

BRETON **COMPOUND STONE** TECHNOLOGY AND PLANTS



NATURAL STONE SURFACES BY BRETON TECHNOLOGY

breton



WHEN I WAS A BOY SOMEONE
ONCE ASKED ME WHAT MY
FAVOURITE COLOUR WAS.
FOR YEARS IT BECAME A FAMILY
JOKE BECAUSE I HAD REPLIED,
HESITATING, "MY FAVOURITE
COLOUR IS MULTICOLOUR".

WALTER GROPIUS

CONTEMPORARY ARCHITECTURE AND BRETON COMPOUND STONE

Throughout the centuries natural stone has been a predominate feature in a broad range of architectural works, and by tradition it will rightly hold a position of prestige also in future.

However, over the years many limitations to the modern use of natural stone have become evident: the extensive exploitation of stone quarries has caused a shortage and at times even the total exhaustion of this resource in certain areas which is in direct conflict with environmental legislation; as natural stone by nature is often imperfect, it is very difficult to find large quantities that are aesthetically the same and perfectly uniform in their appearance; natural stone is not always the ideal solution to express new and innovative aesthetic and functional ideas of contemporary architects. Therefore, it has become a necessity to offer, in parallel to the evolution in tastes and the pace of life we live in today's society, new solutions and new technical and aesthetic proposals in masonry materials for the building and architectural industries.

The request today is for "stone" materials which are both innovative and contemporary in their appearance and in their technical features, and that can be designed for single and individual projects based on the tastes and requirements of the end user, and that are acid resistant, anti-scratch, anti-slip, in other words, these "stone" materials must have all those features which ensure safety, respect nature, and can be adapted to modern construction and design techniques, aesthetically pleasing in appearance and durable.





BRETON SPECIALIST IN PLANTS FOR MANUFACTURING AND PROCESSING COMPOUND STONE

Breton is world leader in the stone market industry for its plants and technology for manufacturing and processing compound stone, with an absolutely exclusive know-how, fruit of ongoing research and innovation which started back in 1963, the year the company was first founded.

There are many registered patents which cover solutions, ideas, technologies and machines offered by Breton.

