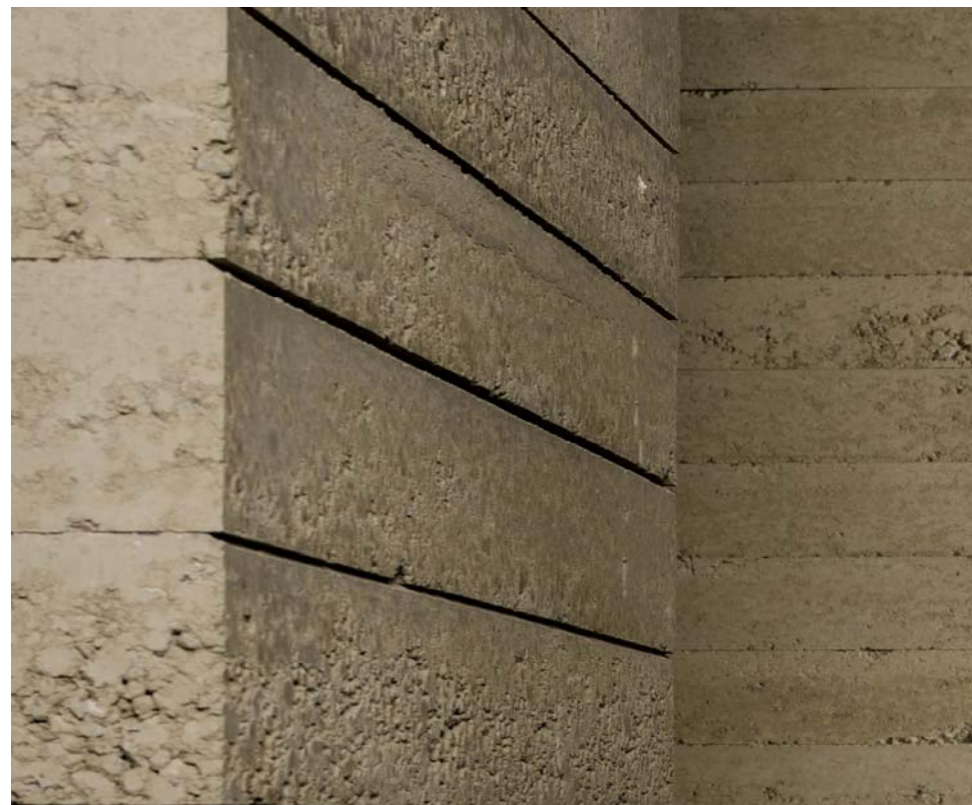
Appearance and surface	Rugged surface texture, with sporadic appearance of coarse aggregate as finishing texture
Finished	Sighted surface
Placement	Exterior and interior
Colour	Earth

Density	2.000 Kg/m3
Compression resistance	5,0 N/mm²
Cycle resistance moistening / drying	Suitable
Resistance to erosion	Suitable
Water absorption test by capillarity	4,5 %
Oxidable organic material content	0,06 %
Impact resistance	> 24,6 Joules
Coefficient of thermal conductivity	0,778 W/m·K
Specific heat	2,05 MJ/m3K
Fire resistance	A1
Reduction index. R <sub>A</sub>	56 dBA

The blocks are presented in indivisible pallets.

It should be stored in a protected and dry place. Do not stack pallets.

Pcs/pallet	12 blocks/ pallet
Dimension/pallet	120 x 120 cm
Weight/pallet	720 kg/pallet
Area	6,7 blocks/m2



# DATA SHEET



## FETDETERRA

	Product	Tapialblock® 40/100/15
	Dimensions	40 x 100 x 15 cm
	Weight	125 kg
	Wall thickness	40 cm

