



Manual preparation of the borehole for an explosive charge.

“We work with nature, we work with rocks that are millions of years old, among rivers, volcanos and geological changes. Each piece is unique and different from all the others. Each one has its history. Enjoy this history and all the Man’s art”

## **THE HISTORY** *the trade of the quarryman*

Strength, courage and experience. These are the qualities that have always distinguished the quarryman, an ancient trade essential for the extraction of the ornamental stone that has given the Valtellina the worldwide recognition it enjoys today.

The work of the quarryman has always been dangerous, especially in times when the extraction of the stone and its transportation to the valley was carried out with primitive means. But with the passage of time and the advent of new technologies, the quarries became more accessible, working conditions improved and the craft became far less dangerous.

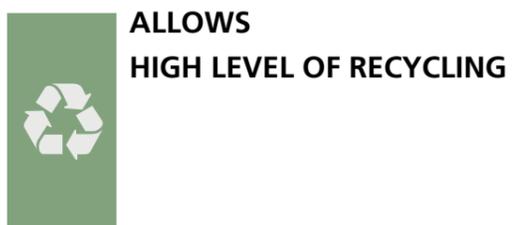
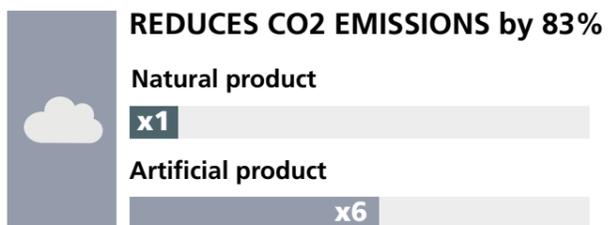
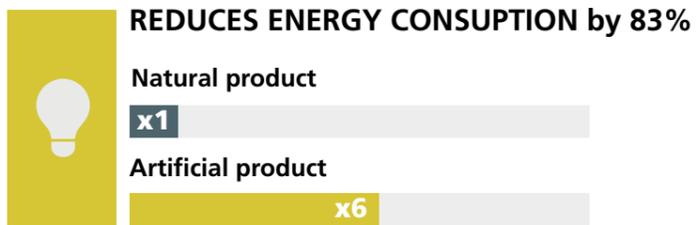
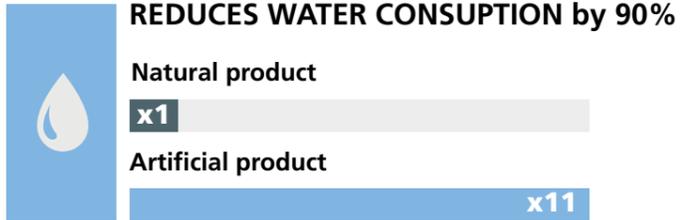
With great humility and determination, these men dedicated to working the stone gave life to an industry that was to play an integral role in the socio-economic development of Northern Italy.

Serpentino e Graniti took up this great heritage and over the years has brought it to a level of excellence by managing to couple the traditional artisan character of the trade with the need to introduce more advanced, sophisticated methods



## THE SERPENTINE

*A choice of environmental benefit.*





## SERPENTINO E GRANITI

*a tradition of quality*

The Serpentino e Graniti company has been Italian leader in the field of serpentine stone quarrying for three generations. The company's growth over the years is the tangible proof of the values it has always pursued: precision, reliability, professionalism, continuity and rapidity in its deliveries and the high quality of its finished products. The company manages the entire production process, dedicating particular attention to sustainable growth in full respect of environmental standards, which naturally include the restoration of disused quarry areas and the health and safety of its employees. The four rich deposits managed by Serpentino e Graniti located in Valmalenco (Province of Sondrio) make the company one of the province's most important industries.

The strategic position of the headquarters in Chiuro, well-connected and close to the major European markets, has contributed significantly to the development of numerous other industries closely linked with the territory the company operates in. Through its use of extremely advanced technology, Serpentino e Graniti has gained worldwide acclaim. The company indeed exports its products throughout Europe and has made significant contributions to the construction of a number of the continent's important works of modern architecture (for example, the German Chancellery in Berlin). It also exports to the United States and Asia, effectively establishing itself on the world market.

Left, cutting with diamond wire.  
Above, moving blocks with backhoe.



## WHY SERPENTINO E GRANITI

*our strengths*

Serpentino e Graniti offers its experience and skill in all types of cutting techniques, including large, heavy pieces, to meet all of its customers' needs starting from any available digital design format. The company is also capable of prompt intervention in case of any technical and/or quantitative modifications that may be necessary during the course of works. And that's not all: the company is likewise capable of finding the same material used to create a given product, even after several years, to assure perfect compatibility for maintenance or replacement works.

