GammaStone, leader in the manufacture of large-format stone, porcelain, glass, GFRC Plus, mosaic, and brick using the most sophisticated lightweight panelized system in the world. The patented GammaStone Air system is the result of our commitment to modern and dynamic structures and our profound knowledge of the natural stone industry.
**EVOLUTION IS OUR KEYWORD**

quality, versatility, reliability and guarantee

The group is synonymous with creativity and excellence, which are qualities that stem from our fifty years of experience in the stone industry and tireless dedication to realize products of the highest performance and value. Clients from all over the world have validated our products in terms of quality, versatility, and reliability. The company, with its long history of engineering and technological solutions, highlights the materials and their beauty in the realization of innovative projects. Our panelized solutions can be made with various materials including natural stone, porcelain, glass, GFRC Plus, mosaic, and brick. Each solution is characterized by compactness, excellent technical characteristics, extraordinary resistance, and incomparable aesthetics that complement any architectural style.

An infinite number of solutions for outdoor and indoor, in classic and modern style, are able to meet any taste and need. Our large-format panels are manufactured using the most sophisticated production technology in the world. The company is among the first ISO 9001 certified by IMQ (Istituto Italiano del Marchio di Qualità), Italy’s most important certification body and a European leader in assessments and laboratory testing for safety, quality, and sustainability. GammaStone products are manufactured in compliance with the strict requirements of EOTA (European Organization for Technical Approval), the European institute that certifies product performance and sustainability.

GammaStone products have been selected for numerous awards based on their originality, innovation, and functionality. Research and development are the keys to success in the production of large-format lightweight panels. GammaStone is well-known for developing creative, industry-leading solutions in the cladding field. New product ideas, processes, and technologies are developed in the GammaStone laboratories, which has enabled us to emerge as leaders in the market.
The company is certified ISO 9001 by IMQ (Istituto Italiano del Marchio di Qualità), Italy’s most important certification body and a European leader in assessments and laboratory testing for safety, quality, and sustainability. We have always been the first to believe in the uniqueness of our products, a synthesis of superior aesthetic, technical and design qualities, designed to endure over time. The reliability and aesthetic perfection of our surfaces and facades are now an undisputed fact, supported by important international certifications for the full range of products.

**THE WORLD’S SAFEST LIGHTENED PANELS**

They have passed over 200 tests in the best European and American laboratories.

---

**PANEL GAMMASTONE AIR**

All GammaStone AIR panels (glass, stone Natural and porcelain tiles) underwent the rigorous testing required by international regulations. The results in terms of performance exceed expectations. The company offers a range of products that are not only aesthetically pleasing but also technically advanced. The reliability and aesthetic perfection of our surfaces and facades are now an undisputed fact, supported by important international certifications for the full range of products.

**GAMMASTONE AIR FAÇADE SYSTEM**

To ensure maximum safety, the façades GammaStone AIR have been subjected to rigorous tests required by the ETAG standard guidelines, conducted at the Istituto Giordano. The sample under test is a portion of the ventilated façade with concealed hangers and consists of the supporting structure in extruded aluminum profiles and brackets, external cladding of 3000x1000 mm sandwich panels with 15mm thickness finished with gres porcelain tiles.

---

**WIND LOAD RESISTANCE**

The test was performed in accordance with the EOTA standard guidelines: ETAG 034-1:2012 April 2012 “Guideline for European technical approval of kits for external wall claddings - Part II: Ventilated cladding kits comprising cladding components and associated fixings.” The sample was mounted on the test bench and was subjected to the test of resistance to wind load in depression, with measurement of the deformations under load and detection of residual deformations according to paragraph 5.4.1 “Wind load resistance” ETAG 034-1:2012. The test results proved to be exceptional in depression 4610 Pa (470 kg/sqm). TEST REPORT No. 309028

**IMPACT STRENGTH**

The test was performed in accordance with the standard guidelines: ETAG 034-1:2012 April 2012 “Guideline for European technical approval of kits for external wall claddings - Part II: Ventilated cladding kits comprising cladding components and associated fixings.”

- **UNI EN 14019.2004 01/11/2004 of Curtain walling - Performance requirements:**
  - The test proved to be exceptional in depression 4610 Pa (470 kg/sqm). TEST REPORT No. 309028

---

**GAMMASTONE AIR TECHNOLOGY**

---
GammaStone AIR patented panels are produced by state-of-the-art manufacturing equipment that enables the production of lightweight panels in natural stone, porcelain, glass, GFRC Plus, mosaic, and brick in large-format sizes up to 4200x1500mm (approx. 13x5 feet). GammaStone AIR panels are extremely lightweight and have very high resistance to impact, flexion, and compression from the use of innovative materials in the aerospace industry. GammaStone AIR panels represent a state-of-the-art solution that guarantees high-performance standards and unparalleled aesthetic beauty. The GammaStone AIR system enables the designer to specify large-format panels with confidence. The panels are anchored mechanically allowing simple attachment to the substrate. The resistance to wind load is greatly superior to any technical requirement imposed by the current regulations even in climatic zones subject to weather extremes such as monsoons and hurricanes. The GammaStone AIR product is protected by patent (Patent No. RM2013A000068).
PANELS OF SURPRISING LIGHTNESS

The structural core foam, used for aerospace applications, donates the GammaStone AIR ventilated facade system lightness which is impossible to achieve with other available materials. The GammaStone AIR panels, which have excellent technical characteristics, enable extraordinary finishings and are increasingly being incorporated in grand projects by internationally renowned architects and designers who always experiment new aesthetic and architectural solutions. GammaStone AIR system is suitable for any type of structure and purpose of interior and exterior use.

VERY HIGH RESISTANCE TO IMPACTS, BLENDING AND COMPRESSION thanks to use of excellent and innovative materials

STATE-OF-THE-ART SOLUTION THAT GUARANTEES HIGH PERFORMANCE STANDARDS offers an unparalleled aesthetic beauty

THE SLABS ARE EXTREMELY LIGHT thanks to the stratification pressed to 10,000 kg/sqm with the structural core that makes the panel even more compact and elastic

INSTALLING IS EASIER THAN OTHER VENTILATED FACADE SOLUTIONS Thanks also to the extremely reduced weight of the slabs

Research and development are the keys to success in the field of production of large-sized light panels. GammaStone is well-known as finder of the best winning solutions for the operators of the stone field. New product ideas, processes, and technologies are developed in the GammaStone laboratories, which enable them to emerge as leaders in the market.
LARGE SIZE PANELS
( up to 4200x1600 mm)

Large size, surprisingly lightweight are entirely assembled in our laboratories and are installed with extreme simplicity using the most common hanging systems. GammaStone AIR panel represents an effective and extremely valid solution referring to architectural aspects for the cladding of structural elements such as steel girders and pillars or reinforced concrete, as well for the realization of volumetric elements on the facades of the buildings.
The GammaStone AIR system enables the designer to specify large format panels with confidence. The panels are anchored mechanically either with concealed or visible fixings allowing simple attachment to the substrate. The main feature of GammaStone AIR system is the high level of workability and usage flexibility; the panels can be cut with different angles, glued with structural epoxy adhesives and reinforced by metal angle forming a single monolithic architectural element able to meet the most varied aesthetic and functional requirements of the buildings. These unique requirements of the panels allow to manufacture fake beams or columns with complex and irregular shapes or revitalize with a new aesthetic existing carriers. These items are manufactured entirely in our premises and they are ready for installation on site.
REFINEMENT, QUALITY AND SOLUTIONS
finishes of extraordinary beauty

NATURAL AIR
Natural stones give the buildings a beauty that defies the centuries, emitting magnificence and sophistication. The wide range of marble, granite, travertine, other natural stones, and the various types of processing enable the fulfilment of every architectural requirement. 4 are the Natural Air types: Granite, Marble, Travertine and Limestone and many are the finishes to choose from. The choice of material depends on the characteristics of the project. The question is: Which natural stone is best suited to my needs?" and from them choose the variety of material also depending on our availability.

GRES AIR
GammaStone AIR large size porcelain gres panel is a high technology product that fulfils all architectural designs as well as represents a fundamental element of furnishing. GammaStone uses only the highest quality porcelain gres made in Italy. GammaStone high quality porcelain gres is a compact ceramic paste, which is hard and coloured, obtained from the process of sintering at temperatures around 1200-1400°C, until reaching a non-porous and waterproof vitrification. Porcelain gres guarantees optimal resistance to scratches, wear and tear, UV rays, stains and moulds.

GLASS AIR
The glass, with its timeless beauty and extreme flexibility of use, gives majesty and elegance to the buildings and places. The wide selection of colors, the various compositions and processes allow to meet all architecture requirements and endless customization. The most important glass manufacturers in the world, our partners, enable us to offer multiple solutions: varnished, reflecting, screen-printed glass and more.

GFRC PLUS AIR
The GammaStone GFRC Plus AIR solution is composed of ultra-thin high-performance concrete reinforced with amorphous metal fibres. The panel offers self-cleaning and photocatalytic characteristics thanks to the special ingredient TX Active. It allows designers to customise both the colour and surface finish.

MOSAIC AIR
The GammaStone Mosaic AIR solution allows mechanical installation of ceramic or glass mosaic with the advantage of fast installation and beautiful aesthetics. The panel is supplied with epoxy resins within the joints and ready for installation. The joint between panels is designed to provide a unique-mosaic effect on the entire façade.

BRICK AIR
The GammaStone Brick AIR solution allows dry installation of Klinker or porcelain bricks with advantages of a fast installation and beautiful aesthetics. The panel is supplied and pointed with mortar ready for installation. The joints between panels are designed to guarantee a unique-effect on the entire façade.
INNOVATIVE AND REVOLUTIONARY BUILDING SYSTEMS

exteriors and interiors application

The GammaStone AIR panels, which have excellent technical characteristics, enable extraordinary finishings and are increasingly being incorporated in grand projects by internationally renowned architects and designers who always experiment new aesthetic and architectural solutions.

GAMMASTONE AIR SYSTEM IS SUITABLE FOR ANY TYPE OF STRUCTURE AND PURPOSE OF INTERIOR AND EXTERIOR USE

EXTERIORS APPLICATIONS
• VENTILATED FACADES
• MICROVENTILATED FACADE
• CURTAIN WALL
• CEILINGS

INTERIORS APPLICATIONS
• CLADDING
• DIVIDING WALLS
• CEILINGS
GammaStone, leader in manufacturing its own large-sized slabs and most sophisticated system in the world, is located in Rignano Flaminio (Rome - Italy).

It immediately became one of the most productive reality in the field, developed an innovative technological, playing still today a central role in the charming projects. Since the beginning the strong production ability is inclined to meet the needs of the sector which is always changing, always proposing efficient and modern solutions, able to anticipate the trend of the market. For this reason many commercial and touristic buildings and structures have been choosing GammaStone: the business unit which strongly grew up in the last years, obtaining credibility and large segments of the market. GammaStone offers ideal solutions in terms of quality, design, versatility, reliability and guaranté in Italy and in the world where offering something custom made is necessary.
NATURAL AIR

GammaStone NATURAL AIR
Vicenza Stone

THE MARKET
LUXURY OUTLET
luxury shopping center

GammaStone Natural AIR
Vicenza Stone

The Market -
Luxury Shopping Outlet
San Marino
43°55′55.24″N
12°26′54.42″E
The Market – a luxury shopping center in the Republic of San Marino – will feature the Natural AIR system with Vicenza stone to achieve the architect's unique vision, incorporating perforations, reliefs and other detailed elements. This large development consists of multiple buildings that wind along the site's natural topography.
On an area of 25,000 square meters, a modern architecture develops that is respectful of the context of San Marino: shapes, materials and colors reflect those characteristic of the historic center of the capital. Respectful also of the environment: planning and construction are planned in accordance with the very strict international BREEAM certification. In addition to the variation of materials, the external facade towards the valley is volumetrically articulated through slight deviations between the different parts.

This device underlines the massive nature of the intervention and allows natural and artificial light to make the facade vibrate along its entire length. Also in the design of the settlement system, its shape and the shape of the individual buildings, simulation models have been used that have allowed us to optimize the opportunities offered by natural agents such as wind, sun and shade as well as respecting all the other technical and hygienic aspects.
The Luxury Shopping Outlet THE MARKET will be realized on the northeastern border of the Republic of San Marino with the GammaStone Natural AIR façades in Vicenza stone differentiated through perforations, reliefs and more motifs that enrich the general vision of architecture. The project in question, in fact, consists in the cladding of façades of buildings that wind along the slight diagonal slope of the hill. The panels are anchored mechanically either with concealed or visible fixings allowing simple attachment to the substrate. The guarantee of resistance to wind load is greatly superior to any Technical requirement imposed by the current regulations even in climatic zones subjected to weathering extremes such as monsoons and hurricanes. GammaStone AIR is a product protected by patent.
NOTA 1: LE MISURE E LE QUOTE SONO DA RITENERSI INDICATIVE, PERTANTO DOVRANNO ESSERE VERIFICATE IN CANTIERE AL MOMENTO DELL’ESECUZIONE DELLE OPERE.

NOTA 2: IN CASO DI DISCREPANZA TRA ELABORATI, FARE RIFERIMENTO ALL’ELABORATO DI SCALA DI MAGGIORE DETTAGLIO.

NOTA 3: LE INFORMAZIONI RIPORTATE SULLA PRESENTE TAVOLA RELATIVE AGLI ELEMENTI STRUTTURALI ED IMPIANTISTICI SONO DI CARATTERE ARCHITETTONICO. PER L’ESATTA DEFINIZIONE DELLE COMPONENTI INGEGNERISTICHE SI FACCIA RIFERIMENTO ALLE TAVOLE DEI PROGETTI SPECIALISTICI.
Our production is also characterized by quality artisan finishing made possible by an experienced and professional team. An innovative solution, in which GammaStone demonstrated talent and passion. The strategy of GammaStone to pre-assemble all the elements in our factory, leaving the workers only the task of installing them on the substructure in the building site, has significantly reduced the installation time and guaranteed at the an impeccable final result, of considerable prestige.
RESIDENTIAL BUILDING IN MILAN
external façade cladding
GammaStone helps to make a reserved and silent area shine thanks to the external façade cladding of a new building for luxury residences located in the central Via Palermo - Milan, in the heart of the elegant Brera. The building stands on a lot of rather complicated geometry, where in the past there was only scrub and abandon. The redevelopment of the area has been made through a meticulous research of materials and colors, that interact perfectly with the language of historical Milan, showing particular care for the green, which becomes a significant element of the entire project. The building is also characterized by sunny apartments, thanks to the large windows and slightly off-axis corner balconies, with construction systems oriented to maximum sustainability. The ultralight large size slabs by GammaStone Natural AIR in Basalt and Peperino follow one another along the façade with extreme regularity, setting a perfect purposely studied game of joints and alternations.
GammaStone AIR slabs represent a state-of-the-art solution that guarantees high performance standards and offers an unparalleled aesthetic beauty. The GammaStone AIR system enables the designer to specify large format panels with confidence. The basement in black basalt stone, interrupted by profiles in burnished brass, accentuates the overhang of the overlying volume, while the wall on the street that tilts inwards is covered with bronzed micro-perforated sheet.
The neutral black and grey tones of the natural stones, Basalt and Peperino, allow a contemporary compositional building, in contrast with the surrounding context, to be in line with the landscape both from the tonal and material point of view. The fine stone finishes lead back to a desired enrichment of the building. Both stones are volcanic and their origin generates, not surprisingly, particular technical aspects, which guarantee its resistance over time. Besides, they have been recommended because they represent a cult in the street furniture.
The modular facades of the large-format façade in peperino natural stone, typical of the Lombard tradition, are interrupted by staggered floor-to-ceiling windows. The satisfactory result definitely looks worth the wait. It has brilliantly passed all the quality standards required in the design phase. The design concept has been entirely entrusted to the architect Carlo Donati who, together with the AIR technology, succeeded in interacting the requirements dictated by the artistic direction with those dictated by the client, thanks also to the tangible dedication and professionalism of GammaStone.
MATERA
RAILWAY STATION
restructuring and redevelopment
Redesigned by the Archistar Stefano Boeri, the building renovation project through aesthetic and functional redevelopment, as well as technological and railway adaptation of the existing railway station of Matera, city of the Sassi, intends to restore greater visibility to the Matera Central Station FAL, a real Important urban “landmark”, adapted to the primary urban and territorial function that the new service aspires to fulfill. Of Gammastone Natural Air the large wall of Pietra di Tufo panels and therefore local stone that rises from the underground to the ground floor that incorporates the building of the new station.