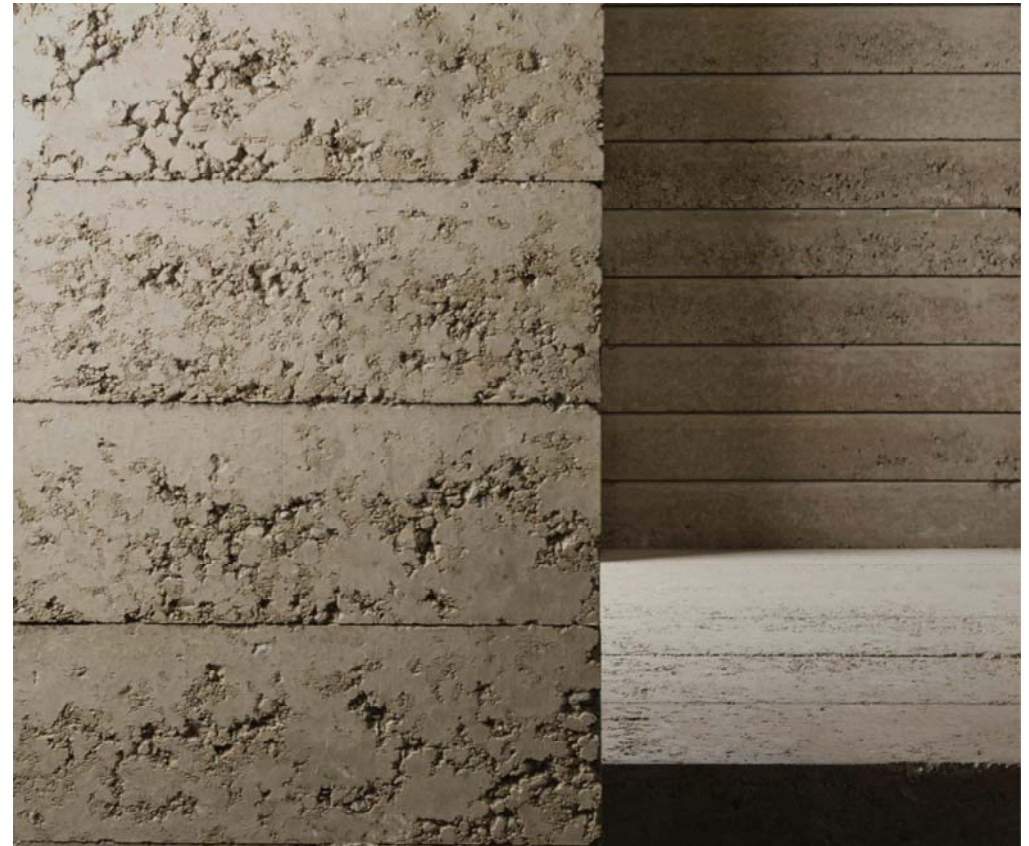
Appearance and surface	Rugged surface texture, with sporadic appearance of coarse aggregate as finishing texture
Finished	Sighted surface
Placement	Exterior and interior
Colour	Earth
Area	6,7 blocks/m2.

Density	2.000 Kg/m3
Compression resistance	5,0 N/mm²
Cycle resistance moistening / drying	Suitable
Resistance to erosion	Suitable
Water absorption test by capillarity	4,5 %
Oxidable organic material content	0,06 %
Impact resistance	> 24,6 Joules
Fire resistance	A1
Coefficient of thermal conductivity	0,778 W/m·K
Specific heat	2,05 MJ/m3K
Thermal resistance	0,514 m2·K/W
Thermal inertia - thermal damping	83,74%
Thermal inertia - thermal gap	9,15 hours
Reduction index. R <sub>A</sub>	66 dBA

The blocks are presented in indivisible pallets.

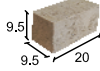
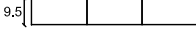
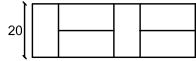
It should be stored in a protected and dry place. Do not stack pallets.

blocks/pallet	Quantity/pallet	weight/pallet	Dimensions/pallet
9 blocks / pallet	1,34 m2/pallet	1.125 kg/palet	120 x 120 cm



## DATA SHEET

## FETDETERRA

	Product	Tapialblock® 10/20/10
	Dimensions	9.5 x 20 x 9.5 cm
	Weight	3.6 kg
	Wall thickness	9.5 cm
	Structural wall thickness	20 cm