The company believes in the importance of providing a constant, highly qualified service, and for this makes exclusive use of the services of equally qualified engineers, capable of providing valid support in solving any kind of structural problems encountered in the assembly or laying of the serpentine stone.

Above, marble block cutting frame.  
Right, cutting serpentine elements.





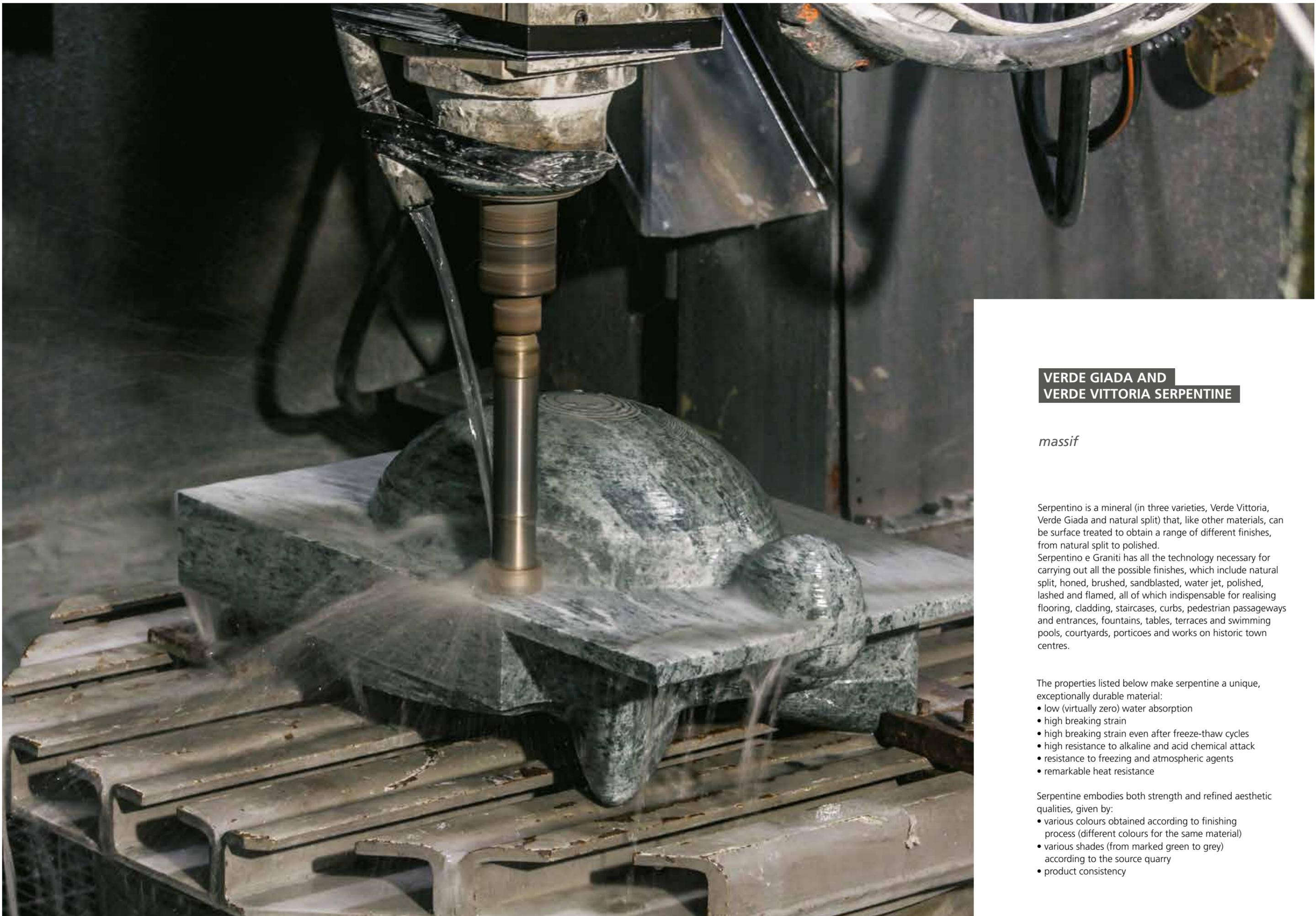
**FROM THE ROCK TO THE FINISHED PRODUCT**  
*the production process*

Serpentine rock is widely appreciated both for its durability and for its elegance and chromatic variety. The differences in colour obtained according to the way it is worked, and the differences in shade (from markedly green to grey) according to the quarry it is extracted from, not to mention the consistency of the finished product, make serpentine an exceptionally versatile material ideal for a wide range of applications. It is perfect for the internal and external cladding of all kinds of buildings, both public and private, highlighting their architectural features and volumes without rendering them heavy. It is ideal for furnishing accessories, thanks to its natural elegance. It is absolutely impeccable for paving, whether internal or external, and urban furnishings, giving homes a warm, intimate atmosphere and valorising the harmonic balance of our cities. Stone roofs in "piode" in particular have achieved international acclaim not only for the beauty of their characteristic colours, but for the sheer strength and durability of their structure as well, solid and well-engineered. Thanks to this versatility, over the years serpentine has been increasingly sought by architects and designers studying new and original solutions to valorise the forms of the urban landscape and the quality of our homes.