The project of Stefano Boeri Architetti for the new station of Matera Centrale which will connect the second municipality of Basilicata to the nearest airport of Bari and the rest of Italy with faster connections.
The New Station is designed to become a recognizable public space, a place that represents the first image that a visitor has when he arrives in the city.
SYMBIOSIS
new headquarters Fastweb
GammaStone takes part in one of the main development projects located in Milan, which dealt with the redevelopment of a historic industrial area, transforming it into a new executive centre, dedicated to smart working and co-working. Symbiosis is not just an engineering project, but it is a project that integrates sustainability with architecture, where offices, green areas and multifunctional spaces coexist to optimize and improve the quality of work and life in a new strategic vision of the city.
Exclusive and intelligent spaces created with attention to the finishes design and quality, which adopt high quality standards and guarantee reduced maintenance costs over time. The innovative GammaStone Gres Air solution has been used for the external cladding as ventilated façade of the new Fastweb headquarters. The light brushstrokes alternate with the large windows, showing a linear laying with a schematic and clean architectural concept.
The workspaces are lit through wide full-height glass windows, contaminated settings that create the ideal habitat for cooperation and development of new ideas. The new public spaces at ground level aim to become a reference point for the district’s community and a meeting place for outdoor activities, integrating work and leisure time. The large glass façades of the building establish a connection between the internal and external environment, and the choice of a neutral ceramic material for the external coating gives a touch of absolute modernity.

The white color, practical and undoubtedly refined, adapts naturally to the environment and refers to the concept of practicality responding as well to the current need of the digital reality of the company. GammaStone demonstrates to be up to expectations and is once again effectively projected into the future.

A refurbished and entirely sustainable area that redefines the city’s geography. Symbiosis is a flexible and highly technological Business District south of the Porta Romana neighbourhood of Milan that introduces a previously unimaginable model of the future. The iconic project, designed by Antonio Citterio and Patricia Viel, meets important sustainability, technology and flexibility criteria, and communicates these values through an ongoing dialogue between indoor and outdoor environments.
GammaStone GRES AIR
Base Bergen

Reale Mutua Assicurazioni, Turin
45°04’N 7°42’E

luxury office
Elegance and simplicity are the results of meticulous and creative work. The facade of Reale Mutua Assicurazioni building, realized with GAMMASTONE Gres AIR panels Kerlite Bergen Base shows the great craftsmanship of the workforce and the incredible result in terms of lightness achieved by GammaStone AIR technology.

The design of the new offices facades tries to establish a dialogue with the context of the surrounding buildings (dated XVIII – XIX century), looking for an integration of material, colors, proportions, alignments and yet to generate a gravity point in the urban environment, through a facade organization that is rigorous and sensitive, and relies on essential shapes – with a longer permanence in time and therefore capable of escape the mutability of fashion.

The building aims to be contemporary and at the same time intimately connected to the place... as if it had always been there, to communicate the solidity and permanence in time, those values that represents Reale Mutua both for the city of Turin which the national scene.

Geometric architectural elements, large size, surprisingly lightweight are entirely assembled in our laboratories and are installed with extreme simplicity using the most common hanging systems.
The GammaStone AIR system enables the designer to specify large format panels with confidence. The panels are anchored mechanically either with concealed or visible fixings allowing simple attachment to the substrate. The guarantee of resistance to wind load is greatly superior to any Technical requirement imposed by the current regulations even in climatic zones subjected to weathering extremes such as monsoons and hurricanes. GammaStone AIR is a product protected by patent.
GammaStone AIR slabs represent a state-of-the-art solution that guarantees high performance standards and offers an unparalleled aesthetic beauty.
This project consists in an external cladding characterized by large window areas with ornamental architectural elements. The alternation between the gres and porcelain gres and the variable proportion of the windows size give dynamism and modernity to the façade. These features harmoniously match with the traditional color of the ceramic, ensuring a functional and prestigious result.

5 MM THICK CERAMIC SLABS 3000x1000 MM
NEW D&G STORE
luxury building

GammaStone GRES AIR
Black Veined

The Dubai Mall
5°16′11″N 55°18′34″E
The Monolithic Elements assembled entirely in our laboratories and sent for be installed in all the world.

The new D&G store at The Dubai Mall is a sophisticated and complex design project, which has allowed GammaStone to show its best once again in terms of lightness and versatility. A perfect union between innovation and aesthetic value, supported by glossy veined finish of extreme brilliance. GammaStone created monolithic panels of large dimensions, over 4200x1600mm, assembling a huge amount of different pieces in macro elements, devoting particular attention to make imperceptible the joint, thanks to the continuity of the vein finish.

The result is a visual effect of absolute importance, which gives a tridimensional effect and dynamism to the entire façade in all its sides. GammaStone experiences a continuous industrial innovation, based on technical skills and specific technologies developed in the last years.
The GammaStone AIR system enables the designer to specify large format panels with confidence. The panels are anchored mechanically either with concealed or visible fixings allowing simple attachment to the substrate. The guarantee of resistance to wind load is greatly superior to any Technical requirement imposed by the current regulations even in climatic zones subjected to weathering extremes such as monsoons and hurricanes. GammaStone AIR is a product protected by patent.
Our production is also characterized by quality artisan finishing made possible by an experienced and professional team. An innovative solution, in which GammaStone demonstrated talent and passion. The strategy of GammaStone to pre-assemble all the elements in our factory, leaving the workers only the task of installing them on the substructure in the building site, has significantly reduced the installation time and guaranteed an impeccable final result of considerable prestige.
ESSEX CROSSING 3 - NYC
shopping Center
Essex Crossing 3 symbolizes the first model of GammaStone Brick AIR in a curtain wall. Thanks to the collaboration and proficiency of all the cooperating companies, the "Facciavista Longformat" brick paneling is installed in continuous cells. One of the main characteristics of this highly technological product is its visual adaptability. GammaStone’s Brick AIR is produced in an integrated modern line of production followed by various tests.
GammaStone AIR slabs represent a state-of-the-art solution that guarantees high performance standards and offers an unparalleled aesthetic beauty. The GammaStone Brick AIR solution allows dry installation of Klinker or porcelain bricks with advantages of a fast installation and beautiful aesthetics. The panel is supplied and pointed with mortar ready for installation. The joints between panels are designed to guarantee a unique effect on the entire facade.
The visual and functional aspects lend themselves to be adapted to the technological and architectural necessities of the building. Therefore, it is a highly oriented product in personalization; in fact, the insertion of strips of different sizes within a single panel makes Essex Crossing 3 a highly oriented in personalization.

An undoubtable feature of this type of façade is that, GammaStone Brick AIR panels are delivered to Curtain Wall manufacturers, which provide the assembly in the cell so a completely finished product arrives in the site.

These high quality control production standards allow a rapid assembly and leave a simple installation for the site.
The speed of installation, as well as the flexibility of the use of the panels in this project shouldn’t be underestimated, since this building is located right in the heart of Manhattan – NYC. GammaStone is pleased and satisfied with having passed this challenge successfully.
GLASS AIR

Coop Arona Center
renovation of an old building
The Coop, in Via Arona, Milan represents a flawless renovation of an old building which perfectly fits into an urban context which is close to the center of the city. This restyling demonstrates the high-flexibility of the use of GammaStone Glass Air plates. The timeless beauty of the glass provides majesty and elegance to the building.

GammaStone Glass Air panelings are segmented and alternated in a motion of ups and downs, giving a continuous movement to the entire facade. The result is a visual effect of absolute relevance, which gives dynamism from every angle and perspective; referring to the wave with a modern line project idea, which goes on from Via Arona to Corso Sempione.

GammaStone has proved to meet the expectations always, by applying itself once again with talent and passion.
The sinusoidal shape and the curved corner is the main character of the project. The idea of running it using a single color, which enhances the material continuity of the layer should be well-thought-out. The optical white with a mirrored finish follows a unique architectural line but at the same time brings out the well-known and irrefutable Coop brand with bright tones.

This is a result of a continuous industrial work, based on specific skills and technologies which has been developed over the years and characterized by an artisan finishing by an experienced and professional team. A cutting-edge solution, which GammaStone has shown talent and passion in it.
INDIA PRIVATE HOUSE
luxury facade

GammaStone NATURAL AIR
Roman Travertine

Private Building
New Delhi
28°36’N 77°12’E
The facades of the building, all realized with GAMMASTONE Natural AIR panels made of travertine marble, compose a complex surface with an astonishing monolithic effect. The beauty of the material and the quality of the finish visible in the pictures enhance the quality of the project that portrays superbly the topics of the great Italian architectural tradition.
The GammaStone AIR solution in natural stone allows the mechanical installation of large panel sizes formed with marble, granite, limestone or travertine. It can be used to make beams, columns and any other architectural element with a monolithic result, creating the effect of one piece. The available sizes depend on the block size; the maximum size is 3200x1500 mm.

The panels glued with structural epoxy adhesives and reinforced by metal angle forming a single monolithic architectural element.

The GammaStone AIR TECHNOLOGY

MONOLITHIC ARCHITECTURAL ELEMENTS
Natural stones give the buildings a beauty that defies the centuries, emitting magnificence and sophistication.

The aura of eternity guaranteed by the Roman Travertine is well known throughout the world. This project effectively proves that tradition and innovation can be combined to provide an impressive aesthetic result together with a high quality of living.

10 MM THICK ROMAN TRAVERTINE SLABS
3000x1300 MM
This lack of excess labels the Hotel effectively as one of the most sought-after of the area and suitable primarily for business travelers. Stone-effect porcelain gres is clearly not a random choice because it has been specially designed by the designer to bring the entire renovation back to the principle of aesthetic functionality without neglecting the robustness of the materials involved.

Residence Inn by Marriott in Buffalo makes a stylistically winning choice and GammaStone AIR once again manages to give the right personality to the final result, taking full advantage of the potential that has always distinguished this revolutionary product.

The renowned Marriott chain offers a modern concept of welcoming its customers. The essential lines and measured proportions of the building are a spokesman of sobriety and balance. This “Hotel Restyling” is signed GammaStone AIR: starting from the architectural design and continuing with the covering of the entire façade thanks to ultralight and large GammaStone Gres AIR panels (up to 2800mm). The realization of recurring monolithic elements characterize the entire façade and together with the singular slotted ceiling for the insertion of LED lights, give modernity and minimalism to the project.
Even the most traditional form can hide an innovative solution. This architectural solution achieves energy efficiency and preserve the supporting structures and the interiors from the weather conditions. In this project the usage of GAMMASTONE Natural Air panels in Stanton Moore Sandstone has ensured the harmonious of the building in the architectural surrounding, without giving up the care for the finishes and the use of original and effective aesthetic solutions for the entrance and for the windows.

The building in the picture shows how it is possible to insert an innovative building in an urban landscape characterized by a strong links with the local tradition.
Innovative University accommodation in Scotland, “Beith Street” project involved the manufacturing of more than 2,000 panels for the ventilated facade of a new building inside the complex of “West Village”, a student residence located a few hundred meters from the University of Glasgow. Natural GAMMASTONE AIR enabled the designer to create a modern and energy efficient building in perfect harmony with the surrounding architectural environment and the Scottish urban landscape. The adoption of the ventilated facade is very effective in counteracting the high humidity rate of the local weather and, moreover, the usage of local stone facilitated the inclusion of the new building in the old complex without preventing innovation, also from the point of view of design.

The flexibility and the ease of installation of GAMMASTONE AIR made possible the installation of a curved facade due to the relatively small size of the individual panels.
The deep and absolute black is often associated with class, luxury and elegance, in fashion as well as in architecture. GAMMASTONE interpreted this timeless trend with for a Prada boutique in Panama. In this projects we wanted to honor this great Italian brand through the use of a precious material that enhance the distinction and exclusivity of Prada. On the other hand, this applications also demonstrates the flexibility of the panels GAMMASTONE Natural Air: Zimbabwe Black granite for Panama and Marquina Black Marble for Amsterdam, that can perfectly meets the needs of functionality and aesthetic value even on small surfaces and inside a commercial building.

BOUTIQUE PRADA
The charm of the black finish for an Italian fashion house
A further peculiar feature of this facade comes from the natural stone that contains within the fossils of some ancient marine organisms. Those fossils are visible in some parts of the façade, making this building even more exceptional and unique all around the world.
Cepsa opens the first service station in Tenerife showing up with the elegant choice of GammaStone Glass AIR solution. The use of large ultralight panels (tempered glass on the surface) with red “traffic-light” color give an innovative appearance and match perfectly with the environmental friendly approach of this modern station project. This is the first service station to have a smart building implementing a brand new construction model. Remarkably, this building incorporates the most advanced technologies in terms of energy saving. Among these, the GammaStone Glass AIR ventilated façade stands out, composed by a tempered glass that causes a significant reduction of heat dispersion. Even if the majority of the panels are simple rectangular shapes, this project is strongly characterized by the realization of curved glass corners (with a radius of curvature of 450 mm). Moreover, the choice of using the same material for the cladding of the access doors, made them blend completely into the façade, enhancing the material continuity between the various surfaces. The result is a visual effect of absolute essentiality and linearity.

A technically excellent result! GammaStone has overcome another important challenge, taking advantage of all its technical expertise and its unparalleled professionalism to satisfy designers’ demands and clients’ needs. GammaStone faced this project obtaining an impeccably result, beyond any expectation.
The choice of materials is a crucial step of the creative process of the world top designers. The building material enables the optimal shaping of the spaces, both internal and external. Furthermore, the material interacts with the surrounding environment and crucially determines the functionality of the environment. Using GAMMASTONE Glass AIR panels in lacquered glass in white are a prime example of how a designer can obtain a cleaning and rational effect suited to an environment that is both institutional and for business. In Torre Region Piemonte we installed the large reflective surfaces of the glass panels for the internal cladding of large common areas, obtaining a striking result in terms of brightness and aesthetic appeal.
The choice of glass for the interiors of professional environments is definitely a relevant trend. This solution facilitates the cleaning of the surfaces and conveys a sense of modernity and brightness to users and workers. In this project, the GAMMASTONE Glass AIR panels in lacquered glass (ice colored) clad the lobby of the prestigious Milanese Bank. Note that the huge size of the panels, which is one of the points of strength from the aesthetic point of view, does not imply difficulties in the installation or waste of space. The reduced anchoring structure, in this case, creates a gap of only 5 cm, which can be used for the allocation of power and communication lines.

Back-lacquered Gammastone Glass panels (shiny finish), decorate another exhibition space showing light and elegance also thanks to the creation of monolithic glass angles of high aesthetic quality. The remarkable finish of the corners enhances the delicacy and the luminosity of glass while ceramic monolithic corners confer the other spaces order and elegance.

