



download

# product specification

# geopietra

## DESCRIPTION

Geopietra® makes the most believable eco-friendly manufactured stone veneer in the world. Geopietra® is a mix of Portland cement concrete, light aggregates and permanent mineral oxide-based colours. The stone is manufactured in various sizes, shapes and textures, using an exclusive method and manual dyeing, which gives the final product a believable aspect that is absolutely unparalleled compared to standard mechanical production.

## APPLICATION

Internal and external wall cladding.

## INSTALLATION

Geopietra® manufactured stone veneer must be installed in strict compliance with the instructions provided and local building code requirements. If the user fails to verify that all the assumed installation conditions specified in the Installation Manual accompanying each delivery (or downloadable from [www.geopietra.com](http://www.geopietra.com)) are met or does not use the Geocoll® and GeoBi accessory products recommended by Geopietra® Srl, the warranty shall become null and void and no liability will be attributable to the vendor for any problems arising therefrom.

## COMPATIBILITY ON EXTERNAL THERMAL INSULATION

Due to its technical characteristics, Geopietra® manufactured stone veneer is the only one of its kind suitable for installation on walls with external thermal insulation cladding. Thousands of square metres installed in over 20 years are tangible proof of its absolute suitability. Lengthy experience and stringent laboratory tests have led to a system that guarantees external thermal insulation integrated with manufactured stone veneer ([www.mastrosistema.com](http://www.mastrosistema.com)).

## WARRANTY

Geopietra® manufactured stone veneer is covered by a 50-year warranty from the date of purchase, provided it is used and installed in accordance with the manufacturer's directions and instructions. The warranty covers product manufacturing defects. It does not cover labour for removing or replacing faulty parts.

## SHAPES AND SIZES

Manufactured stone veneer is available in single units in the size range of minimum 50 cm<sup>2</sup> to maximum 200 cm<sup>2</sup>. Each pattern consists of a series of moulds that are obtained from natural stone parts, all different from each other. For example, pattern P04 Lavone comprises 600 different moulds. Each pattern comes with special angle units.

## WEIGHT AND THICKNESS

Weight ranges from 50 to 70 kg/m<sup>2</sup>, according to the pattern and laying method (with or without grouting), including finishing materials. The average thickness is 5 cm.

## PATTERNS

The range of patterns includes 43 different types of manufactured stone veneer, with 6 different categories: scale effect profiles, opus incertum profiles, square profiles, spontaneous profiles, castle profiles, panel profiles and a wide range of natural or manufactured brick patterns, with endless combinations.

## COLOURS

The end colour is the result of many variables, from the range of stone shades to installation, from the grout colour (5 GeoBi colours) to the method of use. Manufactured stone veneer is available in base colours and special colours, which can be mixed together, except for the Panel patterns and the Castle profile, which cannot not be mixed either together or with others in the same collection due to their shape and colouring.

## PACKAGING

The material is packed wet in special impermeable packs, where chemical setting processes and colour fastening are still in progress. The process continues for a few months and ends only after wall installation. The colour shade is very dark when the product is received, but it soon takes on its final appearance when exposed to air.

**INGREDIENTS** Geopietra® is made from very simple raw materials that have been carefully selected in accordance with high US standards: **light aggregates, Portland cement, Mineral oxide pigments.**  
Reference standards: ASTM C150, C595, C989 / ASTM C618 / ASTM C144 / ASTM C33, C330, C332 / ASTM C979



Geopietra® manufactured stone veneer, which was designed and developed in partnership with Eldoradostone, complies and exceeds the requirements of US building code 546T / ICC-ES / ER-3568 - NER-602 / LARR # 25589 / HUD # 910.

**FIRE RESISTANCE** Non-combustible Class MO  
Flame propagation 0 Smoke released 0

**COLOUR FASTNESS TO SUNLIGHT** Only permanent pigments containing mineral oxides are used. The colour sets after 2-6 months of exposure to weather. No unwanted change of colour is observed, even after years of exposure.

**FREEZE-THAW RESISTANCE**  
Tested in accordance with ASTM C 67

**WATER ABSORPTION**  
Tested in accordance with UBC N° 15-5 variable from 12 to 22%

**DENSITY**  
Tested in accordance with ASTM C 567 1200 Kg / m<sup>3</sup>

The following tests were carried out at  
Milan Polytechnic test laboratory / test report no. 208/08

**THERMAL CONDUCTIVITY FACTOR**  
Tested in accordance with UNI EN 12667 0,1866 W/mK

**COMPRESSIVE STRENGTH**  
Tested in accordance with EN 14617-15 21,6 MPa

**BEND STRENGTH**  
Tested in accordance with EN 14617-2 3,7 MPa

**BEND STRENGTH AFTER FREEZE-THAW CYCLES**  
Tested in accordance with EN 14617 - 5 3,2 MPa

**WATER ABSORPTION by immersion** Tested in accordance with EN 14617-1  
(%) After 1 hour (%) After 8 hours (%) After 24 hours  
**+7,6 +12,5 +14,4**