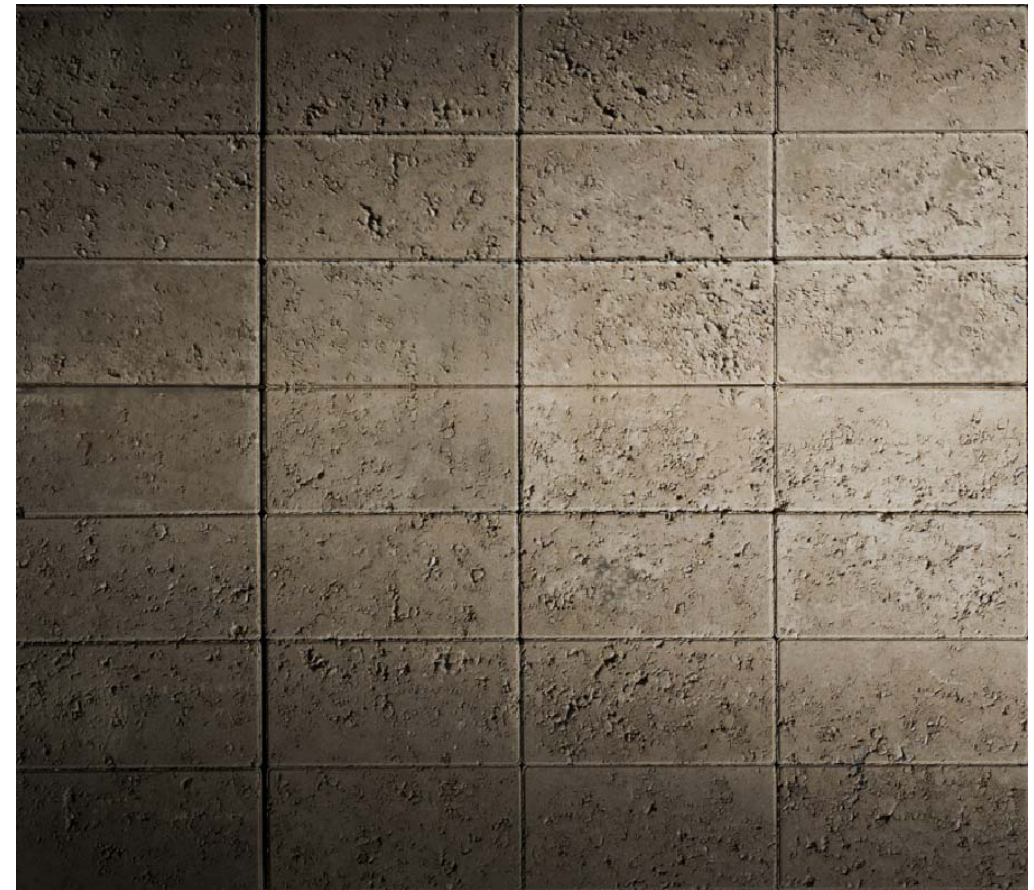
Appearance and surface	Rugged surface texture, with sporadic appearance of coarse aggregate as finishing texture
Finished	Sighted surface
Placement	Exterior and interior
Colour	Earth

Density	2.000 Kg/m <sup>3</sup>
Compression resistance	5,0 N/mm <sup>2</sup>
Cycle resistance moistening / drying	Suitable
Resistance to erosion	Suitable
Water absorption test by capillarity	4,5 %
Oxidable organic material content	0,06 %
Impact resistance	> 24,6 Joules
Coefficient of thermal conductivity	0,778 W/m·K
Specific heat	2,05 MJ/m <sup>3</sup> K
Fire resistance	A1
Reduction index. R <sub>a</sub>	45 dBA

The blocks are presented in indivisible pallets.

It should be stored in a protected and dry place. Do not stack pallets.

Pcs/pallet	270 blocks / pallet
Dimension/pallet	120 x 100 cm
weight/pallet	1.215 kg/pallet