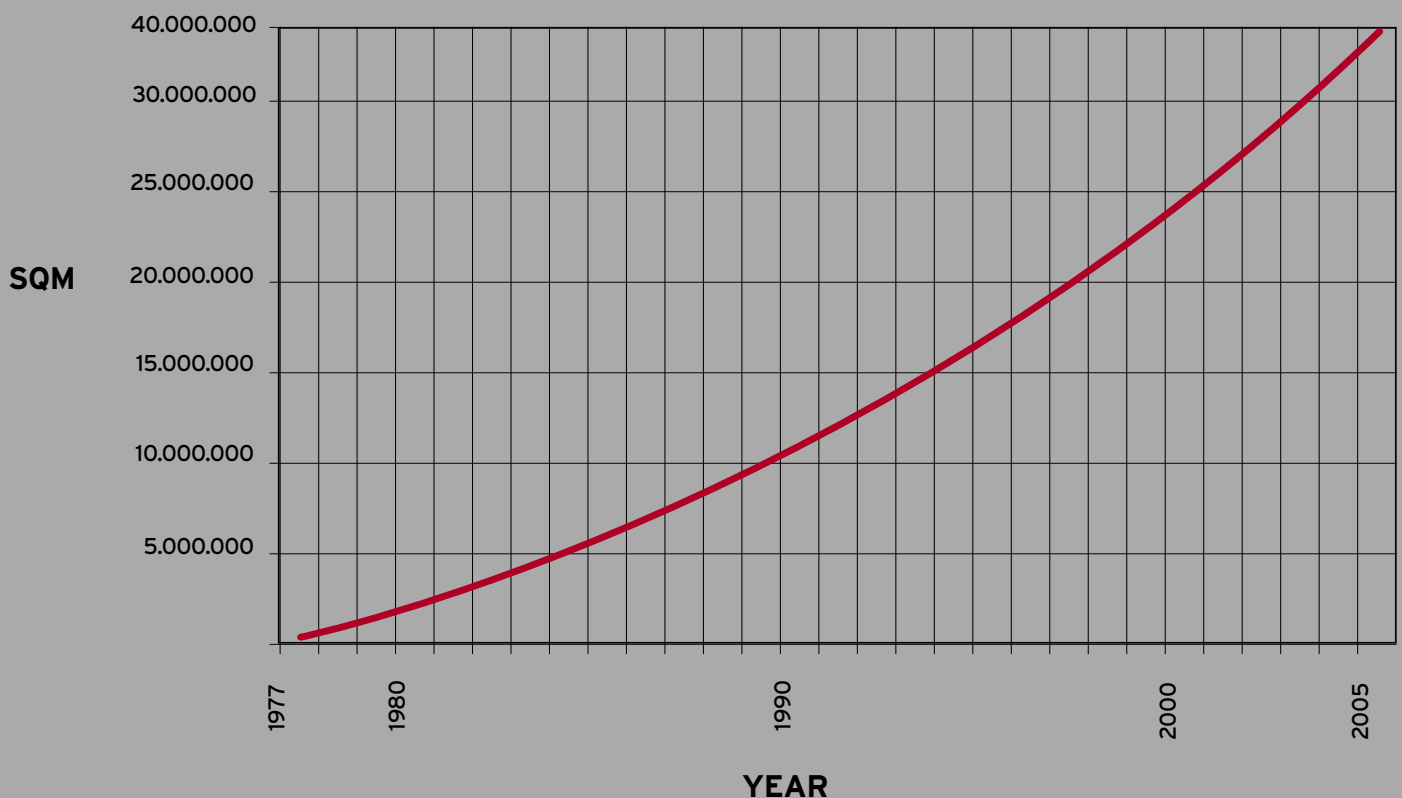
Breton has an important and well-equipped Research Centre and a team of highly qualified professionals in chemistry, physics and mechanics who thanks to the aid of sophisticated research tools and an engineering process laboratory equipped with machines and plants for compound stone, develop new products, new production processes and new processing technologies.

THE WORLDWIDE SUCCESS OF BRETON COMPOUND STONE

Breton plants for manufacturing compound stone are installed and successfully working in over 50 countries worldwide, with an annual production rate estimated at around 40 million square metres.

The commercial success of Breton plants is demonstrated by the substantial and rapid increase in the consumption of compound stone on the world market, from the west coast of the USA across the globe to the Asian coasts of the pacific basin. Considering that the current consumption of compound stone worldwide can be described as outstanding, it still only accounts for a small percentage, around 0.5%, of cladding materials utilised around the world, however it is more than evident the enormous growth potential compound stone will have in the near future.

World trend in the production of Breton compound stone



A WORLD OF TRADEMARKS AND TECHNOLOGY UNIQUE TO BRETON

BRETON COMPOUND STONE: BEAUTY, ORIGINALITY, FLEXIBILITY AND EXCEPTIONAL TECHNICAL CHARACTERISTICS LASTING TIME

Breton compound stone is used across a broad range of furnishing applications such as kitchen worktops, flooring, raised flooring, internal and external cladding, vanity tops, bathroom furnishings etc. In fact compound stone is a flexible and ideal solution for small or large public or private projects for homes, large commercial areas and furnishings.

In fact this product perfectly satisfies contemporary architectural requirements, surpassing the technical and aesthetic features of natural stone and many other "non stone" materials and allowing the masonry industries to manufacture products with a high concentration of natural stone aggregates, up to a 96%, and which can be perfectly reproduced in time as colours, patterns and technical features are designed and developed to meet requirements.

When preparing this type of stone product various types of natural stone aggregates are used (granite, quartz, granite, silica sand, marble etc.) and it is also possible to add other stone and non stone materials which are both original and extravagant (mother of pearl, lapis lazuli, shells, coloured glass, mirrors etc.) giving the finished product its beauty and uniqueness. The stone mixture is bonded with a structural organic resin or, depending on the type of plant, with a "hydraulic" inorganic bonding agent.