**UNICREDIT BANK**

Panels in lacquered glass (ice colored) clad the lobby of the Unicredit

**LOCAL PALEONTOLOGICAL MUSEUM OF ASTI**

Monolithic glass angles of high aesthetic quality
The solution Glass Bicolor is given by the coupling of glasses with different colors applied on one GAMMASTONE AIR panel. Its uniqueness is given by the infinite possibilities to realize large panels, having glass finishing of two colours; avoiding in this way the presence of double panels, saving on the quantity of formats and on substructure to design.
«You can’t think of architecture without thinking about people.»
(Richard Rogers)
The GammaStone AIR solution in porcelain gres is available in large sizes utilising the new slim manufacturing techniques. It’s a high-technology product which allows mechanical installation of 3/6 mm thick ceramic slabs and the realisation of architectural monolithic elements. Available sizes up to 3200x1500 mm and all sub-sizes obtained by cutting the standard ones.
Finishing

GRES
COD. GR1

Tinta Unita Tortora  Tinta Unita Beige  Tinta Unita Grigio  Tinta Unita Nebbia

Marmo Pietra Basaltina  Marmo Pietra di Capri  Marmo Pietra del Belgio  Marmo Limestone  Marmo Pietra Serena

Legno Fango  Legno Noce Chiaro  Legno Noce Scuro  Legno Rovere  Cemento Grigio Chiaro Nuvolato

Cemento Fango Nuvolato  Cemento Grigio Nuvolato  Cemento Antracite Nuvolato  Cemento Avorio Nuvolato  Cemento Sabbia Nuvolato

Cemento Beige Nuvolato  Marmo Travertino Classico  Marmo Crema Marfil  Ossido Nero  Ossido Muro

Ossido Nebbia
Finishing
GRES AIR

**GRES COD. GR2**
- Geo Beige
- Geo Grigio
- Geo Nero
- Geo Noce
- Pietra Basaltina Chiare
- Pietra Basaltina Scure
- Pietra Crema Marfil
- Pietra Travertino
- Unicolor Beige
- Unicolor Bianco
- Unicolor Grigio
- Unicolor Miele
- Unicolor Nebbia
- Unicolor Nero
- Unicolor Nocciole
- Unicolor Tortora

**GRES COD. GR3**
- Cemento Grigio
- Cemento Nebbia
- Cemento Piombo
- Cemento Sabbia
- Cemento Terra
- Metallizzato Averio
- Metallizzato Grigio
- Metallizzato Grigio Pluma
- Metallizzato Muro
- Metallizzato Nero
- Metallizzato Ruggine
- Pietra Bianco
- Pietra Calacatta Oro
- Pietra di Savoia Grigia
- Pietra di Savoia Perla
- Pietra Emperador Marrone Spazzolato
- Unicolor Grigio
- Unicolor Nero
- Unicolor Noce
- Vein Beige
- Vein Ciliegio
- Geo Antracite
Finishing

**GRES**

**COD. GR3**

- Geo Bronzo

**GRES**

**COD. GR4**

- Metalli Ferro
- Metalli Plutonio
- Metallizzato Bianco
- Unicolor Bianco Assoluto
- Vain Moro
- Geo Moro
- Geo Tortora
- Pietra Quarzo
- Geo Caffe
- Geo Grigio Chiaro
- Pietra Lavica
- Nera Naturale
- Pietra Limestone

**GRES**

**COD. GR5**

- Pietra Bianco Statuario
- Pietra Onice Bianco Lucidato
- Pietra Travertino Romano
- Pietra Onice Blu Lucidato

**GRES**

**COD. GR6**

- Pietra Roccia Bianca
- Pietra Roccia Grigia

**GRES**

**COD. GR7**

- Pietra Madreperla Marrone
- Pietra Arabescato Lucidato
- Pietra Madreperla

**GRES**

**COD. GR8**

- Pietra Onice Lucidato
- Pietra Thassos Lucidato

---

**GAMMASTONE_AIR TECHNOLOGY**
“Architecture begins where two stones are superimposed accurately.”
(Ludwig Mies Van Der Rohe)
The GammaStone AIR solution in natural stone allows the mechanical installation of large panel sizes formed with marble, granite, limestone or travertine. It can be used to make beams, columns and any other architectural element with a monolithic result, creating the effect of one piece. The available sizes depend on the block size, the maximum size is 3200x1500 mm.

<table>
<thead>
<tr>
<th>Sizes panels</th>
<th>Max panel sizes</th>
<th>Total panel thickness</th>
<th>Stone thickness</th>
<th>Panel weight</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Section A</strong></td>
<td>3200x1500 mm (4,800 m²)</td>
<td>17 mm</td>
<td>5 mm</td>
<td>18 kg/m²</td>
</tr>
<tr>
<td></td>
<td>126” x 59” (52.42 ft²)</td>
<td>≈ 11/16”</td>
<td>≈ 3/16”</td>
<td>3.7 lb/sqft</td>
</tr>
<tr>
<td><strong>Section B</strong></td>
<td>3200x1500 mm (4,800 m²)</td>
<td>22 mm</td>
<td>10 mm</td>
<td>30 kg/m²</td>
</tr>
<tr>
<td></td>
<td>126” x 59” (52.42 ft²)</td>
<td>≈ 7/8”</td>
<td>≈ 3/8”</td>
<td>6.1 lb/sqft</td>
</tr>
<tr>
<td><strong>Section C</strong></td>
<td>3200x1500 mm (4,800 m²)</td>
<td>24 mm</td>
<td>12 mm</td>
<td>36 kg/m²</td>
</tr>
<tr>
<td></td>
<td>126” x 59” (52.42 ft²)</td>
<td>≈ 15/16”</td>
<td>≈ 1/2”</td>
<td>7.4 lb/sqft</td>
</tr>
</tbody>
</table>
Finishing

NATURAL AIR

GRANITE
COD. NF4

- Guato S. Helena
- Vivara
- Crema Violet
- Giallo Alabastrino
- Wizard Green
- Peacock Green
- Verde Bahia Ubaituba
- Verde Butterfly
- Baltic Brown (Medio)
- Giallo Venezia Fiorito
- Aurora Blanca
- Brandy Yellow
- Giallo Novo
- Nero Africa Medium Dark +140 H
- Cobra
- Terracotta
- New Kashmire White
- Rosa Iris
- Crema Brasil
- Giallo Ornamental

- Golden Tiger
- New Venetian Gold
- Giallo Sf. Real Gm. B-Brown
- B-Brown
- Medium Dark - 140 H
- Presto Caffè
- Nuvole
- Summer Light
- Buff Grey
- Summer White
- Alpiara Costada
- Multicolor
- Verde Marina
- Black Eyes
- Nero Africa Medium Dark +140 H
Finishing

NATURAL AIR

GRANITE COD. NF5

Ivory White
Ilha Bela
Himalayan Blue
Black Pearl
Raj Black
Amelia
Paradiso Bassi
Paradiso Cipriano
Sapphire Brown
Golden Kam
Golden Gate
Shangri - La
Verde San Francisco G.
Ibogreen
Lady Dream
Ilha Bela Shangri - La
Verde Lavras
Verde Real
Verde Gloria
Silver Esblic
Raji Black Lady Dream
Ivory Fantasy
Verde Crystal
Golden Kam Blue Moon
Paradiso Bash Labrador Silver
Nebraska White
Ilha Bela Saphire Blue
Saphire Brown
Fantastic White
Red Brasil Imperial
Nevada White

GAMMASTONE AIR TECHNOLOGY

GAMMASTONE AIR TECHNOLOGY
Finishing

GRANITE

COD. NF6

Via Lattea  Lilia Gerato  Granite  Juparana Gol  Travertin

Via Lattea  Colonia White  Delicata White  Kashmir White  Maita White

Delicata Gold  Symphony Brown  Angola Black  Juperana Colombo  Volga Blue

Nero Assoluto Zimbabwe  Ambra Dorata  Kashmir Gold  Madura Gold  Vico Blue

Amber Brown  Bianco Romano  Arabo  Sappoa Green  Imperial Black

Shivakashi  Rosa Corallo  Nero Brown  Rive White  Bahamas

Fantasy White  Blue In The Night  Labrador Antique
Finishing

**GRANITE**

**COD. NF8**

- Sierra Granada
- Virginia Black
- Snowtex
- Tango Bordeaux
- Matrix
- Desert Storm
- Constantine
- Blanco Piratuba
- Roburian
- Rodhium
- Luce Di Agata
- Marsiceco Black & Gold
- Asti Blue
- Cosmic Black
- Red Ink

**COD. NF9**

- Abstract
- Nettuno Bordeaux
- River Bordeaux
- Blue Brisa
- Infinity
- Negresco
- Nougat
- Soap Stone Original
- Titanium/Alstonix
- Metabolous
- Aquarius
Finishing

**NATURAL AIR**

**GRANITE**
COD. NF10

- Bed Jaune
- Moca Gold
- Red Jasper
- Tartaruga
- Antartide
- Casta Smoalba
- Metallicus

**GRANITE**
COD. NF12

- Duetto
- Wasabi
- Calypso Gold
- Ägurula
- Dolcevita
- Luce di Luna
- Macaubas Gold
- Montblanc
- Palomino
- Riviera

**GRANITE**
COD. NF11

- Brown Silk
- Calypso Tropical
- Copper Brown

**GRANITE**
COD. NF13

- Tahiti
- Caffe
- Blanc De Blanc
- Ice Flakes
## Finishing

### NATURAL AIR

<table>
<thead>
<tr>
<th>GRANITE</th>
<th>COD. NF13</th>
<th>GRANITE</th>
<th>COD. NF16</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neve Dolomia</td>
<td></td>
<td>Taj Mahal</td>
<td></td>
</tr>
<tr>
<td>Roma Imperiale</td>
<td></td>
<td>Opale Blue</td>
<td></td>
</tr>
<tr>
<td>Madreperla</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Madagascar</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Victoria Falls</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>GRANITE</th>
<th>COD. NF14</th>
<th>GRANITE</th>
<th>COD. NF17</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blue River</td>
<td></td>
<td>Opale</td>
<td></td>
</tr>
<tr>
<td>Ice Pearl</td>
<td></td>
<td>Azul Imperiale</td>
<td></td>
</tr>
<tr>
<td>Blue Eyes</td>
<td></td>
<td>Azul Macaubas</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Fusion</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>GRANITE</th>
<th>COD. NF15</th>
<th>GRANITE</th>
<th>COD. NF18</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blue Nere</td>
<td></td>
<td>Green Ray</td>
<td></td>
</tr>
<tr>
<td>Blue Roma</td>
<td></td>
<td>Botanic Green</td>
<td></td>
</tr>
<tr>
<td>Ice Bordeaux</td>
<td></td>
<td>Cristallo</td>
<td></td>
</tr>
<tr>
<td>Lake Placid</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Radice</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Finishing

GRANITE
COD. NF19

Cristallo Gold  Iceberg  Iron Red  Visone

GRANITE
COD. NF20

Azul Bali  Amazzonite

GRANITE
COD. NF21


MARBLE
COD. NF1

Giallo Atlantide  Giallo Cleopatra  Giallo Provenza

MARBLE
COD. NF2

Gatala  Rainbow  Verde Guatemala  Crema Imperiale Top  Wratza

Rosa Asiago  Bianco Asiago Verso  Teak - Rainbow  Bianco Asiago Contro  Ciocolato

Biancotre (Baino Reale)  Amazon Brown  Lipica Fiorito  Palissandro Blue  Perlato Europa
### Finishing

**MARBLE**

**COD. NF3**

<table>
<thead>
<tr>
<th>Supreme Beige</th>
<th>Palissandro White</th>
<th>Botticino Fiorito</th>
<th>King Beige Fiorito</th>
<th>Rosso Verona</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fossil Grey</td>
<td>Rosso Aslago Verso</td>
<td>Rosso Aslago Contro</td>
<td>Tuff Dourado</td>
<td>Bianco Carrara Cd</td>
</tr>
<tr>
<td>Forest Green</td>
<td>King Beige</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**MARBLE**

**COD. NF4**

<table>
<thead>
<tr>
<th>Bianco Pinta Smeralda</th>
<th>New Chiampo</th>
<th>Botticino Semiclassico</th>
<th>Stone Grey</th>
<th>Crema Marfil</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asya Beige</td>
<td>Giallo Reale</td>
<td>California Beige</td>
<td>Lipica Unito</td>
<td>King Brown</td>
</tr>
<tr>
<td>Veselje</td>
<td>Botticino Classico Extra</td>
<td>Forest Brown</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Finishing

MARBLE

COD. NF5

Breccia Damascata
Emperador Light
Arabescato Alpine
Verde Borgogna
Bardiglio
Emperador Dark
Nero Marquina
Ladoga Brown
Striato Olimpico
Bianco Carrara C
Bianco Gioia
Grigio Italia
Meteora Beige
Rosso Alicante

MARBLE

COD. NF6

Pietra Di Luserna
Fossil Black
Royal Brown
Deep Brown
Fossil Brown
Lemon White
Giallo Hero
Stamatetto

MARBLE

COD. NF7

Blue Sky
Lumen
Black Motion
Bronze Amani
Grigio Carnico
Finishing

**MARBLE**

**COD. NF7**

- Nero Alpino
- Nero Port Laurent

**MARBLE**

**COD. NF8**

- Arabescato Oroblco Rosso
- Arabescato Cerviale
- Fantaky Brown

**MARBLE**

**COD. NF9**

- King White (-239 Cm)
- Bianco Naxos
- Michelangelo Black & Gold
- Crema Italia
- Black Wave

**MARBLE**

**COD. NF11**

- Calacatta Van Gogh
- Calacatta Ovieto
Finishing

**MARBLE**

**COD. NF12**
- Eramosa Cross Cut
- Eramosa Vein Cut
- King White (+240 Cm)
- Superfisive White
- Covelano Vena Oro/Argento

**MARBLE**

**COD. NF13**
- Ice Marble

**MARBLE**

**COD. NF14**
- Nero Gali Gold

**MARBLE**

**COD. NF15**
- Giallo Stena

**MARBLE**

**COD. NF16**
- Brown Drop
- Gold Drop
- Covelano Bianco (Lasa)
- Covelano Vena Oro
- Lotus White

**MARBLE**

**COD. NF17**
- Calacatta Michelangelo
- Calacatta Oro
- Bianco Thassos

**MARBLE**

**COD. NF18**
- Statuario

**MARBLE**

**COD. NF19**
- Calacatta Michelangelo Extra

**MARBLE**

**COD. NF20**
- Porfido
Finishing

---

**TRAVERTINE**

**COD. NF3**
- Travertino Seaweed
- Travertino Classico
- Travertino Rosa
- Travertino Moca
- Golden Brown

**TRAVERTINE**

**COD. NF4**
- Travertino Samantha
- Travertino Whisky
- Travertino Silver
- Travertino White

**TRAVERTINE**

**COD. NF6**
- Travertino Rosso
- Travertino Classico

**TRAVERTINE**

**COD. NF7**
- Travertino New Navona

**LIMESTONE**

**COD. NF1**
- Mocha Cream
- Mocha Cream Wood
- Mocha Cream Wood Fossil Vein-Cut

**LIMESTONE**

**COD. NF2**
- Limestone Beige
- Limestone Grey
- Saint Hubert Limestone

**LIMESTONE**

**COD. NF3**
- Blend Indiana Limestone
- Moleanos Limestone
- Shell Reef Limestone
Thanks to the GammaStone 3D AIR solution, the combination of different materials with various thicknesses is now possible, enabling the creation of 3D effect panels customisable by the designer.

The GammaStone Mattoncini AIR solution guarantees mechanical installation of stone bricks with the advantage of fast installation and beautiful aesthetics. The panel is supplied and pointed with mortar ready for installation. The joints between panels are designed to guarantee a unique-effect on the entire facade.
“That of the architect is an ancient craft such as hunting, fishing, cultivating and exploring. After the search for food comes the search for the dwelling. At a certain point, the man, dissatisfied with the shelters offered by nature, became an architect.”
(Renzo Piano)
## Sizes panels

The GammaStone AIR solution in lightweight back-lacquered glass allows the mechanical installation, both indoor and outdoor, of extremely lightweight panels in large sizes. It also provides a high level of resistance against breakage by shock, far superior to traditional solutions with laminated glass. Available sizes up to 4200x1500 mm and all sub-sizes obtained by cutting the standard ones. THE FLOAT OR TEMPERED GLASS IS APPLIED DEPENDING ON THE SIZES AND REQUIRED APPLICATIONS.