Serpentino e Graniti manages all phases of the production process, from the extraction of the rock to its working by skilful craftsmen, transformation in the workshop and distribution on the market. The first step in the process, extraction, takes place using diamond wire cutters and partly with the use of explosives. The blocks obtained are transported to the plant for squaring with diamond wire cutters and then mounted on multiple blade cutting frames or giant disk cutters to obtain sheets of varying thickness. The sheets can then be profiled and finished directly according to the customer's designs. The final phase of the process is the most delicate and uses high technology methods to transform the surfaces of the stone, which can be finished in a great many ways: from elegantly smooth to rustically rough, without altering its natural colour.



Above, the finishing process.  
 Right, quality control and preparation for shipment.



## VERDE GIADA AND VERDE VITTORIA SERPENTINE

### *massif*

Serpentino is a mineral (in three varieties, Verde Vittoria, Verde Giada and natural split) that, like other materials, can be surface treated to obtain a range of different finishes, from natural split to polished.

Serpentino e Graniti has all the technology necessary for carrying out all the possible finishes, which include natural split, honed, brushed, sandblasted, water jet, polished, lashed and flamed, all of which indispensable for realising flooring, cladding, staircases, curbs, pedestrian passageways and entrances, fountains, tables, terraces and swimming pools, courtyards, porticoes and works on historic town centres.

The properties listed below make serpentine a unique, exceptionally durable material:

- low (virtually zero) water absorption
- high breaking strain
- high breaking strain even after freeze-thaw cycles
- high resistance to alkaline and acid chemical attack
- resistance to freezing and atmospheric agents
- remarkable heat resistance

Serpentine embodies both strength and refined aesthetic qualities, given by:

- various colours obtained according to finishing process (different colours for the same material)
- various shades (from marked green to grey) according to the source quarry
- product consistency