The high stone aggregate content not only gives this product its natural beauty, but makes it extremely versatile, whether a natural effect is chosen or a pattern designed and developed meeting the specific technical and aesthetic requirements of the architect or interior designer (anti-scratch, resistant to bacteria development or antibacterial, self-cleaning, anti-slip, acid resistant, stain resistant, UV ray resistant, antistatic for raised flooring etc.).

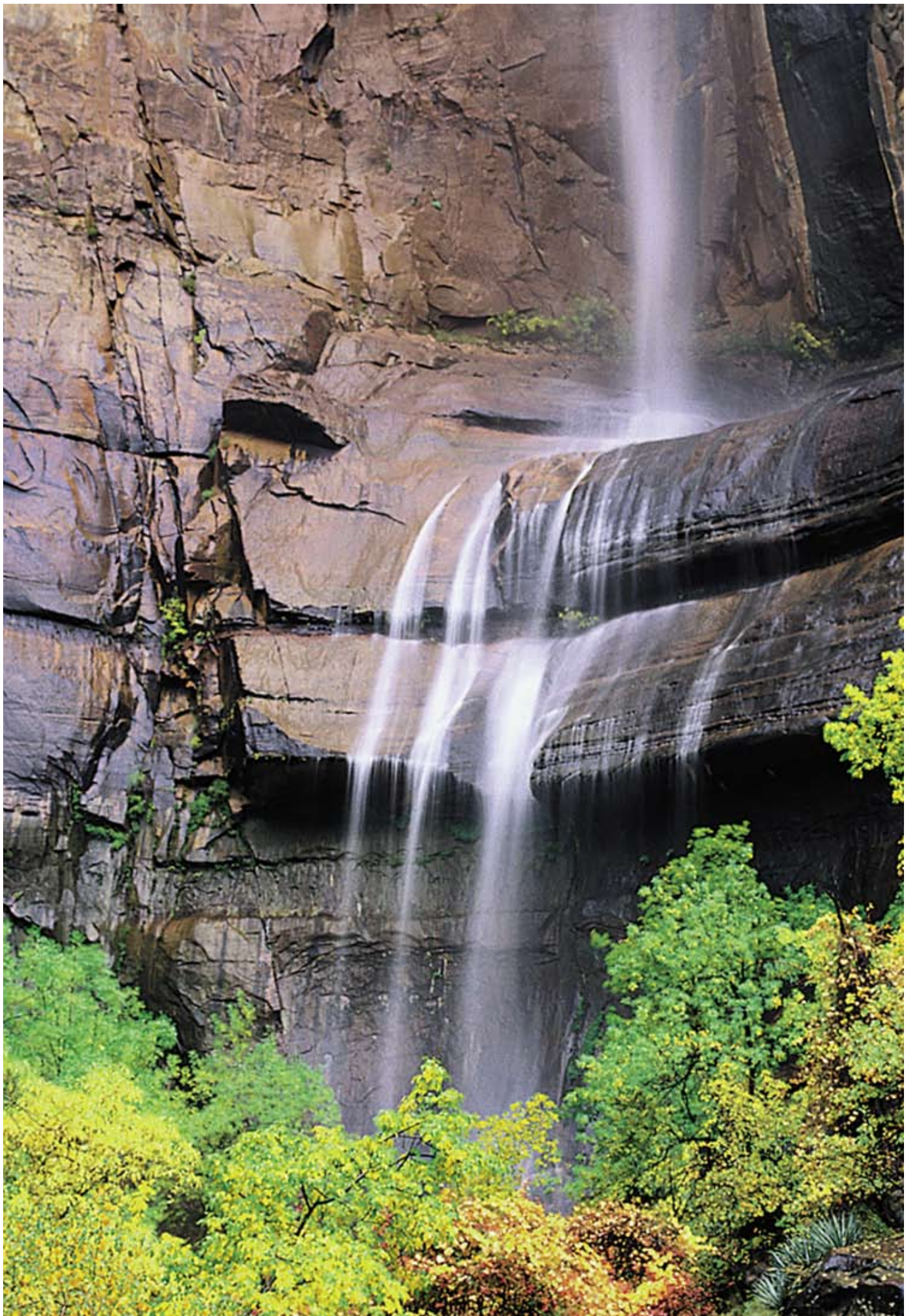






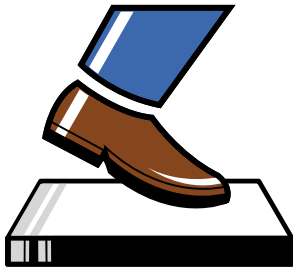
BRETON COMPOUND STONE ENVIRONMENTALLY FRIENDLY

Breton compound stone can be described as environmentally friendly as 96% of its content comes from crushed waste stone left over in quarries (up to 60% of waste stone is produced when extracting stone blocks) or from natural stone beds. Therefore, to manufacture Breton compound stone it is not necessary to open new quarries inevitably defacing the environment. Breton compound stone contains bonding agents which are transformed into inert materials during the manufacturing process therefore the final product does not produce any form of allergen making this type of product the ideal stone solution for any location.