### GLASS AIR

<table>
<thead>
<tr>
<th>Max panel sizes</th>
<th>Total panel thickness</th>
<th>Glass Thickness</th>
<th>Panel weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Section A</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4200x1500 mm</td>
<td>18 mm</td>
<td>6 mm</td>
<td>21 kg/m²</td>
</tr>
<tr>
<td>~165,35&quot;x59,06&quot;</td>
<td>= 11/16&quot;</td>
<td>= 1/4&quot;</td>
<td>4.3 lb/sqft</td>
</tr>
<tr>
<td>3200x1500 mm</td>
<td>16 mm</td>
<td>4 mm</td>
<td>16 kg/mq</td>
</tr>
<tr>
<td>~126,98&quot;x59,06&quot;</td>
<td>= 5/8&quot;</td>
<td>= 3/16&quot;</td>
<td>3.3 lb/sqft</td>
</tr>
</tbody>
</table>

### Glass thickness

- 18 mm ≈ 11/16"
- 6 mm ≈ 1/4"
- 4 mm ≈ 3/16"

### Total panel thickness

- 18 mm
- 16 mm

### Panel weight

- 21 kg/m²
- 16 kg/mq
- 4.3 lb/sqft
- 3.3 lb/sqft

### GLASS TYPES

- Extra light
- Float
- Lacquered
- Reflective
- Silk printed

### BACK-LACQUERED

- Lacquered
- Reflective
- Silk printed

### FINISH GLASS

- Polish
- Sandblasted
- Satin

### EDGE

- Rough edge
- Matte edge
- Tempered on request
**Colors**

GLASS AIR

- Nero Magenta
- Bianco Nebbia
- Antracite Argento
- Verde Chiaro
- Grigio Extra Bianco
- Senape Tortora Chiaro
- Nero Classico
- Bianco Marrone
- Celeste Bordeaux
- Panna Grigio Classico
- Bianco Latte
- Verde Marino Ocra
- Blu Oceano
- Marrone
- Arancio
- Magenta
- Extra Bianco
- Ocra
- Grigio Classico
- Allumino
- Argento
- Tortora Chiaro
- Bianco Perla
- Bordeaux
- Grigio Cenere
- Bianco Latte
- Beige
- Verde Chiaro
- Nero Classico
- Acciaio

Any other color is available on request

**Bicolor**

The GammaStone Bicolor AIR solution was born from the combination of different coloured glass applied on a single panel. The uniqueness is given by the infinite possibilities to realise large panels with glass finishes in different colours and types.
TX ACTIVE technology (patented by Italcementi) makes the GFRC Plus cement mortar photocatalytic. The active principle in the material “captures” air pollutants when it is exposed to the sunlight. It changes certain harmful substances in inert salts, helping to free up the atmosphere from the smog.
The panel is composed by an ultra-thin mortar slab (high-performance photocatalytic and self-cleaning, reinforced with amorphous metal fibers), a structural core interposed between two fiber glass mats and a 0.6 mm stainless steel plate. This biodynamic concrete has durable aesthetic characteristics, reducing and simplifying maintenance actions.

The mortar also includes the use for the 80% of recycled aggregates, in part coming from the working dust of Carrara marble, that gives a superior brightness compared to the traditional white concretes. It includes also, amorphous metal fibers in order to make the material more resistant.

### Sizes panels

The mortar includes the use for the 80% of recycled aggregates, in part coming from the working dust of Carrara marble, that gives a superior brightness compared to the traditional white concretes. It includes also, amorphous metal fibers in order to make the material more resistant.

<table>
<thead>
<tr>
<th>Section A</th>
<th>Min panel sizes</th>
<th>Total panel thickness</th>
<th>Concrete thickness</th>
<th>Panel weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>3200x1500 mm (4,900 m²)</td>
<td>17 mm</td>
<td>5 mm</td>
<td>18 kg/m²</td>
</tr>
<tr>
<td></td>
<td>125.98&quot;x59,06&quot; (51,67 ft²)</td>
<td>≈ 11/16&quot;</td>
<td>≈ 3/16&quot;</td>
<td>3.7 lb/sqft</td>
</tr>
</tbody>
</table>

### APPLICATIONS

- Concrete product with high aesthetic value
- Prefabricated elements with high quality texture
- Non-structural architectural elements
- Facade panels, with no continuous sections, with very complex shapes
- Facade panels with continuous sections

* mortars for traditional applications, or a mixture of hydraulic binders, inert, possible additives and water, in a higher water / cement ratio equal to 0.5.
Colors

GFRC PLUS AIR

Light Blue Ocean
Heavenly
Red Ash
Magenta
Yellow Straw
Purple Ocher
Wot
White Light Grey
Green Rust
Brown Cyan
Sand
Seppia
PetroleumMarine Green
Pink Earth
Dark Brown
Grey Bordeaux
Blue Iron
Orange Milk
Dark Gray
Grey Bordeaux
Any other color is available on request
A wide range of texture patterns is available

- 2/34 LAHN
- 2/62 TEVERE
- 2/93 RED RIVER
- 2/76 NIL
- 2/103 LENA
- 2/92 RIO BRAVO
- 2/102 PARANA
- 2/131 LAUSITZ
«Architecture is the way in which man has tried to inhabit the earth, to protect himself from the elements, but above all to make his existence evident.»

(Paolo Portoghesi)
The GammaStone Mosaic AIR solution allows mechanical installation of ceramic or glass mosaic with the advantage of fast installation and beautiful aesthetics. The panel is supplied with epoxy resins within the joints and ready for installation. The joint between panels is designed to provide a unique-mosaic effect on the entire façade.

**CLOSED JOINT SOLUTION**

<table>
<thead>
<tr>
<th>Section A</th>
<th>Mosaic panel sizes</th>
<th>Total panel thickness</th>
<th>Mosaic thickness</th>
<th>Panel weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>2914x970 mm (2,826 m²)</td>
<td>16 mm</td>
<td>4 mm</td>
<td>16 kg/m²</td>
<td></td>
</tr>
<tr>
<td>114”x38,19” (30,42 sqf)</td>
<td>5/8&quot;</td>
<td>3/16&quot;</td>
<td>3.3 lb/sqft</td>
<td></td>
</tr>
</tbody>
</table>
«If you make works in series, you are not architects but workers: and this is because from my point of view, architecture is invention, and as an invention it is art.»

(Oscar Niemeyer)
Sizes panels

The GammaStone Brick AIR solution allows dry installation of Klinker or porcelain bricks with advantages of a fast installation and beautiful aesthetics. The panel is supplied and pointed with mortar ready for installation. The joints between panels are designed to guarantee a unique-effect on the entire facade.

**Solution without “zip”**

<table>
<thead>
<tr>
<th>Section</th>
<th>Max panel sizes</th>
<th>Total panel thickness</th>
<th>Brick thickness</th>
<th>Panel weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brick Gres</td>
<td>3000x1000 mm (3.00 m²)</td>
<td>19 mm</td>
<td>7 mm</td>
<td>17 kg/m²</td>
</tr>
<tr>
<td>Klinker B</td>
<td>3000x1000 mm (3.00 m²)</td>
<td>18÷23 mm</td>
<td>6÷11 mm</td>
<td>27÷30 kg/m²</td>
</tr>
<tr>
<td>Klinker C</td>
<td>3000x1000 mm (3.00 m²)</td>
<td>27 mm</td>
<td>15 mm</td>
<td>22 kg/m²</td>
</tr>
<tr>
<td>Facciavista</td>
<td>3000x1000 mm (3.00 m²)</td>
<td>32 mm</td>
<td>20 mm</td>
<td>22 kg/m²</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Section</th>
<th>Max panel sizes</th>
<th>Total panel thickness</th>
<th>Brick thickness</th>
<th>Panel weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facciavista</td>
<td>3000x1000 mm (3.00 m²)</td>
<td>32 mm</td>
<td>20 mm</td>
<td>22 kg/m²</td>
</tr>
</tbody>
</table>

**“zip” solution**

<table>
<thead>
<tr>
<th>Section</th>
<th>Max panel sizes</th>
<th>Total panel thickness</th>
<th>Brick thickness</th>
<th>Panel weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brick Gres</td>
<td>3000x1000 mm (3.00 m²)</td>
<td>19 mm</td>
<td>7 mm</td>
<td>17 kg/m²</td>
</tr>
<tr>
<td>Klinker B</td>
<td>3000x1000 mm (3.00 m²)</td>
<td>18÷23 mm</td>
<td>6÷11 mm</td>
<td>27÷30 kg/m²</td>
</tr>
<tr>
<td>Klinker C</td>
<td>3000x1000 mm (3.00 m²)</td>
<td>27 mm</td>
<td>15 mm</td>
<td>22 kg/m²</td>
</tr>
<tr>
<td>Facciavista</td>
<td>3000x1000 mm (3.00 m²)</td>
<td>32 mm</td>
<td>20 mm</td>
<td>22 kg/m²</td>
</tr>
</tbody>
</table>
Finishing
BRICK KLINKER B
COD. BR1

Goldline Ocra Dorato
Goldline Siena Dorato
Goldline Marrone Dorato
Goldline Crema Dorato
Goldline Grigio Dorato

Goldline Nero Dorato
Craft Verde Oliva Fiammato
Craft Grigio Scuro
Craft Grigio
Craft Oro Fiammato

Craft Verde Azzurro Fiammato
Craft Ambra Fiammato

BRICK KLINKER C
COD. BR1

Aladino
Big Ben
Cloudy
Dehug
Dharma Style

Light Ebony
Escape
Everescence
Floating
Fold

New York
Hamman
Iron
Iron Metallic
London

Medusa
Miami Winter
Miss Marple

GAMMASTONE_AIR TECHNOLOGY
Finishing

BRICK KLINKER C
COD. BR1

BRICK GRES
COD. BR2

Mon Soleil
Mystical Dream
Neue Blume
Next Simposium
Olimpo

Petrol
Platin
Velarium
Viktoria

Carillon
Batik
Ebony
Kaleidos
Layering

Niveum
Finishing

BRICK FACCIAVISTA
COD. BR3

Solution
Without “Zip”

“Zip” Solution
INDEX

196. VENTILATED FACADES
Thermo-Fluid Dynamic System
Technical Draw

214. CURTAIN WALL
Technical Draw

224. WORKING PHASES
226. IMPACT RESISTANT & COMPRESSIONs
228. MANUFACTURING TECHNIQUES
Glass Air, Gres Air, Natural Air, Gfrc Plus Air, Mosaic Air and Brick Air

236. SERVICES
Building Information Modeling (BIM) Services
Stone Sourcing Services
Design Services
Product configurator
Static analysis
Assembly plan
Installation

250. CERTIFICATIONS
Fire Performance
Interlock
Pina

256. PARTNERS
258. TECHNICAL DATA SHEET
GRES AIR
NATURAL AIR
GLASS AIR
Gfrc PLUS AIR
MOSAIC AIR
BRICK AIR

270. Panels & Mock-up
273. Sample Box
274. SPECIFICATIONS
GammaStone AIR is the most important technological challenge in the international industry of VENTILATED FAÇADES and is the result of huge R&D investments together with the skilled work of expert teams of Architects, engineers, and designers. Our team works continuously for the improvement of innovative and revolutionary building systems with the aim of harmonizing the aesthetic charm with the best results from the technical and functional point of view. GammaStone AIR is an advanced eco-sustainable system able to satisfy the most ambitious and modern stylistic trends of architecture. It also optimizes the functional requirements, the practicality and the comfort of living.

Our ventilated façades, resulted from an intense research process, are an answer to the widespread need of efficient thermal and acoustic isolation for homes, work environments, etc., with structures and materials that, at the same time, guarantee unalterable aesthetic beauty. GammaStone AIR is an excellent and unmatched cladding material; it is today the most suitable material available in the international market referring to ventilated façades. This innovative paneling system for ventilated façades was developed in collaboration with the largest and most reliable companies in the sector. Together with our partners we reached top results referring to insulation, protection from weather events and from external noises.

The GammaStone AIR panels allow easy installation, versatility in architectural design, original stylistic solutions with a wide choice of large-sized marble, granite, porcelain slabs, and stoneworks. GammaStone Structurally speaking, GammaStone AIR ventilated façades are really reliable. Our panels undergo strict tests against wind, compression, hurricanes, etc. They are installed on a metal hanging structure fixed to the wall of the building with layers of insulation and protection materials are assembled within.

The function of the external panels is to protect and insulate and to create a gap between external environment and the structural wall of the building.
The suspension and the fixing devices of the metal structure are dimensioned so that an empty space between the insulating layer and the outer panel is created. This is an air chamber connected to the outside by air vents that are usually placed at the base and at the top of the façade creating a continuous ventilation effect in the gap. It is also called “chimney effect” due to the difference in temperature between the air in the ventilation chamber and the outside air. Air enters the gap from the bottom and moves upwards, thus creating an efficient airflow that maximize the transpiration of the façade. This ventilation allows the rapid elimination of aqueous vapours from the inside. Moreover it considerably reduces the condensation and the negative effects of any penetrations of water. This led consequently to the reduction of the quantity of heat that enters or exits from the building.
The GammaStone AIR Ventilated System with mechanically fixed concealed hangers offers maximum design and highest safety. This system eliminates any visible fixing device on the panel surface, which results in a clean façade with the smallest joint possible. At the same time it guarantees the highest safety as the system is certified to resist negative wind loads over 450 kg/sqm.

**CLIP RAIL FOR MECHANICAL FIXING**

Ventilated Facades - Invisible Fixing Solution
The horizontal cross section shows all components of the system. The thickness of a hard or soft insulation can vary up to 140 mm, so as the dimension of ventilation cavity of recommended minimum 30 mm can vary, based on its calculated performance.

In the vertical section, the use of the brackets can be easily identified by their different dimensions. The 150 mm main bracket is of structural use and guarantees a fix point to control the linear dilatation and represents a hinge and a joint for the mullions. The smaller 80 mm bracket has a static task and allows the relative sliding between bracket and mullion. The distance between brackets and their quantity is calculated according to the static system requirements.
This is one of the main points of the system. This is the principal air inlet of the façade, and, if the system is well designed from the technical and fluid dynamic point of view, the air from here goes up to the top of the façade with laminar motion. A grid or a pierced sheet, or an aluminum profile (included in our accessories range) must be placed to allow the external air to pass in the ventilation space according to the calculations.

The head detail is another important point of the façade system. This is the outlet of the exhaust air coming up from the ventilation space and it must have two different roles: on the one hand, it has to protect the façade from the outside water thus granting the rain drainage, on the other hand, it has to allow the air outlet, without any air vortex or warm air stagnation.
The outer corner is one of the flagships of the Gammastone AIR façade system. The panels are cut at 45° in the factory and can be fixed at each other with the appropriate brackets in the back stainless steel sheet to give the elements of the façade a “monolithic” appearance, is without vertical escape. Otherwise, one can determine the architectural joint by project and maintain it during assembly. In both cases, thanks to the locking of the panels, the stability in time of the joint is fully guaranteed.

Even this detail can be designed in detail. As in the case of the outer corner, the panels are fastened to each other to ensure the duration in time of the assembly and to confer the architectural aspect that most suits the designer, starting from a 0 mm joint.
The intrados side is a detail that gives personality to the building. In the version with concealed fixing with Gammastone AIR panel, the edge at 45° is realized with extreme precision, and the panels fixed together by rear brackets. The final aspect is that of a monolithic block, solid and clean at the same time.

The version with intrados in metal sheet, highlights much more the presence of the windows. In this case, the technique choice involves a great accuracy in the realization of the panels, which must include the compensation profiles for expansions and manufacturing tolerances of the building.
The sill plays a fundamental role in the frame of the windows, since the role of rainwater drainage is delegated to this detail. The version in Gammastone AIR imparts a monolithic appearance to the final system, and must ensure, thanks to the constructive system and seals, no infiltrations of water that can impregnate the insulation.

The metal sheet sill can be designed to ensure the evacuation of the ventilation air coming from the bottom, in addition to ensure the drainage of rainwater. The node must be designed so as not to allow water to enter from the outside, but at the same time to allow a convenient air expulsion.
The ceiling plays a decisive role, both from the architectural and fluid dynamic point of view. In addition to being a part of the window frame, it is the other main entry point for the outside air. It is possible to achieve this effect even with the version made with panels Gammastone AIR.