# TYPES AND FINISHES

verde vittoria serpentine

polished

honed

brushed

sandblasted



verde giada serpentine

polished

satinized

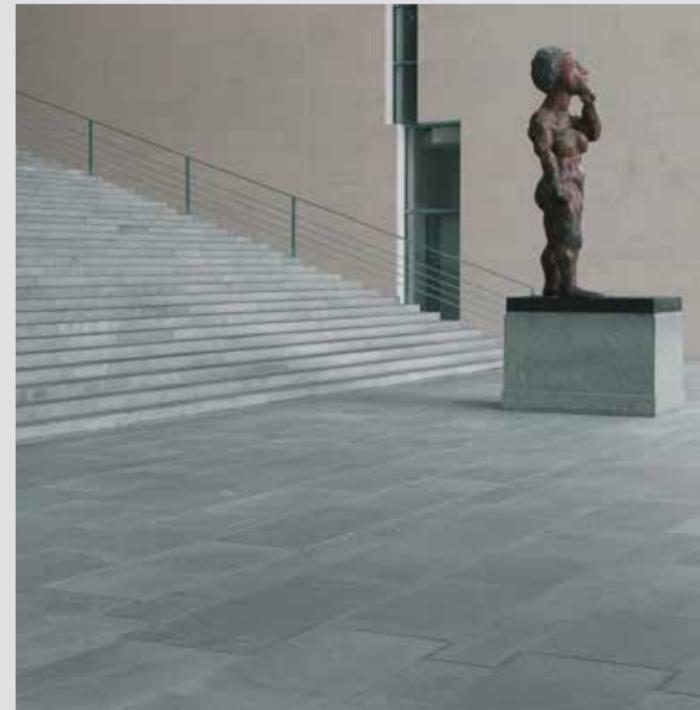
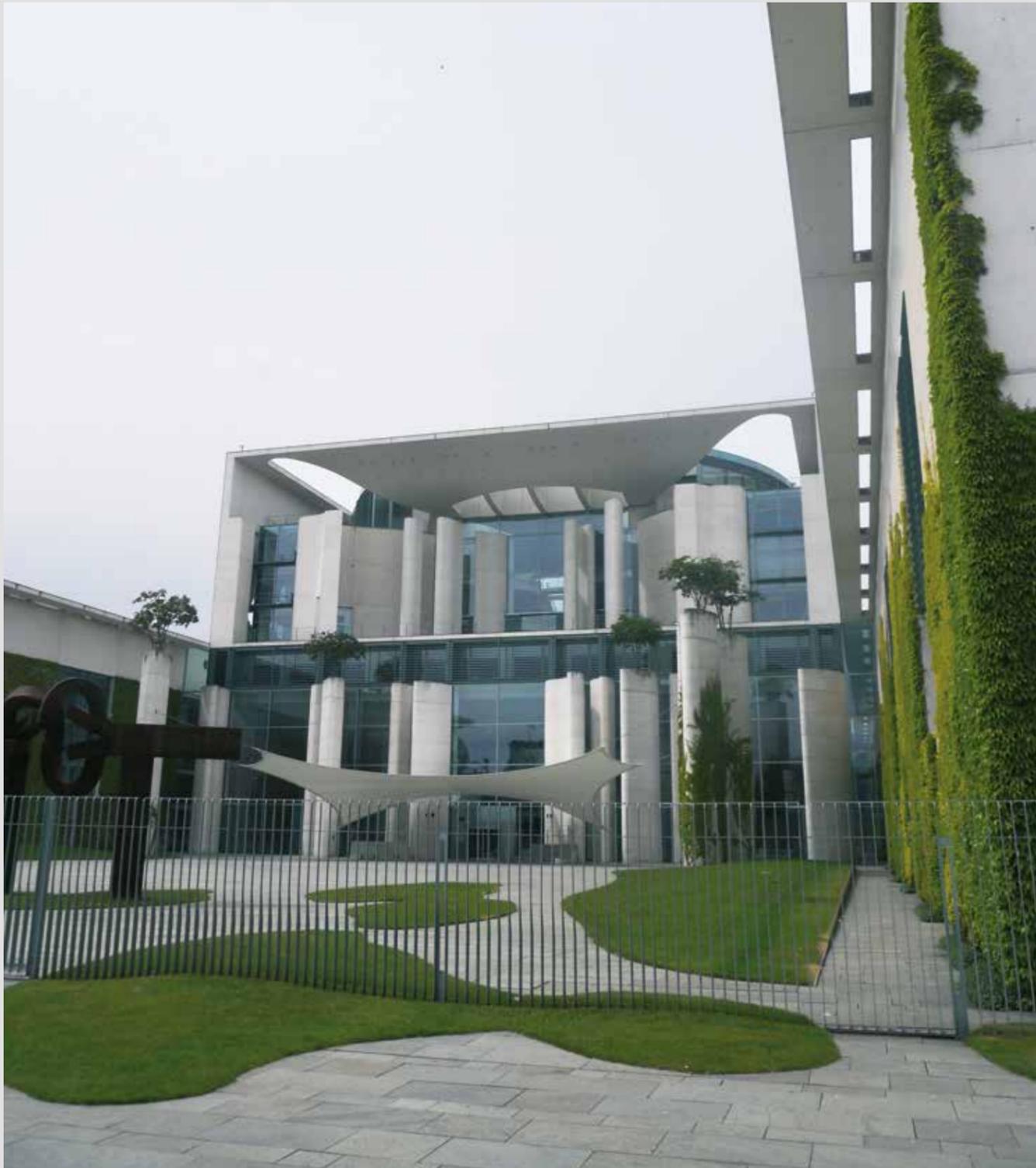
lashed

sandblasted



**APPLICATION IN ARCHITECTURE**  
**BERLIN CHANCELLERY (GERMANY)**

Interior and exterior flooring, staircases and planters.  
Architects: Axel Schultes, Charlotte Frank, Christoph Witt.  
Material: Sandblasted Verde Vittoria Serpentine.  
Date of works: completed in 2004.



**APPLICATION IN ARCHITECTURE**  
**VGH INSURANCE, HANNOVER (GERMANY)**

External facade cladding.  
Architects: Schneider Meyer Partner.  
Material: Sandblasted Verde Vittoria Serpentine.  
Date of works: completed in 2008.



## APPLICATION IN ARCHITECTURE

### Sjöstadsporten – HOTEL, STOCKHOLM (SWeDEN)

External facade cladding.

Architects: Ramböll Sverige AB

Material: Sandblasted Verde Vittoria Serpentine.

Date of works: completed in 2009.