IT IS POSSIBLE TO “DESIGN AND GIVE” SPECIFIC TECHNICAL FEATURES TO BRETON COMPOUND STONE

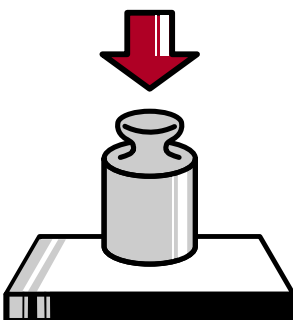
By defining the quality and mix of the stone aggregates, type of bonding agents and additives, and type of surface finishes, it is possible to enhance specific technical features obtaining compound stone which is:



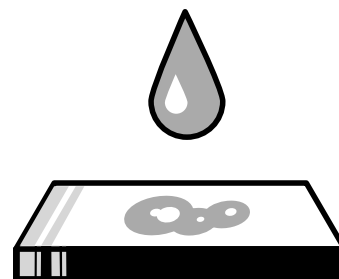
Wear resistant: with a high resistance to wear, classifying it as “anti-scratch”



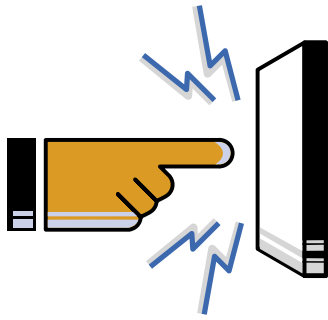
Chemical Resistant: with a high resistance to corrosive substances which are commonly used in everyday and domestic surroundings, classifying this product as “resistant to acid attacks”



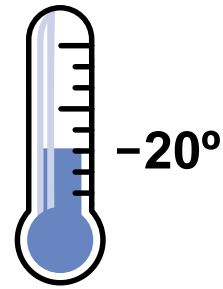
Resistant to Mechanical Stresses: substantially surpassing impact resistance and flexural strength parameters of natural stone



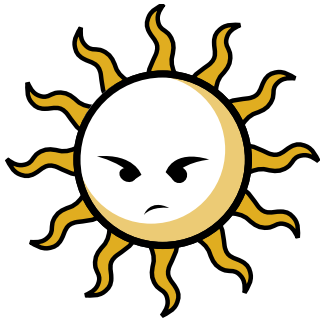
Stain Resistant: practically non-porous, classifying it as “resistant to stains”



Antistatic: can discharge electrostatic charges that are normally created in everyday surroundings