The ceiling made of metal sheet has an important architectural impact on the building. To ensure proper functioning of the thermal/fluid dynamic machine that is a ventilated façade, the sheet must be perforated so as to allow the entrance of the external air in agreement with the calculations.
Curtain Wall
thermal resistance and thermal insulation

The GammaStone AIR panel lends can be used perfectly as the infilling element of in curtain walls, both with mechanical retention both with structural one. Regardless of the technology used for the structure of the curtain wall (mullion or transom, independent cells, or more traditional windows), the GammaStone AIR panels can be used as infill ensuring the highest value external finish. It also provides the best protection from flames coming from the inside of the building thanks to the steel sheet on the back of the panel itself. In this way, the fulfilling is completely incombustible from flame coming from the inside or the outside the building. The rear stainless steel sheet is also perfectly compatible with the normal structural silicone (mono and bi-component) used in window frames for structural bonding of the glass and sheet metal panels. Therefore the panel GammaStone AIR can be pasted structurally on the façade grid, after the ordinary checks required by current regulations and from international technical guidelines (For. Ex. ETA0002 - GUIDELINE FOR EUROPEAN TECHNICAL APPROVAL FOR STRUCTURAL SEALANT GLAZING SYSTEMS (SSGS)).

According to the UNI EN 12664, the curtain wall solution GammaStone AIR guarantees a thermal resistance U (W/m²K) 0.5, contributing to the thermal insulation of the building despite the minimal thickness and the high aesthetic value.
Curtain Wall - Invisible Solution

Horizontal Cross
Section A-A

1) Mullion
2) Gammastone AIR
3) Mounting bracket
4) Shimming profile
5) Self-drill Screw
6) Insulation
7) Omega profile
8) Stiffening profile
9) Plasterboard
10) Rivet
11) Glass
12) Self-tapping screw
13) Reinforcement L chemically fixed

C.S. A-A Horizontal Section
C.S. B-B Vertical Section
C.S. C-C Base Detail
C.S. D-D Head Detail
C.S. E-E External Corner
C.S. F-F Internal Corner
C.S. I-I Internal Corner Variable
Vertical Cross
Section B-B

1) Transom
2) Gammastone AIR
3) Mounting bracket
4) Shimming profile
5) Self-drill Screw
6) Insulation
7) Plasterboard
8) Stiffening profile
9) Rivet
10) Glass
11) Reinforcement L chemically fixed

Base Detail
Section C-C

1) Transom
2) Gammastone AIR
3) Mounting bracket
4) Shimming profile
5) Self-drill Screw
6) Insulation
7) Plasterboard
8) Stiffening profile
9) Fissaggio meccanico / Rivet
10) Glass
11) Reinforcement L chemically fixed
External Corner
Section E-E
1) Mullion
2) Gammastone AIR
3) Reinforcement L chemically fixed

Variable External Corner
Section I-I
1) Mullion
2) Gammastone AIR
3) Mounting bracket
4) Shimming profile
5) Self-drill Screw
6) Insulation
7) Omega profile
8) Stiffening profile
9) Plasterboard
10) Rivet
11) Glass
12) Self-tapping screw
### Internal Corner

**Section F-F**

1. Mullion
2. Gammastone AIR
3. Mounting bracket
4. Shimming profile
5. Self-drill Screw
6. Insulation
7. Omega profile
8. Stiffening profile
9. Plasterboard
10. Rivet
11. Glass
12. Self-tapping screw
13. Reinforcement L, chemically fixed

### Head Detail

**Section D-D**

1. Transom
2. Gammastone AIR
3. Mounting bracket
4. Shimming profile
5. Self-drill Screw
6. Insulation
7. Plasterboard
8. Stiffening profile
9. Rivet
10. Glass
11. Reinforcement L, chemically fixed
1. GANGSAW
The marble or granite blocks are cut with a multiblade gangsaw or multiwire saw depending on the stone type.

2. POLISHING
The GammaStone AIR panels are polished, honed or brushed depending on the finish requested by the designer.

3. RIVETING
The panels can be pre-drilled in the factory, or drilled on site with special tools. Fixing is carried out from outside after leveling the panel.

4. CUTTING WITH WATERJET
GammaStone uses a waterjet for special cuts and grooves. This machine allows cutting the panel into any form required by the designer.

5. CUTTING WITH BRIDGE SAW
GammaStone uses the newest cutting technologies for cut-to-size panels in projects with custom panel sizes. The panel cuts are optimized to minimize material wastage.

6. PANEL EDGING AND DRILLING
GammaStone uses CNC machines which grant quality standards to meet customer’s needs.

7. AUTOMATED SYSTEM
A fully automated system for continuous panel production.

The company uses the latest machinery generation able to increase the quality standards of the products and to reduce the environmental impact. It has the merit of having been able to create and patent working phases and exclusive solutions.
IMPACT RESISTANT & COMPRESSIONS

GammaStone AIR slabs are extremely lightweight and have a very high resistance to impacts, bending and compressions thanks to the use of excellent and innovative materials in the aerospace industry. GammaStone AIR slabs represent a state-of-the-art solution that guarantees high performance standards and offers an unparalleled aesthetic beauty far superior to any solution available today on the market. The GammaStone AIR system enables the designer to respond excellently and in maximum safety to the increasing use of large-format panels to cover buildings.

The panels may be anchored mechanically, concealed or exposed, onto the substructure by means of specific fixtures. The guarantee of resistance to wind load is greatly superior to any Technical requirement imposed by the current regulations even in climatic zones subjected to weathering extremes such as monsoons and hurricanes.

Purpose of the test:
Pendulus impact resistance according to ETAG 034-1:2012 guidelines and UNI EN 14019:2004 regulation on the facade cladding. The test has been performed with a hard body consisting of a steel ball, 1 kg mass, as per UNI 8201 specifications, suspended by an inextensible steel cable.
MANUFACTURING TECHNIQUES
**GAMMASTONE GLASS AIR**

**manufacturing techniques**

### PANEL CUTTING

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>GL01</td>
<td>Out of square cut, of trapezoids, parallelograms (min. 1 sqm per single format based on the circumscribed rectangle).</td>
</tr>
<tr>
<td>GL02</td>
<td>Shaped cut of special and round shapes on the circumscribed rectangle (min. 1 sqm per single size based on the circumscribed rectangle).</td>
</tr>
</tbody>
</table>

### PASSING HOLES

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>GL20</td>
<td>Passing raw holes far from the edge and from the other min. 2x0 Over 20mm slots and cut-out price list do apply.</td>
</tr>
<tr>
<td>GL21</td>
<td>Raw edge slots (simple geometrical shapes. Min. perimetral 1 lm). For slots bigger then 1 perimetral lm look at the shaped slots.</td>
</tr>
<tr>
<td>GL22</td>
<td>Perimetral internal shapes slot (special geometrical shapes).</td>
</tr>
</tbody>
</table>

### PRE-DRILLING / BLIND HOLES

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>GL10</td>
<td>Blind holes made in the back side of the panel for the for the installation of the hangers.</td>
</tr>
<tr>
<td>GL11</td>
<td>Threaded insert M4 (value to add to the code GL10).</td>
</tr>
</tbody>
</table>

### 90° MONOLITHIC EXTERNAL CORNER

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>GL05</td>
<td>Only corner cut with external edge of the panel in section. Min. 1 lm (note that the not assembled material can be irregular).</td>
</tr>
<tr>
<td>GL30</td>
<td>Assembly, positioning of bent corner and gluing (minimum 1 meter for each assembled corner).</td>
</tr>
</tbody>
</table>

### MONOLITHIC EXTERNAL CORNER WITH VARIABLE CORNER

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>GL06</td>
<td>Only corner cut with external edge of the panel in section. Min. 1 lm (note that the not assembled material can be irregular).</td>
</tr>
<tr>
<td>GL32</td>
<td>Assembly, positioning of bent corner and gluing (minimum 1 meter for each assembled corner).</td>
</tr>
</tbody>
</table>

Two edge working, assembly and positioning of bent corner, standard gluing and chamfer of the edge (min. 1 lm per single assembled corner).
### Panel Cutting

<table>
<thead>
<tr>
<th>Description</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cut / squaring same format quantity more than 30 sqm.</td>
<td>GL01</td>
</tr>
<tr>
<td>Cut / squaring same size quantity below 30 sqm</td>
<td>GL01</td>
</tr>
<tr>
<td>Out of square cut of trapezes, triangles, parallelograms (min. 1 sqm per single format based on the circumscribed rectangle)</td>
<td>GL02</td>
</tr>
<tr>
<td>Shaped cut of special and round shapes (minimum 1 sqm per single format for the circumscribed rectangle)</td>
<td>GL03</td>
</tr>
</tbody>
</table>

### Passing Holes

<table>
<thead>
<tr>
<th>Description</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Raw holes Ø05-30-35-40 mm. More than Ø40 look at the passing slots.</td>
<td>GL20</td>
</tr>
<tr>
<td>Raw edge slots (simple geometrical shapes. Min. perimetral 1 lm). For slots bigger then 1 perimetral lm look at the shaped slots.</td>
<td>GL21</td>
</tr>
<tr>
<td>Perimetral internal shapes slot (special geometrical shapes).</td>
<td>GL22</td>
</tr>
</tbody>
</table>

### Monolithic External Corner

#### 90° Monolithic External Corner

<table>
<thead>
<tr>
<th>Description</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Only corner cut with external edge of the panel in section. Min. 1 lm (note that the not assembled material can be irregular).</td>
<td>GL05</td>
</tr>
<tr>
<td>Assembly, positioning of bent corner and gluing (minimum 1 meter for each assembled corner).</td>
<td>GL30</td>
</tr>
</tbody>
</table>

Two edge working, assembly and positioning of bent corner, standard gluing and chamfer of the edge (min. 1 lm per single assembled corner).

<table>
<thead>
<tr>
<th>Description</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Only corner cut external edge of the panel in section.</td>
<td>GL06</td>
</tr>
<tr>
<td>Assembly and positioning of bent corner, standard gluing and chamfering of the edge (min. 1 lm per single assembled corner).</td>
<td>GL32</td>
</tr>
</tbody>
</table>

Two edge working, assembly and positioning of bent corner, standard gluing and chamfer of the edge (min. 1 lm per single assembled corner).
### GAMMASTONE GRES AIR, NATURAL AIR, GFRC PLUS AIR, MOSAIC AIR AND BRICK AIR manufacturing techniques

#### CUT IN SECTION

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>GL04</td>
<td>45° cut of the panel in section.</td>
</tr>
<tr>
<td>GL25</td>
<td>Chamfer (min. 1 lm per single size).</td>
</tr>
</tbody>
</table>

#### MONOLITHIC INTERNAL CORNER WITH VARIABLE CORNER

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>GL07</td>
<td>Only corner cut internal edge of the panel in section. Min. 1 lm (the material not assembled can have some imperfection in the visible edge).</td>
</tr>
<tr>
<td>GL33</td>
<td>Assembly, bent corner positioning and external corner chamfer (min. 1 lm per single assembled corner).</td>
</tr>
</tbody>
</table>

Two edge working, assembly and positioning of bent corner, standard gluing and chamfer of the edge (min. 1 lm per single assembled corner).

#### MONOLITHIC INTERNAL CORNER

Positioning of bent corner and gluing (min. 1 lm per single assembled corner).

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>GL31</td>
<td>Positioning of bent corner and gluing (min. 1 lm per single assembled corner).</td>
</tr>
</tbody>
</table>

#### EDGE PAINTING

Visible edges in the same color of the panel finishing (min. 1 lm per single format).

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>GL40</td>
<td>Visible edges in the same color of the panel finishing (min. 1 lm per single format).</td>
</tr>
</tbody>
</table>

#### SURFACE TREATMENT

Treatment of the GammaStone AIR panel surface.

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>GL50</td>
<td>Treatment of the GammaStone AIR panel surface.</td>
</tr>
</tbody>
</table>
SERVICES

Student Residence VITA
New Castle - UK
Building Information Modeling (BIM) Services

Gammastone is on the forefront of building facade engineering application of BIM software, allowing our clients to comply with current project BIM requirements. Gammastone’s application of BIM includes clash detection between facade elements and surrounding construction, and overall coordination between the structure and other trades. We can also translate the 3D facade system detailing into part fabrication drawings for manufacturing applications. We are adding BIM object/models of GammaStone panels in the following BIM “cloud” libraries and portals:

- Researches and samples natural stone from worldwide quarries
- Evaluates stone quarry and fabricator capabilities
- Develops budget pricing for material acquisition and cladding installation
- Establishes preconstruction stone testing and observation protocol
- Suggests value enhancing stone material alternatives and technical detailing options
- Observes stand-up slab mockup, and coordinate record samples
- Coordinates full-scale pre-fabrication visual mockup at stone fabrication facility
- Reviews contract drawings, shop drawings and calculations
- Performs subcontractor design peer reviews
- Observes material fabrication for aesthetic and structural conformance
- Establishes production stone testing protocol, and effective testing
- Reviews and comments on field workmanship mockup
- Observes stone cladding installation on project site for conformance with design requirements
The design of a cladding system of a new building whether it may be ventilated, micro-ventilated etc. is a complex procedure. It requires industrial planning criteria which should be considered and defined before beginning the realization in order to avoid substantial and / or unforeseen changes during the various stages of the manufacturing process. GammaStone is able to develop projects considering the different modules of the façade: jointless architectural elements made or facade components like openings, string courses or other non-modular elements. These elements are usually needed during renovations. GammaStone technical department elaborates customized executive drawings in order optimize the number of cuts on the slab, to obtain faultless aesthetics in the combination of the formats avoiding wastage of valuable materials.

GammaStone Technical department consists of a team of architects and engineers aimed to develop projects following all the phase of the design process:
1. Acknowledgement of the projects and / or the architectural concept for the cladding system of the building;
2. Feasibility assessment;
3. Identification of the materials of the perimetric wall to be covered;
4. Definition of the structural plan and the respective general calculations;
5. Implementation of the projects executive drawings.

GAMMASTONE OFFERS THE FOLLOWING INTEGRATED DESIGN SERVICES:
- Development of construction drawings
- Development of Records
- Mounting plan
- Dimensioning of the panels
- Calculations of the joint
- Optimization of scraps according to the dimensions of the slabs.
- BOM Processing
- Static analysis
- Packing list processing
GammaStone has developed its own web application to map the façade by a self-explanatory computation of the GammaStone panels and of the monolithic elements that compose it. This computation allows to customize a project and associate it with every single customer. This project contains all the information of technical and commercial aspects that will determine the Bill of Materials, the production process, the relative total cost and the cost for every piece and specific manufacturing technique applied.

THE INSERTION PROCEDURE COMPRIS FOR THE FOLLOWING MACRO PHASES:
1) Inserting a new project associated with the customer, the site and the material;
2) Technical computation with easy logical insertion of flat panels and assembled components with monolithic corners, with any additional manufacturing technique required;
3) Verification of the total and specific costs of the project through a screen visualization of the project report.
4) Commercial release of the quote / order resulted from the performed compilation.

Thanks to this application the customer has a clear and detailed overview of all the layers and of all the GammaStone AIR materials used in the project.
Gammastone has developed an exceptional working relationship with many architectural firms across around the world. Based on our reputation for experience and expertise in exterior building facade systems, Owners and Architects routinely engage Gammastone early in the design of a project. This collaboration from the start of the design process helps eliminate problems before they become issues in construction.

The static calculations consider a uniformly distributed unit load (weight, pressure and depression). The loads used for the different sizing procedures are evaluated using the principle of superposition (linear-elastic calculation). The procedures for designing all the elements of the facade are conforms to the following combinations considering the most significant stresses (wind load, own weight, load from ice formations, seismic load).