# DATA SHEET



# FETDETERRA

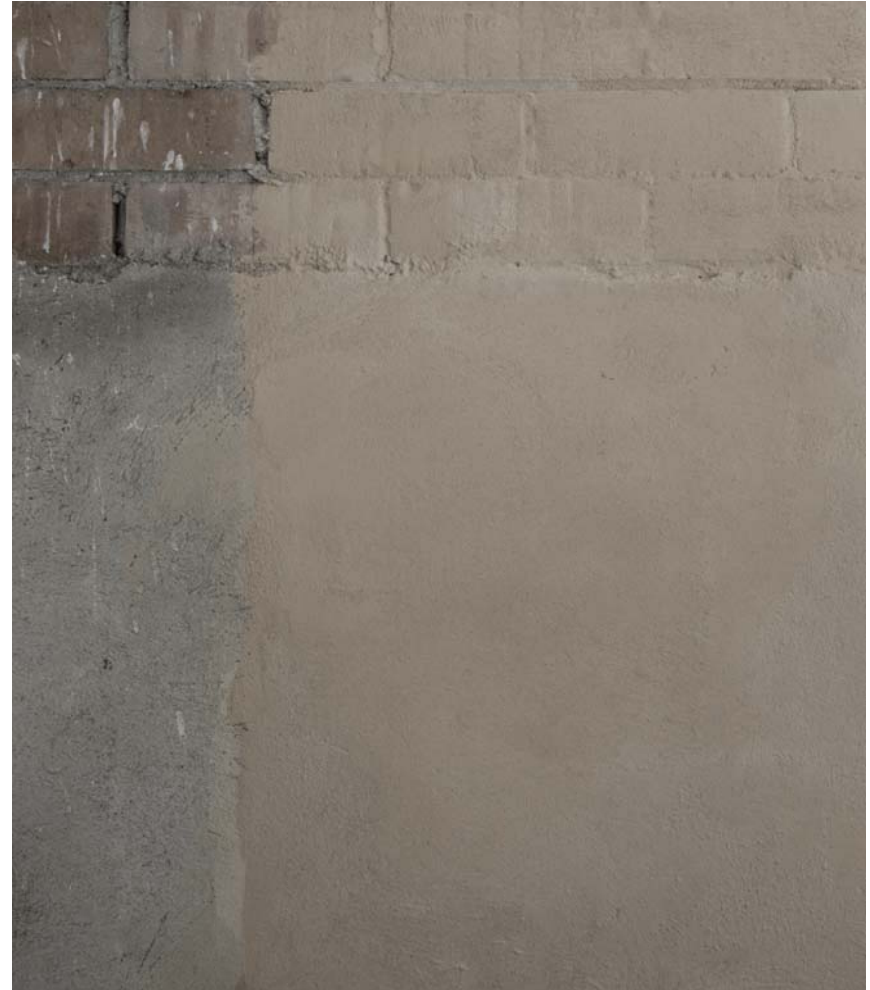
INNOVATIVE EARTH PROJECTS AND PRODUCTS

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EARTH PAINTING

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## EARTH PAINTING

Fetdeterra® earth painting is manufactured with natural earth components, it contains no toxic ingredients, neither VOCs (harmful chemicals released during and after application) or artificial pigments, the clay gives the color to the mix. Earth painting regulates interior humidity and it's breathable, the lime in its natural carbonation process absorbs CO2 from the environment and purifies the air, it's considered healthy material for user and environmentally sustainable.

## COMPOSITION

Clay, sand 0-1 mm, lime and < 5% organic components

## PRODUCT DATA

Earth painting for walls and ceiling, interior and exterior.

Standard Product: 22 kg dry powder in paper bags.

Coverage 2 - 3 m<sup>2</sup> / kg depending on the characteristics of the support.

Dissolution in water: 1L for 1 kg of dry paint powder.

Drying time: 24 hours

Safety: should be handled with gloves, and wear a dust mask when mixing dry powder, avoid contact with eyes.



## SUPPORT PREPARATION

It should not be used on dusty, non-cohesive substrates or those containing traces of oils, paints, salts or other elements that prevent a right adherence to the substrate.

Both the previous cleaning of the surface must be carried out, as well as the elimination of inconsistent parts before proceeding with its application.

For small repairs of the base, the same material can be used with mortar dosage, and apply the last coat of paint later.

It's essential to previously humidify the support that will be painted to ensure good adhesion and right drying of the paint.

Do not use in areas in direct contact with liquid moisture or excessively humid areas.

Not suitable for floors or stair treads.

## PAINT PREPARATION

In order to make a 1mm thick layer, a 1 kg of Fetdeterra® earth painting is mixed in 1L of clean water, with a mixer at the highest possible speed, stirring well approx. 3 minutes, after a 15 minute rest period, the paint is shaken well again for 1-2 minutes. The material is processed to a "pulpy" consistency; it should not drip off the brush. Repeated application in several layers is possible. During application, the paint must be stirred over and over again to prevent the mixture from segregating.

## APPLICATION AND FINISH

Once the paint has been prepared, it is applied with a brush or roller. All the surface should be painted and joints avoided. The application is similar to a conventional paint with the exception of the finishing process, since earth paint offers the possibility of being able to work the surface, once the paint has been applied, to achieve different finishes.

If a smooth finish is preferred, this is achieved by troweling. However, a more textured, open grain finish can be achieved by using a damp sponge to remove brush strokes.

Fetdeterra® soil paint contains coarse aggregate, thus providing a subtly textured and handcrafted finish, where the color and texture will not be flat or homogeneous like a conventional paint



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