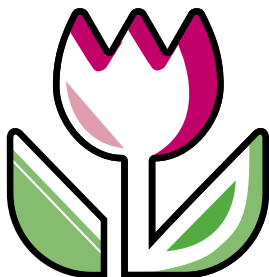
Ice Resistant: resistant to climatic changes such as freezing / thawing cycles so it can be used outside



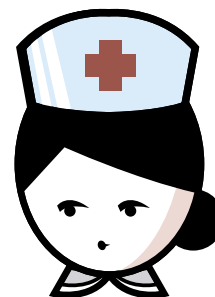
UV ray resistant: ideal for outside use



Anti-slip: making it the perfect product for surfaces that require anti-slip properties



Antismog: as it absorbs a part of the pollutants in the atmosphere and transforms them into innocuous substances, ideal for outside use



Antibacterial: makes surfaces inhospitable to bacteria and mould or even destroys the most common bacteria and moulds found in everyday and domestic surroundings

THE RANGE OF BRETON PLANTS FOR MANUFACTURING AND PROCESSING COMPOUND STONE

BRETONSTONE®

SLABS

BLOCKS

BRETONTERASTONE®

SLABS AND TILES

BLOCKS

BRETONCEMSTONE®

SLABS

SLABS

The Bretonstone® Slabs plants produce large-sized slabs which are made by combining and compacting the materials using a “vibrocompression vacuum process”.

The stone mix consists of stone aggregates, fine mineral particles and organic based bonding agents.

Slab sizes range from 125 x 309 cm up to 156 x 309 cm with a finished thickness of 10 mm up to 30 mm. These slabs can be sold as they are or can be transformed into finished products to the size required.

The stone materials constitute up to 94% of the weight of the finished product and are in general either siliceous (granite, quartz, quartzite, porphyry, sand etc.) or calcareous (marble, limestone, dolomite etc.) with sizes ranging up to 6-8mm.

The organic resin normally used as bonding agent is an unsaturated polyester resin compounded with additives to enhance adhesiveness.

Slab production rate, depending on the plant model and layout, can vary for 1,000 square metres up to 3,300 square metres per working day.





BRETONSTONE®

BLOCKS

The Bretonstone® Blocks plants produce large-sized blocks which are made by combining and compacting the materials using a “vibrocompression vacuum process”. The stone mix consists of stone aggregates, fine mineral particles and organic based bonding agents.

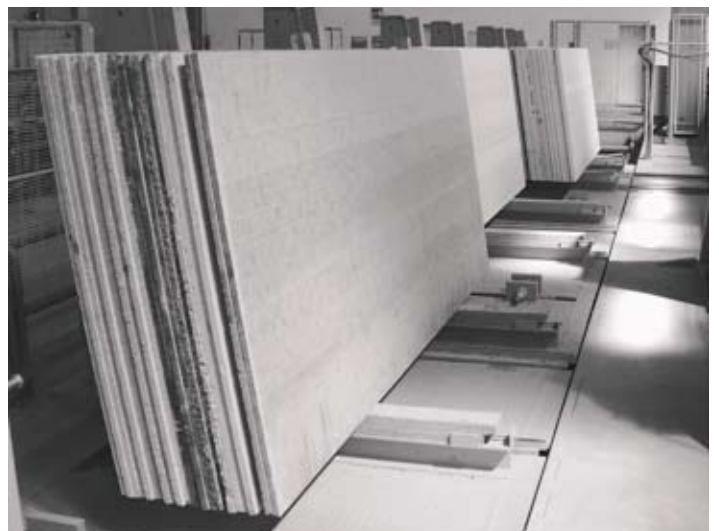
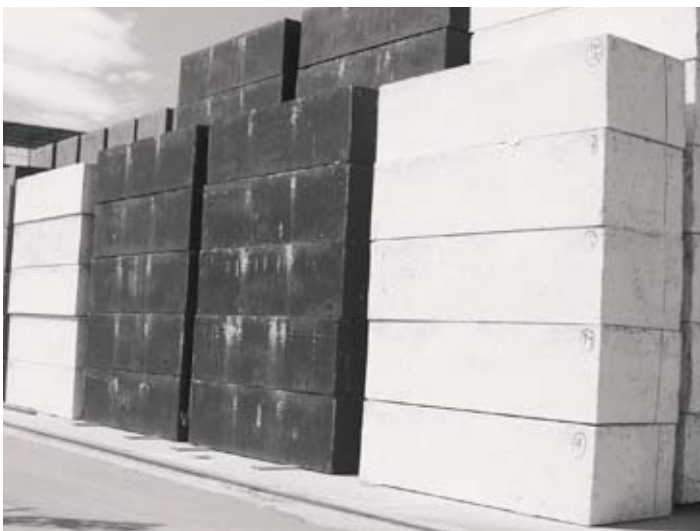
Blocks measure 308x125x88 cm.

