SiBrick

Making Good Things Better

Innovative Solution
For Effective Structural Ceramics

February 2020

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Brick Evolution

One of the main steps
in evolution of humankind
was invention of burnt ceramics.

Since then during 5,000 years
of our history **ceramic bricks**
are the best material
for the comfortable home.

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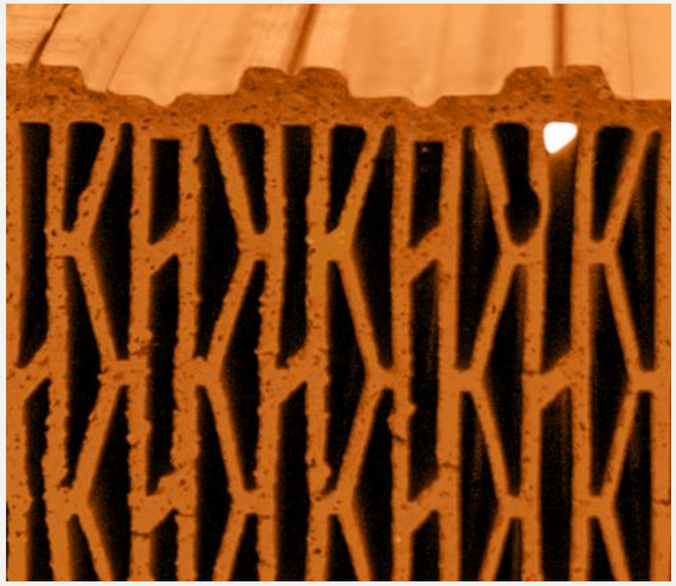
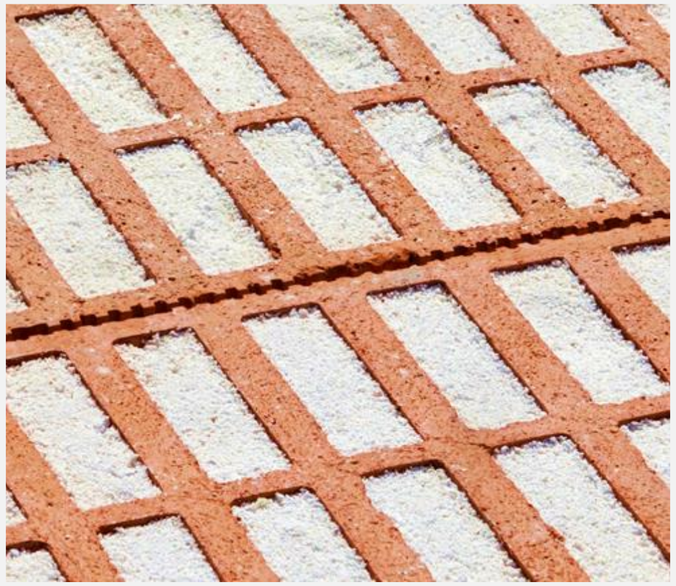
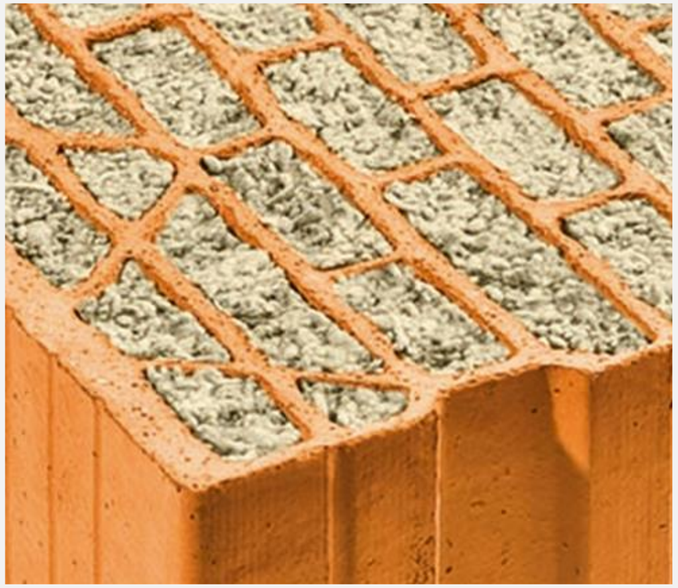
Brick Evolution