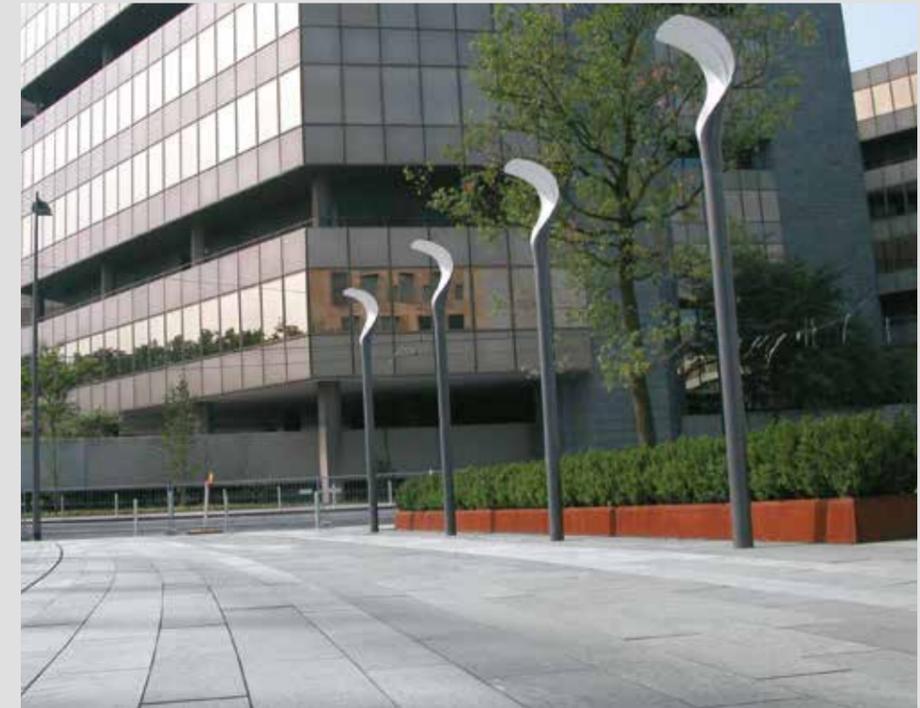
**APPLICATION IN ARCHITECTURE**  
**BV DKV, COLOGNE (GERMANY)**

Paving, planters and furnishings.

Architects: Smeets - Landschaftsarchitekten

Material: Sandblasted, water-jet and bush hammered Verde Vittoria Serpentine.

Date of works: completed in 2012.



## APPLICATION IN ARCHITECTURE

### TERME BAGNI VECCHI, BORMIO (ITALY)

Pool linings and other claddings.

Architect: Gerosa Paola

Material: Sandblasted Verde Vittoria Serpentine.

Date of works: completed in 2000.



**APPLICATION IN ARCHITECTURE**  
**BORMIO TERME SPA (ITALY)**

Cladding, staircases, terraces, Turkish bath.  
Architects: Lombardini, Eng. Turin  
Material: Sandblasted and brushed Verde Giada Serpentine.  
Date of works: completed in 2007.



## APPLICATION IN DESIGN

### DESIGN COMPLEMENTS

Sink of Serpentine Verde Vittoria honed, top of Serpentine Verde Giada brushed, facing of Serpentine Verde Giada satinized.

Lamp of Serpentine Verde Vittoria brushed, facing of Serpentine Verde Giada satinized, sandblasted, honed and brushed.



**APPLICATION IN DESIGN**  
**DESIGN COMPLEMENTS**

Facing of Serpentine Verde Giada honed, brushed and sawn surface.  
Lamp of Serpentine Verde Giada lashed.



**APPLICATION IN DESIGN**  
**PROCESSING TYPES**



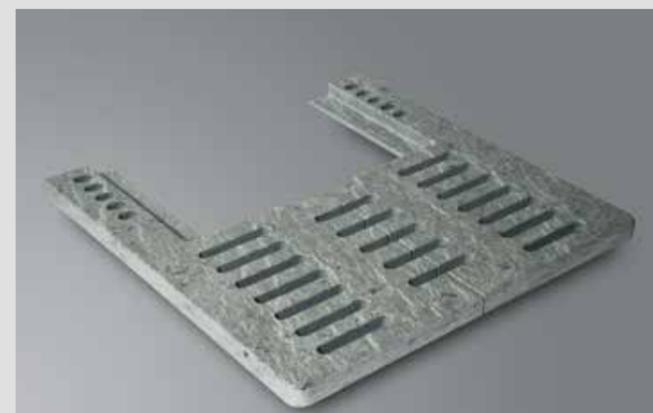
The technology employed by Serpentino e Graniti allows the company to make parts in 2D and 3D based on the customer's designs. Moreover, the introduction of robotic technology has made it possible to manage large production batches using fully automated processes, significantly reducing production costs. The company offers the services of its technical office to designers during the initial design phases of any stove, for advice on the best methods for anchoring the stone, surface finishes and profiling. As well as perfecting the final product, this kind of advice often leads to significant cost savings. Using serpentine in place of the more traditional majolica or ceramics offers a range of advantages: in addition to offering better thermal performance thanks to the increased heated mass, the preciousness of the material valorises the aesthetic of the stove, and the manufacturing technology used is more flexible, making smaller production batches and modifications in production more easy to manage.