These blocks are then sawn into slabs measuring 308x125 cm, normally, with a finished thickness ranging from 9 mm to 30 mm or over if required.

These blocks and slabs can be sold as they are or the slabs can be transformed into finished products to the size required.

The stone materials constitute up to 96% of the weight of the finished product and are calcareous (marble, limestone, dolomite etc.) with sizes ranging even up to 60-90 mm. The organic resin used as bonding agent is an unsaturated polyester resin compounded with additives to enhance adhesiveness.

The production rate, depending on the plant model and layout, varies from 1,500 square metres up to 8,000 square meters per working day.







BRETONTERASTONE®

SLABS AND TILES

The Bretonterastone® Slabs and Tiles plants produce tiles and thin single layer slabs which are made by combining and compacting the materials using a "vibration vacuum process". The stone mix consists of stone aggregates, fine mineral particles and inorganic based bonding agents.

Slab sizes measure up to a maximum 68x153 cm, with a finished thickness ranging from 15 mm to 35 mm.

Tile sizes available are 30x30 cm, 40x40 cm, 40 x 60 cm or 60 x 60 cm with a finished thickness, depending on size, from 9.5 up to 30 mm.

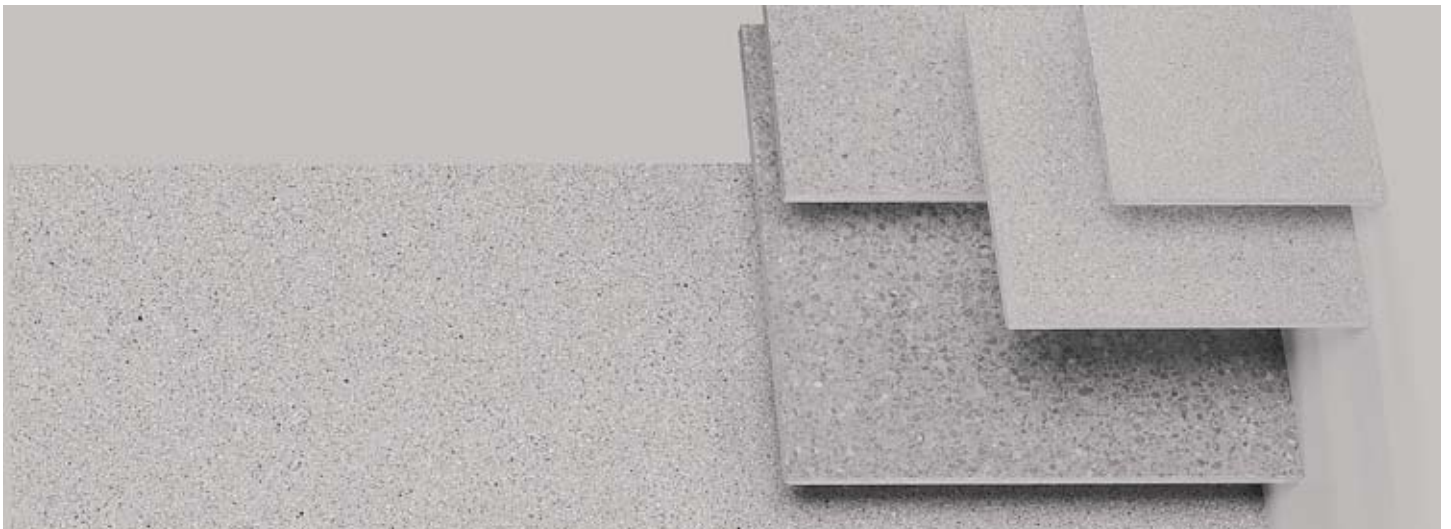
These slabs can be sold as they are or can be transformed into finished products.