Note: the design of the facade elements will be provided for the combination of the most relevant load. Details relating to the design of the shelves, to the fastening of the bracket to the base material and fixing of the profile to the bracket are shown in separate documents (statics of the system).
Our technical department develops the drawings for each project related to the installation plans or tables of laying, starting from the design, along with the production and the packaging. The different phases meet the same criteria and follow the priorities to the final assembly stage. Each piece is accompanied by the technical details and the identification codes associated with the schedule of the entire project.
Installing the GammaStone façades is extremely simple and safe. Thanks to the collaboration of leading companies in the production of anchorage systems that are already of well-known and tested anchorage systems. The fitter is equipped with all specific indications for installation. Thanks also to the extremely reduced weight of the panels, installing is easier than with other ventilated façade solutions.
GammaStone AIR panels have passed the two most severe international tests required by the strict American (NFPA 285) and English (BS8414-1) standards on fire. GammaStone’s commitment to supplying high quality, fully tested ventilated & drained rain screen systems in the US moves forward with the recent passing of NFPA 285, a strict American test complying with fire regulation of exterior panels installed on building facades. This confirms the beauty of Natural Stone and many other materials offered by GammaStone can be installed on building facades safely with no restrictions. The BS8414-1 test is by far the most severe in the world made on panels for cladding buildings. Our material was installed on a concrete structure using the aluminum anchoring system of ventilated facades. The surface of over 30sqm, which reached 8.5m in height, was subjected to the flames emitted by a 2m combustion chamber obtained at the base of the wall itself. The “fire test” lasts a total of 60 minutes, of which the first 30 of direct exposure to the flame. This test is considered fundamental for the use of building materials in UK, Middle East, Australia and New Zealand.

1) Basement
2) Hanger
3) Insulation
4) Ventilation
5) GammaStone AIR
6) Horiz. Profile
ALL PANELS ARE TESTED BY INTERTEK

ABOUT INTERTEK

Intertek Total Quality Assurance expertise, delivered consistently with precision, pace and passion, enabling our customers to power ahead safely. We go beyond testing, inspecting and certifying products; we are a Total Quality Assurance provider to industries worldwide. Through our global network of state-of-the-art facilities and industry-leading technical expertise we provide innovative and bespoke Assurance, Testing, Inspection and Certification services to customers. We provide a systemic approach to supporting our customers’ Quality Assurance efforts in each of the areas of their operations including R&D, raw materials sourcing, components suppliers, manufacturing, transportation, distribution and retail channels, and consumer management. Intertek is an industry leader with more than 44,000 employees in 1,000 locations in over 100 countries. We deliver Total Quality Assurance expertise 24 hours a day, 7 days a week with our industry-winning processes and customer-centric culture. Whether your business is local or global, we can help to ensure that your products meet quality, health, environmental, safety, and social accountability standards for virtually any market around the world. We hold extensive global accreditations, recognitions, and agreements, and our knowledge of and expertise in overcoming regulatory, market, and supply chain hurdles is unrivalled.

Intertek can sharpen your competitive edge
• With reliable testing and certification for faster regulatory approval
• Through rapid, efficient entry to virtually any market in the world
• With Total Quality Assurance across your supply chain
• Through innovative leadership in meeting social accountability standards
• By reducing cost and minimizing health, safety, and security risks
• By becoming a TRUSTED BRAND

For more than 130 years, companies around the world have depended on Intertek to help ensure the quality and safety of their products, processes and systems.
WE HAVE OBTAINED THE RINA CERTIFICATION

GammaStone AIR panels fully meet the requirements of the IMO FTP CODE 2010. The purpose of the test was to determine the flammability of the material under examination and to determine its calorific value, fully demonstrating that the GammaStone AIR panels comply with the increasingly stringent regulations of the naval field.

Specifically, THE ULTRALIGHT GAMMASTONE AIR PANELS CAN BE USED FOR INTERIOR CLADDING AND FINISHING MATERIAL FOR DIVIDING WALLS AND CeILINGS, RAISED FLOORS, CABINS, CORRIDORS, HALLS. The large selection of marble, granite, travertine, stone and many other prestigious materials and above all the various processes permitted, help us satisfy the most sophisticated needs of the project and allow the placement of our GAMMASTONE AIR panels on LUXURY YACHTS AND CRUISE SHIPS enhancing the furnishing elements. GammaStone is once again an unrivalled choice of style and elegance.

GammaStone AIR has obtained the rigorous Rina naval certification for the installation on ships of ultralight and large format GammaStone AIR panels. The untiring commitment and dedication to the creation of the highest quality products has allowed GammaStone to obtain the RINA IMO MED certification.
PARTNERS

GammaStone GRES AIR by GammaStone is Winner of the 2018 edition of the Archiproducts Design Awards, in the Components and materials category! A snapshot of the excellences of international design, the ADA spotlight the most virtuous cooperations between brands and designers, and the innovations of their products as well, celebrating the successful results that today are writing new chapters in the history of architecture and design.

It was awarded because of: technical quality and functionality, operability and sustainability and ecological quality.

GammaStone is a member of UNICMI (National Union of Industries of the Metalworks, Envelope and windows) whose aim is to represent the interests of Italian industrial sectors of the building envelope and metalworks to all institutions, and to promote its products on the market.

All GammaStone products are certified, through rigorous tests at the special test stations of Istituto Giordano, technical institute for product test, certification, research, design and training with awards and ministerial authorizations. Our systems have obtained multiple certifications including corrosion resistance, acoustic insulation, wind resistance (pressure and depression), impact, thermal and fire resistance and so on.

GammaStone products are manufactured in compliance with the strict requirements of EOTA (European Organisation for Technical Approvals) primary organization for the technical evaluation of construction products.

The company is certified ISO 9001 by IMQ, the most important Italian certification institution, leader in Europe in evaluation of Compliance (safety, quality, sustainability) in Italy and abroad, distinctive element of the Made in Italy production.

GammaStone AIR panels are designed in collaboration with the CNR National Research Centre. It is the largest public research institute with high competence technical scientific, supervised by the Minister Education, University and Research (MIUR) that valuate the Research and implementation of their results for the technological development of our country.

GammaStone panels are selected for their originality, innovation and functionality by ADI, GammaStone obtained important awards for the protection of the Intellectual property.

GammaStone panels are certified at international level by BBA, leader of certification bodies in the construction sector in Great Britain, ensuring high safety and reliability.

GammaStone panels are selected for their originality, innovation and functionality by ADI, GammaStone obtained important awards for the protection of the Intellectual property.
The tests refer to a GammaStone AIR Gres panel with 3 mm thick ceramic tile. Certificates complete can be found on the web site www.gammastone.com.

<table>
<thead>
<tr>
<th>TEST</th>
<th>DESCRIPTION</th>
<th>RESULT</th>
</tr>
</thead>
<tbody>
<tr>
<td>UNI EN ISO 10545-3:2000</td>
<td>Determination of water absorption</td>
<td>0.9%</td>
</tr>
<tr>
<td>UNI EN 12089-2013</td>
<td>Determination of bending behaviour</td>
<td>27772 kPa</td>
</tr>
<tr>
<td>UNI EN ISO 10545-12:2000</td>
<td>Determination of frost resistance</td>
<td>No fault</td>
</tr>
<tr>
<td>UNI EN 12964:2002</td>
<td>Thermal resistance</td>
<td>0.237 m² K/W</td>
</tr>
<tr>
<td>UNI 9177:2008</td>
<td>Reaction to fire</td>
<td>Classe 1</td>
</tr>
<tr>
<td>UNI 13001-1:2009</td>
<td>Fire classification</td>
<td>B - s1, d0</td>
</tr>
<tr>
<td>UNI 9174:2010</td>
<td></td>
<td></td>
</tr>
<tr>
<td>UNI EN ISO 10545-9:2013</td>
<td>Determination of moisture movement</td>
<td>0.0 mm/m</td>
</tr>
<tr>
<td>UNI EN 826:2013</td>
<td>Determination of compression behaviour</td>
<td>1377 kPa</td>
</tr>
<tr>
<td>UNI EN ISO 9142:2004</td>
<td>Accelerated aging</td>
<td>No fault</td>
</tr>
<tr>
<td>UNI EN ISO 9227:2012</td>
<td>Resistance in Neutral Salt Spray NSS</td>
<td>No fault</td>
</tr>
<tr>
<td>UNI EN ISO 10545-9:2013</td>
<td>Thermal shock resistance</td>
<td>No fault</td>
</tr>
<tr>
<td>UNI EN 772-14:2003</td>
<td>Impact resistance</td>
<td>No damage</td>
</tr>
<tr>
<td>UNI EN 14018:2004</td>
<td>Heat-Rain 80 cycles and Heat-Cold 5 cycles resistance</td>
<td>No fault</td>
</tr>
<tr>
<td>ETAG 034-1:2012</td>
<td>Standard Test Method for Flatwise Tensile Strength</td>
<td>1.37 ± 0.05 MPa</td>
</tr>
<tr>
<td>NFPA 285</td>
<td>Fire test</td>
<td>Passed</td>
</tr>
<tr>
<td>BS8414-1</td>
<td>Fire test</td>
<td>Passed</td>
</tr>
<tr>
<td>MED 2014/90/EU</td>
<td>Determination of calorific value</td>
<td>Passed</td>
</tr>
<tr>
<td>MED 2014/90/EU</td>
<td>Determination of the limited ability to propagate the flame</td>
<td>Passed</td>
</tr>
</tbody>
</table>
## TECHNICAL DATA SHEET

### GAMMASTONE NATURAL AIR

<table>
<thead>
<tr>
<th>TEST</th>
<th>DESCRIPTION</th>
<th>RESULT</th>
</tr>
</thead>
<tbody>
<tr>
<td>ETAG 004:2013</td>
<td>Heat-Rain 80 cycles</td>
<td>No fault</td>
</tr>
<tr>
<td>ETAG 004:2013</td>
<td>Heat-Cold 5 cycles</td>
<td>No fault</td>
</tr>
<tr>
<td>UNI EN ISO 10545-8:2014</td>
<td>Determination of linear thermal expansion</td>
<td>6.6°&lt;br&gt;(&lt;0.3 mm/600 mm)</td>
</tr>
<tr>
<td>UNI EN 772-14:2003</td>
<td>Determination of moisture movement</td>
<td>0.4 mm/m</td>
</tr>
<tr>
<td>UNI 9177:2008, UNI 8462:2010, UNI 9174:2010</td>
<td>Reaction to fire</td>
<td>Classe 1</td>
</tr>
<tr>
<td>UNI EN ISO 10545-4:2012</td>
<td>Determination of modulus of rupture and breaking strength</td>
<td>2.8 ± 0.3 N/mm²</td>
</tr>
<tr>
<td>UNI EN ISO 10545-4:2012</td>
<td>Breaking strength Heat-Rain 80 cycles + Heat-Cold 5 cycles</td>
<td>5.0 ± 0.5 N/mm²</td>
</tr>
<tr>
<td>Rif. Test Certimac POI</td>
<td>Determination of bond strength by pull-off</td>
<td>1.15 ± 0.26 N/mm²</td>
</tr>
<tr>
<td>Rif. Test Certimac POI</td>
<td>Bond strength after Heat-Rain 80 cycles + Heat-Cold 5 cycles</td>
<td>1.01 ± 0.31 N/mm²</td>
</tr>
<tr>
<td>Rif. Test Certimac POI</td>
<td>Limit of detachment after water immersion (21 days)</td>
<td>0.27 ± 0.17 N/mm²</td>
</tr>
<tr>
<td>UNI EN ISO 10545-3:2000</td>
<td>Determination of water absorption</td>
<td>6%*</td>
</tr>
<tr>
<td>UNI EN ISO 10545-9:2013</td>
<td>Determination of resistance to thermal shock</td>
<td>No fault</td>
</tr>
<tr>
<td>UNI EN ISO 10545-12:2000</td>
<td>Determination of frost resistance</td>
<td>No fault</td>
</tr>
<tr>
<td>ETAG 034-1:2012</td>
<td>Wind depression load resistance</td>
<td>4610 Pa</td>
</tr>
<tr>
<td>UNI EN 12964:2002</td>
<td>Determination of thermal conductivity</td>
<td>0.157 ± 0.170 W/mK</td>
</tr>
<tr>
<td>ASTM E 84 (UL 722)</td>
<td>Surface burning characteristics</td>
<td>Class A</td>
</tr>
</tbody>
</table>

### TEST DESCRIPTION | RESULT

- **ETAG E 136**: Behavior of materials at 750°C (1382°F)<br>Non-combustible
- **CAN/ULC-S114, ASTM E1530:2006**: Test for Non-Combustibility<br>Non-combustible
- **ASTM C257/C297M-16**: Standard Test Method for Flatwise Tensile Strength<br>1.37 ± 0.05 MPa
- **NFPA 285**: Fire test<br>Passed
- **BS8414-1**: Fire test<br>Passed
- **MED 2014/90/EU**: Determination of the limited ability to propagate the flame<br>Passed
- **ASTM C393/C393M-16**: Core Shear Properties (Negative Windload - Machine Direction)<br>102.4 psi<br>Core Shear Properties (Positive Windload)<br>18.7 psi<br>Core Shear Properties (Negative Windload - Crosswise Direction)<br>100.2 psi
- **ASTM C272/C272M-18**: Water Absorption of Core Materials<br>6.143 lbm/ft³
- **ASTM C297/C297M-16**: Flatwise Tensile Bond Strength Evaluation (Fiberglass Mesh)<br>359 psi<br>Flatwise Tensile Bond Strength Evaluation (Foam Core)<br>190 psi<br>Flatwise Tensile Bond Strength Evaluation (Steel)<br>57.6 psi
- **ASTM C880/C880M-18**: Flexural Strength Evaluation (Negative Windload - Dry Condition)<br>Initial Failure<br>1,043 psi<br>Ultimate Failure<br>2,932 psi<br>Flexural Strength Evaluation (Positive Windload - Dry Condition)<br>2,787 psi<br>Flexural Strength Evaluation (Negative Windload - Wet Condition)<br>891 psi<br>Flexural Strength Evaluation (Positive Windload - Wet Condition)<br>2,903 psi
- **ASTM C482-02**: Bond Strength Mitered Corner Joint Assembly Shear Loading Evaluation<br>992.4 lbf<br>Ignitability 0<br>Spread of flame 0<br>Heat Evolved 0<br>Smoke developed 0-1

* It depends on the type of natural stone, the lower value refers to the Travertine, the highest value is for Sandstone.

The results are based on tests made on a GammaStone Natural AIR panel in natural untreated stone type Sandstone saw finishing.

Certificates complete can be found on the web site [www.gammastone.com](http://www.gammastone.com).
The results are based on tests made on a GammaStone Glass AIR panel in enameled, tempered, black glass thick 6 mm. Certificates complete can be found on the web site [www.gammastone.com](http://www.gammastone.com).