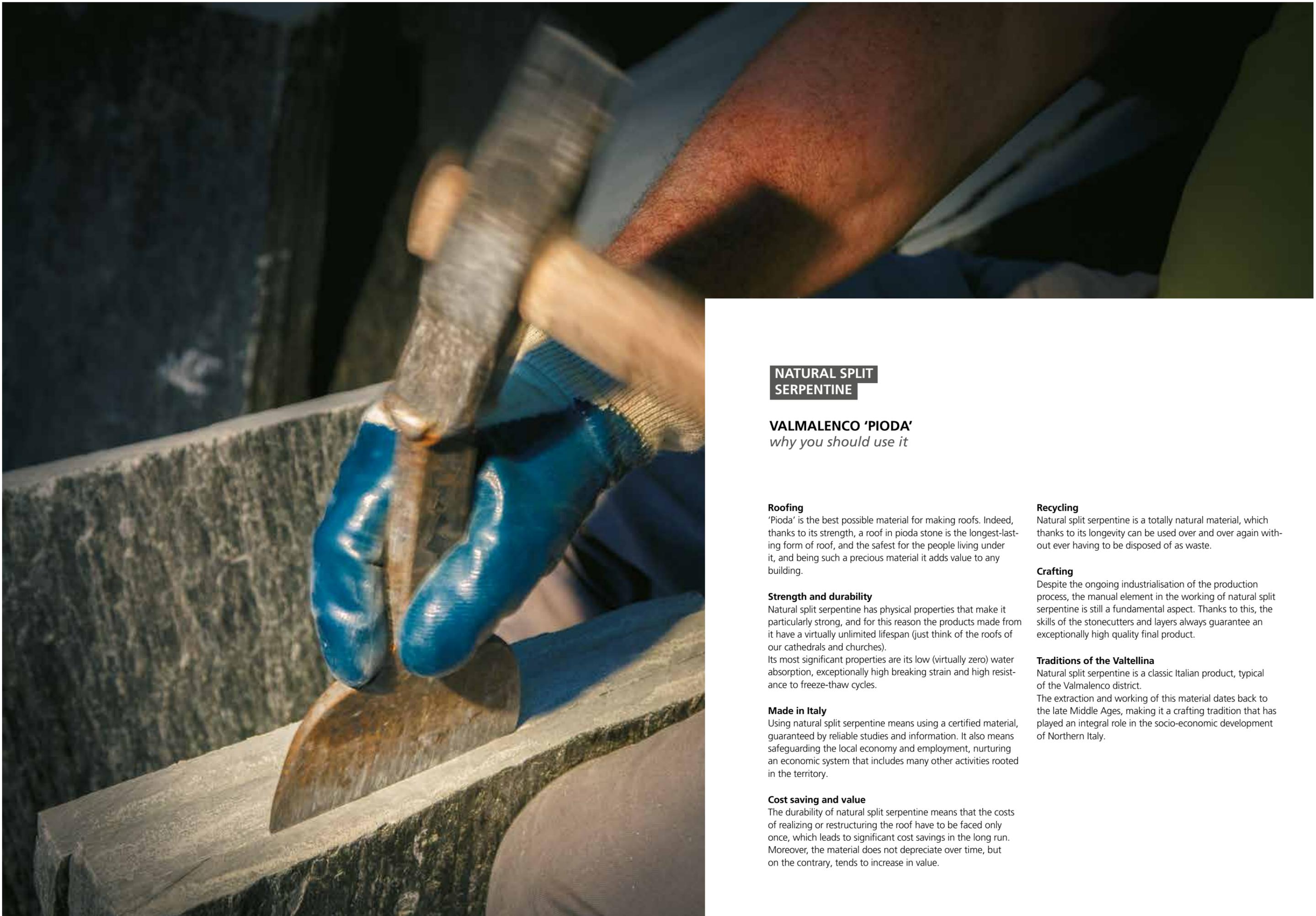
Stoves in high quality serpentine have unmistakable features and looks. This type of stone is indeed capable of combining exceptional beauty with the capacity to accumulate and gradually release heat, thus maintaining a pleasant temperature for long periods of time. Serpentino e Graniti makes components for stoves with great attention to detail in the working of the material, and is able to customize components according to customer requirements. The quality of these components is given by the skill with which Serpentino e Graniti manages to combine two fundamental elements: elegance and functionality.

**APPLICATION IN DESIGN**

**PROCESSING TYPES**

APPLICATIONS EXAMPLES





## NATURAL SPLIT SERPENTINE

### VALMALENCO 'PIODA' *why you should use it*

#### **Roofing**

'Pioda' is the best possible material for making roofs. Indeed, thanks to its strength, a roof in pioda stone is the longest-lasting form of roof, and the safest for the people living under it, and being such a precious material it adds value to any building.

#### **Strength and durability**

Natural split serpentine has physical properties that make it particularly strong, and for this reason the products made from it have a virtually unlimited lifespan (just think of the roofs of our cathedrals and churches).