The stone materials constitute up to 76% of the weight of the finished product and can be either siliceous (granite, quartz, quartzite, porphyry, sand etc.) or calcareous (marble, limestone, dolomite etc.) with sizes ranging up to 10-12 mm.

The bonding agent used is a Portland cement mix ("hydraulic" inorganic agent), generally Class I mixed with water to a water / cement ratio usually not higher than 0.30 and compounded with normal fluidifying agents used in the concrete industry.

With Bretonterastone® plants it is now possible to produce "P.M.C." ("Polymer Modified Concrete") products by simply adding to the concrete mix common polymers such as resins or polymeric latex (for example acrylic latex) enhancing the technical properties and features of the finished product.

The production rate, depending on the plant model and layout, varies from 600 square metres up to 2,700 square meters per working day.





BRETONTERASTONE®

BLOCKS

The Bretonterastone® Blocks plants produce large-sized blocks which are made by combining and compacting the materials using a “vibration vacuum process”.

The stone mix consists of stone aggregates, fine mineral particles and inorganic or organic based bonding agents. Blocks measure 308 x 125 x 75 cm and are then sawn into slabs measuring 308x125 cm with a finished thickness ranging from 9 mm (15 mm if an inorganic resin is used for bonding) to 30 mm or over.

These blocks and slabs can be sold as they are or the slabs can be transformed into finished products to the size required.

The stone materials constitute up to 94% (78% if an inorganic resin is used) of the weight of the finished product and are calcareous (marble, limestone, dolomite etc.) and can have sizes up to a maximum of 60-90 mm.

The type of bonding agent can be:

- Portland cement mix (“hydraulic” inorganic agent), generally Class I mixed with water to a water / cement ratio usually not higher than 0.30 and compounded with normal fluidifying agents used in the concrete industry.
- unsaturated polyester resin (organic bonding agent) compounded with additives to enhance adhesiveness.

With Bretonterastone® plants, and when using Portland cement as bonding agent, it is now possible to produce “P.M.C.” (“Polymer Modified Concrete”) products by simply adding to the concrete mix common polymers such as resins or polymeric latex (for example acrylic latex) enhancing the technical properties and features of the finished product. The production rate, depending on the plant model and layout, varies from 1,500 square metres up to 3,000 square meters per working day.



SLABS

The Bretoncemstone® Slabs plants produce large-sized slabs which are made by combining and compacting the materials using a “vibrocompression vacuum process”. The stone mix consists of stone aggregates, fine mineral particles and inorganic bonding agents. Slab sizes measure up to 140x309 cm, with a finished thickness ranging from 9.5 mm to 30 mm.

These slabs can be sold as they are or can be transformed into finished products to the size required.

The stone materials constitute up to 78% of the weight of the finished product and are in general either siliceous (granite, quartz, quartzite, porphyry, sand etc.) or calcareous (marble, limestone, dolomite etc.) with sizes ranging up to 6-8mm.

The bonding agent used is a Portland cement mix (“hydraulic” inorganic agent), generally Class I mixed with water to a water / cement ratio usually not higher than 0.25 and compounded with normal fluidifying agents used in the concrete industry.

When manufacturing slabs using a Bretoncemstone® plant common polymers such as resin or polymeric latex (for example acrylic latex) are combined into the stone mixture enhancing the technical properties and features of the finished product.

The production rate, depending on the plant model, varies from 1,000 square metres up to 2,400 square metres per working day.









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