<table>
<thead>
<tr>
<th>TEST</th>
<th>DESCRIPTION</th>
<th>RESULT</th>
</tr>
</thead>
<tbody>
<tr>
<td>UNI EN 12695:2013</td>
<td>Determination of bending behaviour</td>
<td>84053 kPa</td>
</tr>
<tr>
<td>UNI EN 13049:2004</td>
<td>Determination of impact strength</td>
<td>No damage</td>
</tr>
<tr>
<td>UNI EN 9177:2008 and UNI 9174:2010</td>
<td>Reaction to fire</td>
<td>Classe 1</td>
</tr>
<tr>
<td>UNI EN 13501-1:2009</td>
<td>Fire classification - glass side</td>
<td>B - s2, d0</td>
</tr>
<tr>
<td>UNI EN 13501-1:2009 and UNI EN ISO 11925-2:2005</td>
<td>Fire classification - steel side</td>
<td>B - s1, d0</td>
</tr>
<tr>
<td>UNI EN 826:2013</td>
<td>Determination of compression behaviour</td>
<td>2135 kPa</td>
</tr>
<tr>
<td>ETAG 004:2013</td>
<td>Heat-Rain 80 cycles and Heat-Cold 5 cycles</td>
<td>No fault</td>
</tr>
<tr>
<td>UNI EN ISO 10545-8:2014</td>
<td>Determination of linear thermal expansion</td>
<td>4.2 (&lt;0.2 \text{mm/600 mm})</td>
</tr>
<tr>
<td>UNI EN 772-14:2003</td>
<td>Determination of moisture movement</td>
<td>0.0 mm/m</td>
</tr>
<tr>
<td>UNI EN ISO 10545-4:2012</td>
<td>Determination of modulus of rupture and breaking strength</td>
<td>23.2 ± 0.9 N/mm²</td>
</tr>
<tr>
<td>UNI EN ISO 10545-4:2012</td>
<td>Breaking strength Heat-Rain 80 cycles + Heat-Cold 5 cycles</td>
<td>23.2 ± 0.9 N/mm²</td>
</tr>
<tr>
<td>Rif. Test Certimac POI</td>
<td>Determination of bond strength by pull-off</td>
<td>1.56 ± 0.19 N/mm²</td>
</tr>
<tr>
<td>Rif. Test Certimac POI</td>
<td>Bond strength by pull-off results – sample “after immersion” (21 days)</td>
<td>1.24 ± 0.28 N/mm²</td>
</tr>
<tr>
<td>UNI EN ISO 10545-3:2000</td>
<td>Determination of water absorption</td>
<td>0.2%</td>
</tr>
<tr>
<td>UNI EN ISO 10545-9:2013</td>
<td>Determination of resistance to thermal shock</td>
<td>No fault</td>
</tr>
<tr>
<td>UNI EN ISO 10545-12:2000</td>
<td>Determination of frost resistance</td>
<td>No fault</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TEST</th>
<th>DESCRIPTION</th>
<th>RESULT</th>
</tr>
</thead>
<tbody>
<tr>
<td>ETAG 034-1:2012</td>
<td>Wind depression load resistance</td>
<td>4610 Pa</td>
</tr>
<tr>
<td>UNI EN 12664:2002</td>
<td>Determination of thermal conductivity</td>
<td>0.118 ± 0.123 W/mK</td>
</tr>
<tr>
<td>ASTM E 84 (UL 723)</td>
<td>Surface burning characteristics</td>
<td>Class A</td>
</tr>
<tr>
<td>ASTM E 135</td>
<td>Behavior of materials at 750°C (1382°F)</td>
<td>Non-combustible</td>
</tr>
<tr>
<td>CAN/ULC-S114 ASTM E1530:2006</td>
<td>Test for Non-Combustibility</td>
<td>Non-combustible</td>
</tr>
<tr>
<td>ASTM C207/C207M - 16</td>
<td>Standard Test Method for Flatwise Tensile Strength</td>
<td>1.37 ± 0.05 MPa</td>
</tr>
<tr>
<td>NFPA 285</td>
<td>Fire test</td>
<td>Passed</td>
</tr>
<tr>
<td>BS 8414-1</td>
<td>Fire test</td>
<td>Passed</td>
</tr>
<tr>
<td>MED 2014/90/EU</td>
<td>Determination of calorific value</td>
<td>Passed</td>
</tr>
<tr>
<td>MED 2014/90/EU</td>
<td>Determination of the limited ability to propagate the flame</td>
<td>Passed</td>
</tr>
</tbody>
</table>
**TECHNICAL DATA SHEET**

**GAMMASTONE GFRC PLUS AIR**

<table>
<thead>
<tr>
<th>TEST</th>
<th>DESCRIPTION</th>
<th>RESULT</th>
</tr>
</thead>
<tbody>
<tr>
<td>UNI EN ISO 10545-3:2000</td>
<td>Determination of water absorption</td>
<td>7.2%</td>
</tr>
<tr>
<td>UNI EN ISO 10545-8:2014</td>
<td>Determination of linear thermal expansion</td>
<td>1.6</td>
</tr>
<tr>
<td>UNI 772-14:2003</td>
<td>Determination of moisture movement</td>
<td>0.04 ÷ 0.13 mm/m</td>
</tr>
<tr>
<td>UNI EN ISO 10545-4:2012</td>
<td>Determination of the breaking strength</td>
<td>4.3 ÷ 6.2 N/mm²</td>
</tr>
<tr>
<td>UNI EN 12467:2016</td>
<td>Determination of moisture movement</td>
<td>0.04 ÷ 0.13 mm/m</td>
</tr>
<tr>
<td>UNI EN 12089:2013</td>
<td>Determination of bending behaviour</td>
<td>4160 ÷ 5867 kPa</td>
</tr>
<tr>
<td>UNI EN 12467:2016</td>
<td>Determination of frost/frost resistance</td>
<td>No fault</td>
</tr>
<tr>
<td>UNI EN 12467:2016</td>
<td>Determination of water absorption</td>
<td>Absence of water</td>
</tr>
<tr>
<td>UNI EN ISO 10545-9:2013</td>
<td>Determination of resistance to thermal shock</td>
<td>No fault</td>
</tr>
<tr>
<td>UNI 9177:2008</td>
<td>Reaction to fire</td>
<td>Classe 1</td>
</tr>
<tr>
<td>UNI 8457:2010</td>
<td>Fire classification</td>
<td>B - s1, d0</td>
</tr>
<tr>
<td>UNI EN 13901-1:2003</td>
<td>Fire classification</td>
<td>B - s1, d0</td>
</tr>
<tr>
<td>UNI EN 13823:2010</td>
<td>Fire classification</td>
<td>B - s1, d0</td>
</tr>
<tr>
<td>UNI EN ISO 11055-2:2005</td>
<td>Fire classification</td>
<td>B - s1, d0</td>
</tr>
<tr>
<td>ETAG 014-2:2012</td>
<td>Wind depression load resistance</td>
<td>4610 Pa</td>
</tr>
<tr>
<td>ASTM E 84 (UL 723)</td>
<td>Surface burning characteristics</td>
<td>Class A</td>
</tr>
<tr>
<td>ASTM E 136</td>
<td>Behavior of materials at 750°C (1382°F)</td>
<td>Non-combustible</td>
</tr>
<tr>
<td>CAN/ULC-S114 ASTM E1530:2008</td>
<td>Test for Non-Combustibility</td>
<td>Non-combustible</td>
</tr>
<tr>
<td>ASTM C297/C297M - 16</td>
<td>Standard Test Method for Flatwise Tensile Strength</td>
<td>1.37 ± 0.05 MPa</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TEST</th>
<th>DESCRIPTION</th>
<th>RESULT</th>
</tr>
</thead>
<tbody>
<tr>
<td>NFPA 285</td>
<td>Fire test</td>
<td>Passed</td>
</tr>
<tr>
<td>BS8414-1</td>
<td>Fire test</td>
<td>Passed</td>
</tr>
<tr>
<td>MED 2014/00/EU</td>
<td>Determination of calorific value</td>
<td>Passed</td>
</tr>
<tr>
<td>MED 2014/00/EU</td>
<td>Determination of the limited ability to propagate the flama</td>
<td>Passed</td>
</tr>
</tbody>
</table>

Certificates complete can be found on the web site [www.gammastone.com](http://www.gammastone.com)
TECHNICAL DATA SHEET
GAMMASTONE MOSAIC AIR

<table>
<thead>
<tr>
<th>TEST</th>
<th>DESCRIPTION</th>
<th>RESULT</th>
</tr>
</thead>
<tbody>
<tr>
<td>UNI EN 12089:2013</td>
<td>Determination of bending behaviour</td>
<td>84053 kPa</td>
</tr>
<tr>
<td>UNI EN 13040:2004</td>
<td>Determination of impact strength</td>
<td>No damage</td>
</tr>
<tr>
<td>UNI 9177:2005</td>
<td>Reaction to fire</td>
<td>Classe 1</td>
</tr>
<tr>
<td>UNI 9174:2010</td>
<td>Fire classification - glass side</td>
<td>B - s2, d0</td>
</tr>
<tr>
<td>UNI EN ISO 11605:2:2005</td>
<td>Fire classification - steel side</td>
<td>B - s1, d0</td>
</tr>
<tr>
<td>UNI EN 826:2013</td>
<td>Determination of compression behaviour</td>
<td>2135 kPa</td>
</tr>
<tr>
<td>ETAG 004:2013</td>
<td>Heat-Rain 80 cycles and Heat-Cold 5 cycles</td>
<td>No fault</td>
</tr>
<tr>
<td>UNI EN ISO 10545-8:2014</td>
<td>Determination of linear thermal expansion</td>
<td>4.2 (&lt;0.2 mm/600 mm)</td>
</tr>
<tr>
<td>UNI EN 772-14:2003</td>
<td>Determination of moisture movement</td>
<td>0.0 mm/m</td>
</tr>
<tr>
<td>UNI EN ISO 10545-4:2012</td>
<td>Determination of modulus of rupture and breaking strength</td>
<td>23.2 ± 0.9 N/mm²</td>
</tr>
<tr>
<td>UNI EN ISO 10545-4:2012</td>
<td>Breaking strength Heat-Rain 80 cycles + Heat-Cold 5 cycles</td>
<td>23.2 ± 0.9 N/mm²</td>
</tr>
<tr>
<td>Rif. Test Certimac POI</td>
<td>Determination of bond strength by pull-off</td>
<td>1.56 ± 0.19 N/mm²</td>
</tr>
<tr>
<td>Rif. Test Certimac POI</td>
<td>Bond strength by pull-off results – sample “after immersion” (21 days)</td>
<td>1.24 ± 0.28 N/mm²</td>
</tr>
<tr>
<td>UNI EN ISO 10545-3:2000</td>
<td>Determination of water absorption</td>
<td>0.2%</td>
</tr>
<tr>
<td>UNI EN ISO 10545-9:2013</td>
<td>Determination of resistance to thermal shock</td>
<td>No fault</td>
</tr>
<tr>
<td>UNI EN ISO 10545-12:2000</td>
<td>Determination of frost resistance</td>
<td>No fault</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TEST</th>
<th>DESCRIPTION</th>
<th>RESULT</th>
</tr>
</thead>
<tbody>
<tr>
<td>ETAG 034:1:2012</td>
<td>Wind depression load resistance</td>
<td>4610 Pa</td>
</tr>
<tr>
<td>UNI EN 12664:2002</td>
<td>Determination of thermal conductivity</td>
<td>0.118 ± 0.123 W/mK</td>
</tr>
<tr>
<td>ASTM E 94 [UL 723]</td>
<td>Surface burning characteristics</td>
<td>Class A</td>
</tr>
<tr>
<td>ASTM E 136</td>
<td>Behavior of materials at 750°C (1382°F)</td>
<td>Non-combustible</td>
</tr>
<tr>
<td>CAN/ULC-S114 ASTM E1530:2008</td>
<td>Test for Non-Combustibility</td>
<td>Non-combustible</td>
</tr>
<tr>
<td>ASTM C297/C297M - 16</td>
<td>Standard Test Method for Flatwise Tensile Strength</td>
<td>1.37 ± 0.05 MPa</td>
</tr>
<tr>
<td>NFPA 285</td>
<td>Fire test</td>
<td>Passed</td>
</tr>
<tr>
<td>BS8414-1</td>
<td>Fire test</td>
<td>Passed</td>
</tr>
<tr>
<td>MED 2014/90/EU</td>
<td>Determination of calorific value</td>
<td>Passed</td>
</tr>
<tr>
<td>MED 2014/90/EU</td>
<td>Determination of the limited ability to propagate the flame</td>
<td>Passed</td>
</tr>
</tbody>
</table>

The results are based on tests made on a GammaStone Glass AIR panel in enameled, tempered, black glass thick 6 mm. Certificates complete can be found on the web site www.gammastone.com.
## TECHNICAL DATA SHEET

### GAMMASTONE BRICK AIR

<table>
<thead>
<tr>
<th>TEST</th>
<th>DESCRIPTION</th>
<th>RESULT</th>
</tr>
</thead>
<tbody>
<tr>
<td>UNI EN ISO 10545-3:2000</td>
<td>Determination of water absorption</td>
<td>0.9%</td>
</tr>
<tr>
<td>UNI EN 12085-2013</td>
<td>Determination of bending behaviour</td>
<td>27772 kPa</td>
</tr>
<tr>
<td>UNI EN ISO 10545-12:2000</td>
<td>Determination of frost resistance</td>
<td>No fault</td>
</tr>
<tr>
<td>UNI EN 12664:2002</td>
<td>Thermal resistance</td>
<td>0.237 m² K/W</td>
</tr>
<tr>
<td>UNI 9177:2008</td>
<td>Reaction to fire</td>
<td>Classe 1</td>
</tr>
<tr>
<td>UNI EN 13823:2010</td>
<td>Fire classification</td>
<td>B - s1, d0</td>
</tr>
<tr>
<td>UNI EN ISO 11092-2:2005</td>
<td>Determination of compression behaviour</td>
<td>1377 kPa</td>
</tr>
<tr>
<td>UNI EN 9142:2004</td>
<td>Accelerated ageing</td>
<td>No fault</td>
</tr>
<tr>
<td>UNI EN ISO 9227:2012</td>
<td>Resistance in Neutral Salt Spray NSS</td>
<td>No fault</td>
</tr>
<tr>
<td>UNI ISO 10545-9:2013</td>
<td>Thermal shock resistance</td>
<td>No fault</td>
</tr>
<tr>
<td>UNI EN 772-14:2003</td>
<td>Determination of moisture movement</td>
<td>0.0 mm/m</td>
</tr>
<tr>
<td>UNI EN 14019:2004</td>
<td>Impact resistance</td>
<td>No damage</td>
</tr>
<tr>
<td>ETAG 034-1:2012</td>
<td>Heat-Rain 80 cycles and Heat-Cold 5 cycles resistance</td>
<td>No fault</td>
</tr>
<tr>
<td>UNI EN ISO 10545-8:2014</td>
<td>Determination of linear thermal expansion</td>
<td>2.1 (&lt;0.1 mm/600 mm)</td>
</tr>
<tr>
<td>UNI EN ISO 10545-4:2012</td>
<td>Determination of the breaking strength</td>
<td>22.9 ± 1.7 N/mm²</td>
</tr>
<tr>
<td>UNI EN ISO 10545-4:2012</td>
<td>Flexural after Heat-Rain 80 cycles + Heat-Cold 5 cycles</td>
<td>23.2 ± 3.0 N/mm²</td>
</tr>
<tr>
<td>Rif. Test Certimac POI</td>
<td>Determination of bond strength by pull-off</td>
<td>1.83 ± 0.20 N/mm²</td>
</tr>
<tr>
<td>Rif. Test Certimac POI</td>
<td>Bond strength after Heat-Rain 80 cycles + Heat-Cold 5 cycles</td>
<td>1.42 ± 0.25 N/mm²</td>
</tr>
<tr>
<td>Rif. Test Certimac POI</td>
<td>Bond strength after water immersion (21 days)</td>
<td>1.01 ± 0.27 N/mm²</td>
</tr>
<tr>
<td>ETAG 034-1:2012</td>
<td>Wind depression load resistance</td>
<td>4610 Pa</td>
</tr>
</tbody>
</table>

The tests refer to a GammaStone AIR Gres panel with 3 mm thick ceramic tile. Certificates complete can be found on the web site [www.gammastone.com](http://www.gammastone.com)
At the request of architects, planners, designers we can supply samples of any material: marble, stone, porcelain, glass, realizing monolithic corners or mock-up to reproduce the idea of some details of the project.
Display systems with hidden hook for GammaStone AIR panel

GammaStone Brick AIR Panels and monolithic soffit in GammaStone Natural AIR in roman travertine

GammaStone Gres AIR with slots and holes

At the request of architects, planners, designers we can supply samples of any material: marble, stone, porcelain, glass, realizing monolithic corners or mock-up to reproduce the idea of some details of the project.
The façade cladding has to be made with light-weight panels (type GammaStone AIR or similar) made of an external layer in backlacquered glass slabs thick 4 or 6 mm, a structural core inserted between two fibreglass matings and a stainless steel plate having a thickness of 0.5 mm.

Sizes: panels provided according to the designer’s request with a maximum size of 2000x1500mm.

Thickness: 16 or 18 mm. Weight: 16 or 21 kg/sqm

Glass monolithic corner composed of glass slabs with beveled edges, assembled with mastic, put on the back of a blind L-element and glued with structural silicones.

The panel has to have the minimum performance levels as follows:

UNI EN ISO 10545-3:2000 Determination of water absorbtion 0.2%
UNI 12664-2002 ASTM E1530:2006 Determination of thermal conductivity 0.157 – 0.170 W/mK

GAMMASTONE AIR TECHNOLOGY

CERAMIC PANEL

The façade cladding has to be made with light-weight panels (type GammaStone AIR or similar) made of an external layer in porcelain gres slabs thick 3, 5 or 6 mm, a structural core inserted between two fibreglass matings and a stainless steel plate having a thickness of 0.5 mm.