Its most significant properties are its low (virtually zero) water absorption, exceptionally high breaking strain and high resistance to freeze-thaw cycles.

#### **Made in Italy**

Using natural split serpentine means using a certified material, guaranteed by reliable studies and information. It also means safeguarding the local economy and employment, nurturing an economic system that includes many other activities rooted in the territory.

#### **Cost saving and value**

The durability of natural split serpentine means that the costs of realizing or restructuring the roof have to be faced only once, which leads to significant cost savings in the long run. Moreover, the material does not depreciate over time, but on the contrary, tends to increase in value.

#### **Recycling**

Natural split serpentine is a totally natural material, which thanks to its longevity can be used over and over again without ever having to be disposed of as waste.

#### **Crafting**

Despite the ongoing industrialisation of the production process, the manual element in the working of natural split serpentine is still a fundamental aspect. Thanks to this, the skills of the stonemasons and layers always guarantee an exceptionally high quality final product.

#### **Traditions of the Valtellina**

Natural split serpentine is a classic Italian product, typical of the Valmalenco district.

The extraction and working of this material dates back to the late Middle Ages, making it a crafting tradition that has played an integral role in the socio-economic development of Northern Italy.

## TYPES AND FINISHES

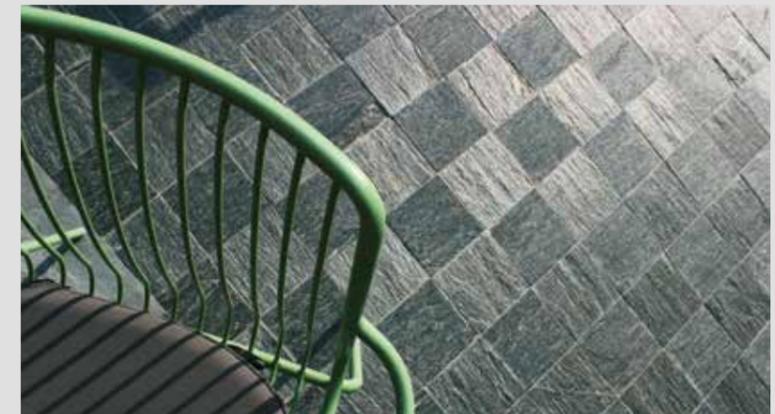
natural split serpentine

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# REALIZATIONS

ROOFING, FLOORING, RAW ROCKS



## OUR QUARRIES

massif



### LANZADA

The Verde Vittoria serpentine quarry in Valbrutta, municipality of Lanzada (SO) was opened by the company in the 'nineties.

Estimated deposit size: 225,000 m<sup>3</sup>  
Annual extractable volume: 6,000 m<sup>3</sup>



### TORRE SANTA MARIA

The Sasso Basci quarry, in the municipality of Torre Santa Maria (SO), is the one where Verde Giada Serpentine is extracted. Opened in the 'fifties, it has been managed by Serpentino e Graniti since the 'nineties.

Estimated deposit size: 445,000 m<sup>3</sup>  
Annual extractable volume: 6,000 m<sup>3</sup>

natural split serpentine



### CHIESA IN VALMALENCO

Opened in the 'sixties, the natural split serpentine quarry is situated in Sasso Corvi, municipality of Chiesa in Valmalenco (SO).

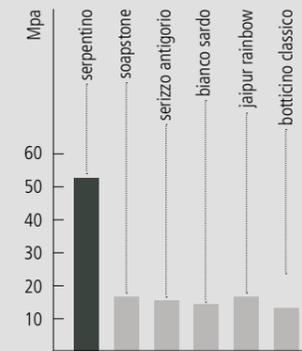
Estimated deposit size: 153,000 m<sup>3</sup>  
Annual extractable volume: 6,000 m<sup>3</sup>