Over this period people transformed and improved the brick itself – from hand-formed bricks to effective multi-chamber ceramic blocks and large ceramic stone tiles filled with perlite or mineral fibers.







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About SiBrick

SiBrick is the next stage
of brick evolution progress.

SiBrick is **innovative solution**
for effective structural wall ceramics.

We fill the gaps in ceramic blocks with
porous silicate material SioTherm
that has very low thermal conductivity.

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About SiBrick

SiBrick technology allows the production
of large ceramic blocks
that have **a lot of advantages**
towards ones filled with
perlite or mineral fibers
absolutely avoiding
their disadvantages.

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About SiBrick

SiBrick technology provides the opportunity to produce large ceramic stone tiles with a thermal resistance of R=10m² °K/W (U-Wert= 0.1 W/m² °K) with a wall thickness of 50 cm.

The technology is very flexible and any structural ceramics (large blocks, clinker bricks etc.) can be filled with **SioThrem** – the combination of porous **SioPor** granules with **SiCoat** silicate binding.

Low-temperature drying (300 °C) expands **SiCoat** between **SioPor** granules to form the homogenous fill with fractal porosity.

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About SiBrick

This material we call **SioThrem**
and it is used in
effective elements
of construction and industrial
thermal insulation
due to its characteristics
and **properties**.

SioTherm surface
cut-off (macro)

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SioTherm Properties

- **Low bulk density** of 90-120 kg/m^3
- **Low thermal conductivity** (λ=0.045 W/m °K at 20 °C)
- **Stable form** and **no shrinkage** during the operation period
- **Non-combustible** (European Class A1)
- **Zero-emission** (European class E0)
- **Fiber-free**
- **Waterproof**, moisture-proof
- 100% **Recyclable**

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SiBrick Evolution

We define 3 main factors of **SiBrick evolution**:

- Dramatic **reduction in energy consumption and CO_2 emission**
- 100% **recyclability**
- Ability to produce SiBrick blocks even with **clinker bricks**

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SiBrick Evolution

Energy consumption and CO_2 emission

SiBrick allows to dramatically reduce energy consumption
and CO2 emission during the production of ceramic blocks.

We can clearly see the difference in temperature
needed for the production of different aggregates used for ceramic blocks:

- Mineral fibers – 1500 °C
- Perlite – 1100 °C
- **SiBrick (SioTherm filler)** – 300 °C

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SiBrick Evolution

Recyclability

Unlike mineral fiber filled ceramic blocks, the ones using **SiBrick** solution are 100% recyclable and do not require any special waste treatment.

The block can be crushed and separated with air.

Ceramic shards can be utilized in a conventional way as all the bricks.

While **SioTherm** filler can be crushed and reused for **SiBrick** production or as an effective aggregate for extra-light concretes.

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SiBrick Evolution

Production of clinker blocks

SiBrick solution is available even for **hollow clinker bricks** and in combination with large ceramic blocks.

This allows avoiding plaster usage and customers can have brick houses with **warm walls** and perfect facade look of any clinker stone.

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Production

SiBrick technology is simple and reliable.

And can be installed almost at any modern structural ceramics production facility.

It is important to note that **SiBrick** production can **utilize the secondary heat** of brick production kilns and furnaces as it requires the temperature of just 300 °C.

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Contacts

Visit our website to see info
about our products and solutions:

https://si-tech.solutions/sibrick

Visit our YouTube channel
for product demo videos:

https://tinyurl.com/Si-Tech

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