**VAPOUR PERMEABILITY** Average  $\mu$  26.4 referred to the stone  
(being the finished surface of varying thicknesses and materials)

The tests carried out by the TÜV Nederland Laboratories:  
**NEN-EN 772 / 998 / 494 / 196 / 1050 / 771 / 459 / 197 / 413 / 1339**



## ADVANTAGES AND POTENTIAL DEVELOPMENT

**1. Lightweight.** Geopietra® manufactured stone veneer masonry is designed to weigh 50-70 kg/m<sup>2</sup> according to the chosen pattern and installation method, compared to 60-700 kg/m<sup>2</sup> of natural stone masonry. This property makes Geopietra® manufactured stone veneer ideal for cladding lightweight structures, such as coating, plasterboard, cement fibre, wooden panels, insulated sheets and mobile structures. It does not require any particular embodiments for any types of installation, including sky-high ones, or any particular foundation or specifically reinforced structures.

**2. Breathable.** The healthy function of the housing envelope is guaranteed by the natural ingredients used and excellent breathability of Geopietra manufactured stone veneer ( $\mu$  26.4). The wall breathes, remains dry and allows the natural transition of water condensate. Geopietra® manufactured stone veneer thus enhances the insulation performance of external thermal insulation systems. The new GeoBi two-component mortar has also been lightened using materials that allow an even surface finishing.

**3. Resistance and thermal inertia.** Experiments on density and porosity have led to the attainment of a perfect balance between resistance and thermal inertia, which make this solution ideal for installation on thermal insulation and protection of all types of backing. Geopietra® manufactured stone veneer inhibits thermal shocks due to sudden climate changes, has very long absorption and release times, evidence of it is the flammability test conducted in Austria by Abitasistema, where EPS insulation panels protected by manufactured stone veneer did not show any signs of failure after half an hour's exposure to 900°C.

**4. Low thickness.** The thickness of Geopietra® manufactured stone varies from 3 to 7 cm, while that of manufactured brick is from 1.5 to 3 cm, according to pattern. Reducing the thickness does not affect the end result in terms of aesthetics, function and sensorial feeling: rather it provides great space-saving both indoors and outdoors, which is a major requirement today.

**5. Frostproof.** Geopietra® manufactured stone veneer is the only product in the European construction industry that can boast 50 years of experience acquired by the parent company, which is tested frost-proof and extensively tested in widely different climates. The technical developments made to make it suitable for installation on thermal insulation systems and the improved weight and thermal resistance have led to an increase in internal micro-porosity, thus creating more space for water expansion when it is transformed into ice. Water absorption has been reduced by a further 20% compared to previous formulations.

**6. Colour fastness.** Only permanent mineral oxide-based pigments are used for the staining of Geopietra® manufactured stone. It takes 2-6 months of exposure to

atmospheric agents for the colour to set using a special process. No undesirable change of colour has been noticed even after years of exposure.

**7. Eco-friendly.** Geopietra® manufactured stone veneer is made up of natural ingredients only; it reduces the aesthetic attractiveness of natural stone to a few centimetres, and contributes to reducing the quarrying of natural stone and protecting the environment and landscape. Geopietra® promotes environmental values and building traditions while pursuing home living comfort and energy efficiency.

**8. Functional and quick.** Geopietra® manufactured stone veneer is simple to use and the consumption of material can be easily calculated without producing waste - it can be laid using a few simple tools. It is delivered in boxes that are easy and quick to handle on site and on scaffoldings. At the end of work, only the boxes and empty adhesive and mortar bags need to be disposed of.

**9. Believable and natural.** Mould technology, the exclusive ageing system and the manual processing processes contribute to carefully transforming stone into a product of a superior craftsmanship value, which is never the same. Geopietra® manufactured stone is available in single units of various sizes. Each pattern comes complete with special angle units that give the wall a 3-D effect, thus producing exactly the appearance of a bearing structure made of natural stone.

**10. High aesthetical and emotional value.** Geopietra® manufactured stone veneer has the ability to convey and express different architectural styles and languages. Thanks to its superior technical features and absolute compatibility with today's building materials and systems, it is highly sought-after for contemporary architectural solutions, by adding character and emotional strength. Geopietra® offers the possibility of creating a unique work, expressing personal vision of living and creativity. Its beauty bears the sign of the time passing by and accompanies our true innermost emotions.

**11. Full of nuances reminiscent of times gone by:** the colouring of the meticulous surface finish makes Geopietra® manufactured stone veneer truly unique. Geopietra® has always chosen to replicate not only the hues of natural stone but also its most emotional factor: the passing of time. Geopietra® manufactured stone veneer is processed to convey an antique effect by using colours typical of rust and mosses that give the perception of bygone days, a feeling that even newly quarried natural stone cannot give. For the colour to be so unique, it requires an entirely handmade process, which makes it one of a kind, so much so that no two pieces of stone are the same.