## TECHNICAL DATA

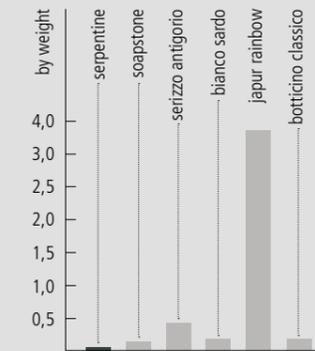
### natural split serpentine

comparative graphics

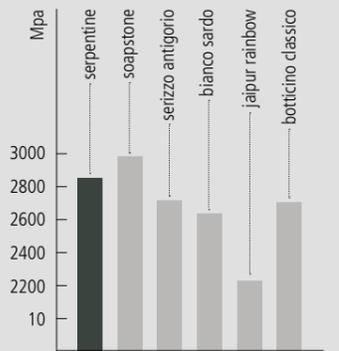
#### Flexural strength



#### Water absorption under atmospheric pressure

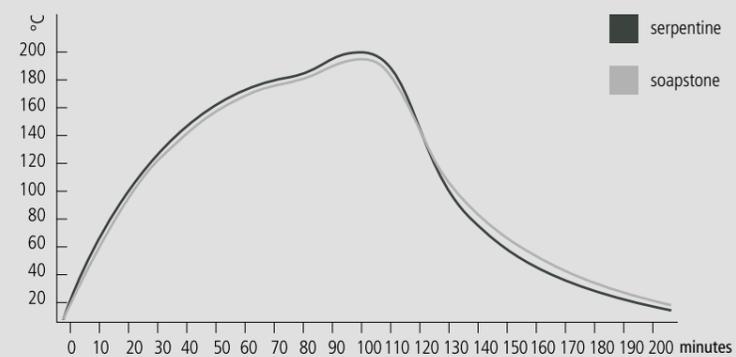


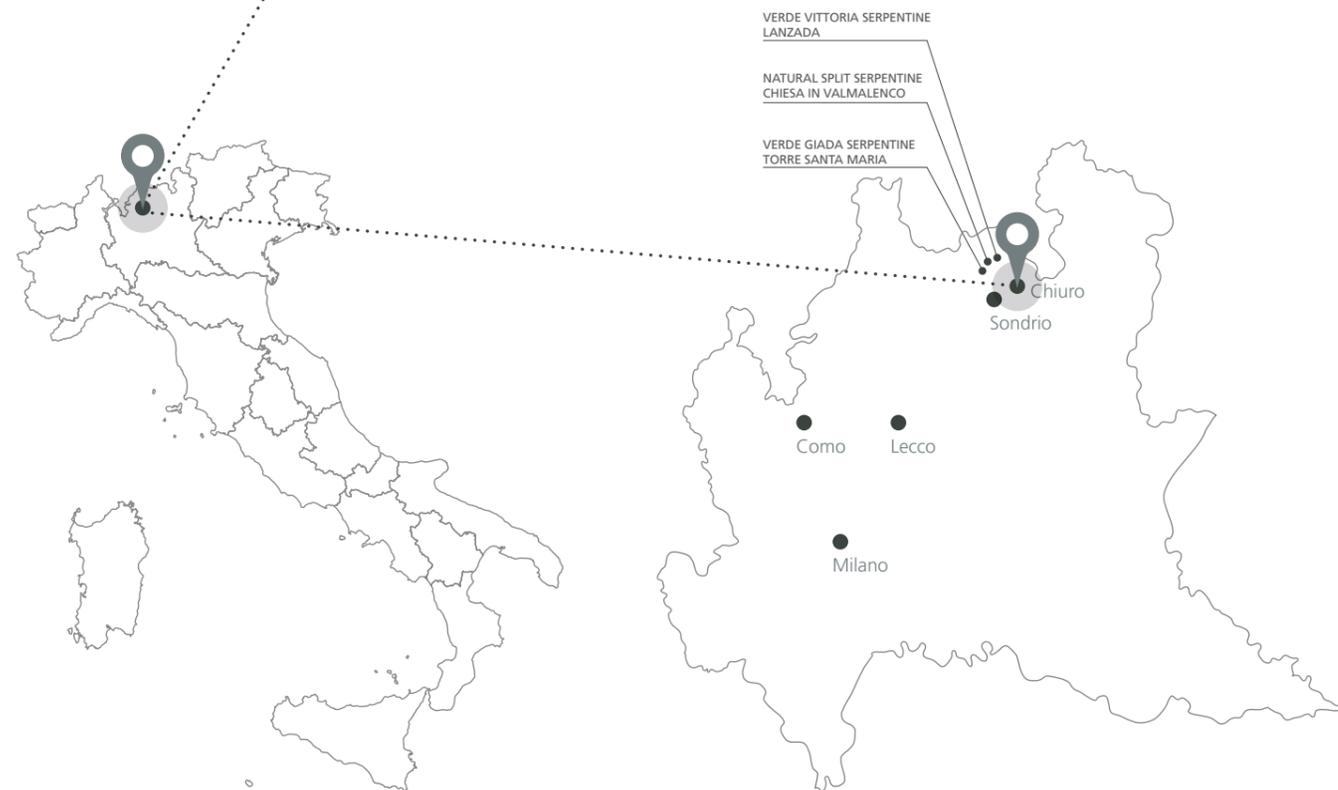
#### Apparent Density



Extraction zone: Italy  
Weight per unit of volume: 2627-2913 Kg/m<sup>3</sup>  
Water absorption: 0.06%-0.08%  
Bending resistance: 96.7 MPa  
Bending resistance after freeze-thaw cycles: 93.4 MPa

time - temperature curves





**OFFICES AND ESTABLISHMENT**

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