Sizes: panels provided according to the designer’s request with a maximum size of 2000x1500mm.

Thickness: 16 or 17 or 18 mm. Weight: 14 or 19 or 21 kg/sqm

Porcelain gres monolithic corner composed of porcelain gres with beveled edges, assembled with mastic, put on the back of a blind L-element and glued with structural silicones.

The panel has to have the minimum performance levels as follows:

UNI EN ISO 10545-3:2000 Determination of water absorbtion 6%
UNI 12664-2002 ASTM E1530:2006 Determination of thermal conductivity 2.97 – 3.97 W/mK

UNI EN ISO 10545:2000 Determination of water absorbtion 5%

UNI EN ISO 12467:2013 Determination of bending behavior 84053 kPa

UNI EN 12664:2002 ASTM E1530:2006 Determination of thermal conductivity 0.118 – 0.123 W/mK

ASTM E 136 Behavior of materials at 750°C (1382°F) Non combustible

UNI EN 13501 1:2009 Fire classification B s1, d0

UNI EN 13501 1:2009 Fire classification B s1, d0

UNI EN ISO 10545-3:2000 Determination of water absorbtion 7,2%

Bond strength by pull off results – sample “after immersion” (21 days) 1.7 ± 0.28 N/mm²

UNI EN ISO 10545-4:2012 Determination of linear thermal expansion 2.9 (<0.1 mm/600 mm)

ETAG 014:2013 Wind depression load resistance 4610 Pa

ETAG 004:2013 Heat Rain 80 cycles and Heat Cold 5 cycles  No fault

ASTM E 84 (UL 723) Surface burning characteristics Class A

UNI EN 12089:2013 Determination of bending behaviour 27772 kPa

UNI EN ISO 12664:2002 ASTM E1530:2006 Determination of thermal conductivity 0.157 – 0.170 W/mK

THE FACADE CLADDING IS TO BE MADE WITH LIGHT WEIGHT PANELS (TYPE GAMMASTONE AIR OR SIMILAR) MADE OF AN EXTERNAL LAYER IN BACKLACQUERED GLASS SLABS THICK 4 OR 6 MM, A STRUCTURAL CORE INSERTED BETWEEN TWO FIBREGASS MATINGS AND A STAINLESS STEEL PLATE HAVING A THICKNESS OF 0.5 MM.

SIZES: PANELS PROVIDED ACCORDING TO THE DESIGNER’S REQUEST WITH A MAXIMUM SIZE OF 2000X1500MM.

THICKNESS: 16 OR 18 MM. WEIGHT: 16 OR 21 KG/SQM

GLASS MONOLITHIC CORNER COMPOSED OF GLASS SLABS WITH BEVELED EDGES, ASSEMBLED WITH MASTIC, PUT ON THE BACK OF A BLIND L-ELEMENT AND GLUED WITH STRUCTURAL SILOXES.

THE FACADE CLADDING HAS TO BE MADE WITH LIGHT WEIGHT PANELS (TYPE GAMMASTONE AIR OR SIMILAR) MADE OF AN EXTERNAL LAYER IN HIGH PERFORMANCE CONCRETE RINFORCED WITH ARMOURING METAL FIBRES THICK 5, 10 OR 12 MM, A STRUCTURAL CORE INSERTED BETWEEN TWO FIBREGASS MATINGS AND A STAINLESS STEEL PLATE HAVING A THICKNESS OF 0.5 MM.

SIZES: PANELS PROVIDED ACCORDING TO THE DESIGNER’S REQUEST WITH A MAXIMUM SIZE OF 2000X1500MM.

THICKNESS: 17 OR 22 OR 24 MM. WEIGHT: 18 OR 30 OR 36 KG/SQM

NATURAL STONE PANEL

The façade cladding has to be made with light-weight panels (type GammaStone AIR or similar) made of an external layer in “stone name” slabs thick 5, 10 or 12 mm, a structural core inserted between two fibreglass matings and a stainless steel plate having a thickness of 0.5 mm.

Sizes: panels provided according to the designer’s request with a maximum size of 3200x1500mm.

Thickness: 17 or 22 or 24 mm. Weight: 18 or 30 or 36 kg/sqm

Natural stone monolithic corner composed of stone slabs with beveled edges, assembled with mastic, put on the back of a blind L-element and glued with structural silicones.

The panel has to have the minimum performance levels as follows:

UNI EN ISO 10545-3:2000 Determination of water absorbtion 0.2%
UNI 12664-2002 ASTM E1530:2006 Determination of thermal conductivity 0.157 – 0.170 W/mK

UNI EN ISO 10545-3:2000 Determination of water absorbtion 0.2%
UNI 12664-2002 ASTM E1530:2006 Determination of thermal conductivity 0.157 – 0.170 W/mK

GFRIC PLUS PANEL

The façade cladding has to be made with light-weight panels (type GammaStone AIR or similar) made of an external layer in high-performance concrete reinforced with armouring metal fibres thick 5 mm, a structural core inserted between two fibreglass matings and a stainless steel plate having a thickness of 0.5 mm.

Panel colour: white Ral 9010.

Sizes: panels provided according to the designer’s request with a maximum size of 2000x1500mm.

Thickness: 17 mm. Weight: 14 kg/sqm

Mortar monolithic corner composed of mortar slabs with beveled edges, assembled with mastic, put on the back of a blind L-element and glued with structural silicones.

The facade cladding is to be made with light-weight panels (type GammaStone AIR or similar) made of an external layer in high-performance concrete reinforced with armouring metal fibres thick 5 mm, a structural core inserted between two fibreglass matings and a stainless steel plate having a thickness of 0.5 mm.

Sizes: panels provided according to the designer’s request with a maximum size of 2000x1500mm.

Thickness: 17 mm. Weight: 14 kg/sqm

Mortar monolithic corner composed of mortar slabs with beveled edges, assembled with mastic, put on the back of a blind L-element and glued with structural silicones.
MOSSIC PANEL

The modular cladding has to be made with light-weight panels (type GammaStone AIR or similar) made of an external layer in mosaic slabs colour xxx, thick 4 mm, a structural core inserted between two mosaic glass matings and a stainless steel plate having a thickness of 0.5 mm.

The panel is supplied with epoxy resin colour xxx within the joints.

Size: panels provided according to the designer's request with a maximum size of 3000x1000 mm.

Thickness: 16 mm. Weight: 16 kg/m²

Mosaic monolithic corner composed of mosaic with bevelled edges, assembled with mastic, put on the back of a blend L-element and glued with structural silicon.

The panel has to have the minimum performance levels as follows:

- UNI EN 13049:2004 - Determination of impact strenght - No damage
- EN 6336:2004 - Determination of linear elastic deformation - 4.2 MPa (0.2 mm/200 mm)
- UNI 13501:2010 - Reaction to fire - Class 1
- UNI 13501:2009 - Fire classification glass side - B s1, d0
- UNI 13501:2009 - Fire classification steel side - B s1, d0
- UNI 826:2013 - Determination of compression behaviour - 2350 MPa
- EN 772-4:2000 - Determination of moisture movement - 0 mm/m
- EN 13545:2012 - Determination of modulus of rupture and breaking strength - 23.2 ± 0.9 N/mm²
- EN 13545:2012 - Breaking strength Heat Plan 80 cycles + HeatCold 5 cycles - 23.2 ± 0.9 N/mm²
- Determination of bond strength by pull-off - 1.5 ± 0.19 N/mm²
- Bond strength by pull-off results - sample "after immersion" (21 days) - 1.24 ± 0.28 N/mm²
- EN ISO 10545-2000 - Determination of water absorption - 0.2%
- EN ISO 10545-2013 - Determination of resistance to thermal shock - No fault
- EN ISO 10545-2010 - Determination of frost resistance - No fault
- EN 12089:2013 - Determination of bending behaviour - 27772 kPa
- EN ISO 10545:2012 - Breaking strength Heat Rain 80 cycles + HeatCold 5 cycles - 23.2 ± 0.9 N/mm²
- EN ISO 10545:2012 - Determination of breaking strength - 1.37 ± 0.05 MPa
- UNI EN ISO 10545:2012 - Determination of the breaking strength - 22.9 ± 1.7 N/mm²
- UNI EN ISO 10545:2012 - Determination of linear thermal expansion - 2.1 (<0.1 mm/600 mm)
- UNI EN ISO 10545:2013 - Thermal shock resistance - No fault
- UNI EN 772:2014 - Determination of moisture movement - 0 mm/m
- UNI EN ISO 10545:2012 - Determination of thermal conductivity - 0.118 ± 0.123 W/mK
- ASTM E1530:2006
- ASTM 84 (UL 723) - Surface burning characteristics - Class A
- ASTM E 136 - Behavior of materials at 750°C (1382°F) - Non combustible
- NFPA Fire test Passed
- CAN/ULC S114 - Test for NonCombustibility - Noncombustible
- ASTM C297/C297M-16 Standard - Test Method for Flatwise Tensile Strength - 1.37 ± 0.05 MPa
- UNI EN ISO 10545-4:2012 - Determination of frost resistance - No fault
- UNI EN ISO 10545-9:2013 - Determination of resistance to thermal shock - No fault
- UNI EN 826:2010 - Reaction to fire - Class 1
- BS EN 12089:2013 - Determination of bending behaviour - 27772 kPa
- BS EN 12089:2013 - Determination of moisture movement - 0 mm/m
- BS EN 12089:2013 - Determination of resistance to thermal shock - No fault
- BS EN 12089:2013 - Determination of frost resistance - No fault
- BS EN 12089:2013 - Determination of breaking strength - 1.37 ± 0.05 MPa
- BS EN 12089:2013 - Determination of linear thermal expansion - 2.1 (<0.1 mm/600 mm)
- BS EN 12089:2013 - Determination of thermal shock resistance - No fault
- BS EN 12089:2013 - Determination of moisture movement - 0 mm/m
- UNI EN ISO 10545-9:2013 - Determination of resistance to thermal shock - No fault
- UNI EN ISO 10545-9:2013 - Determination of frost resistance - No fault
- UNI EN ISO 10545-9:2013 - Determination of breaking strength - 1.37 ± 0.05 MPa
- UNI EN ISO 10545-9:2013 - Determination of linear thermal expansion - 2.1 (<0.1 mm/600 mm)
- UNI EN ISO 10545-9:2013 - Determination of thermal shock resistance - No fault
- UNI EN ISO 10545-9:2013 - Determination of moisture movement - 0 mm/m

The GammaStoneAIR ventilated facade with concealed fastening is based on the integrated system between large panels (up to 3x1 m in single panel), insulating board and aluminum structure. The structure consists of profiles and brackets both made from extruded aluminum alloy 6006 in the 6000 series according to UNI EN 573-3:2011, physical condition T6 according to EN 515. When fixing the mullions to the brackets, pay attention to the profile to be fixed in one point only, leaving freedom of movement in the longitudinal direction in addition to the additional hardware to ensure the appropriate spaces needed for the effect of thermal expansion of the aluminum. Take care that the free space of the joint is at least 1.2 x Ømax (in mm). The safety of the whole system must be guaranteed by appropriate checks in accordance with the applicable regulations (Technical Standards for Construction DM 01/14/08 UNI 11018 and January 2003 on "Coatings and anchoring systems for ventilated facades in mechanical assembly. Instructions the design, execution and maintenance."

In particular, the system GammaStoneAIR concealed fastening is characterized by:

1) Glass panel: the panel consists of a glass slab with a thickness of 4 or 6 mm an structural core interposed between two glass fiber plates and a stainless steel sheet having a thickness of 0.5 mm.
2) Natural stone pan: the panel consists of a natural stone slab with a thickness of 10 mm, an structural core interposed between two glass fiber plates and a stainless steel sheet with a thickness of 0.5 mm.
3) Porcelain panel: panel consists of a porcelain plate with a thickness of 3 or 6 mm, an structural core interposed between two glass fiber plates and a stainless steel sheet with a thickness of 0.5 mm.
4) Format: panels are provided in the format required by the designer with a maximum size of 4200x1500mm (glass) 3200x1500 (natural stone) 3200x2000 (porcelain)
5) Substructure: substructure composed by mullions, transoms and brackets all made of extruded aluminum alloy 6063 T6 series, available either in the raw state and with various surface finishes, consisting of:
   - Raw Brackets, "L" shaped, fixed by anchors suitably dimensioned and chosen according to the existing masonry:
   - Isolator placed between aluminum bracket and masonry:
   - Raw "T" Profile (vertical mullion), fastened on the brackets with rivets (large head, steel / aluminum) in respect of "fixed point" and "sliding point", as shown by the annexed tables:
   - Insulating panels, both rigid or soft, thickness according to the project requirement:
   - Slotted horizontal current, fixed to the uprights by means of rivets (large head, steel / aluminum) and shaped so that the stresses due to wind action result axial to the hangers;
   - Aluminum hangers fixed on the GammaStoneAIR panel stainless steel slab with rivets large head, steel / aluminum, and placed according to the geometry shown in the annexed tables.

The panels thus assembled, are hanged on the slotted horizontal guide. This system, by means of millimetric adjusting screws, provides the possibility to obtain varieties joints. The panels will be blocked by the sideways removable locking system.

PART LIST

- Aluminum millimeters, T shaped;
- "L" shaped aluminum brackets;
- Isolator for the fastening of the thermal bridge;
- Anchors suitable for the existing masonry;
- Insulating panel, both rigid or soft, according to the thermal calculations;
- Normalized rivets or self-drilling screws for fixing of mullions, brackets and transoms;
- Horizontal aluminum slotted transoms, with particular section, able to receive interlocking special nonoverturning hangers, fixed to the back face of the panel;
- Regulation hangers, with screws for precision adjustment;
- Simple hangers.
SECTION 074320 – GAMMASTONE AIR (CHOOSE ONE) [STONE], [CERAMIC], [GLASS], [GFRC], [BRICK], [MOSAIC] EXTERIOR COMPOSITE PANELS

PART 1 – GENERAL

1. RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this section.

1.2 SUMMARY

A. Provide all materials and work for this section as indicated on the complete set of drawings and as required for a complete installation. Note that any component listing is primarily for the convenience of the Contractor and that all items shall be provided whether included in this listing or indicated on the plans.

1.3 QUALITY STANDARDS

A. Provide experienced, well-trained workers competent to complete the work as specified. Fabricator/Installer shall be experienced in performing work of similar type and scope.

1.4 SUBMITALS

A. All materials and work for this section as indicated on the complete set of drawings and as required for a complete installation. Note that any component listing is primarily for the convenience of the Contractor and that all items shall be provided whether included in this listing or indicated on the plans.

B. Submit list of materials to be provided for this work, manufacturer’s data required to prove compliance with those specifications, manufacturer’s installation instructions, shop drawings as required, with complete details and assembly instructions.

C. Submit samples as required for approval by the Architect.

D. Shop drawings shall be complete with specific instructions for the installation of panels, sub-frame assemblies and other component parts.

1.5 PRECONSTRUCTION AND PREPARATION

A. Examine and verify that job conditions are satisfactory for speedy and acceptable work.

B. Field Measurements: Secure field measurements before preparation of shop drawings and fabrication where possible, for proper fabrication and installation of the work.

C. Pre-Installation Meeting: Conduct pre-installation meeting to verify project requirements, substrate conditions, manufacturer’s installation instructions, shop drawings as required, with complete details and assembly instructions.

1.6 DELIVERY, STORAGE AND HANDLING

A. Deliver material in manufacturer’s original, unopened, undamaged containers with identification labels intact. Materials must be transported flat and kept dry and protected from the elements and handled with care.

B. Storage and Protection: Materials must be stored flat and kept dry in a warehouse/storage facility or in an area protected from exposure to harmful air flow.

1.7 PROJECT CONDITIONS

A. Maintain environmental conditions (temperature, humidity and ventilation) within limits recommended by the manufacturer. Do not install products under environmental conditions outside manufactures absolute limits.

1.8 WARRANTY

A. Manufacturer’s warranty. Submit, for owner’s acceptance, manufacturer’s standard warranty document executed by authorized company official. Manufacturer’s warranty is in addition to, and not a limitation of, other rights Owner may have under Contract Documents.

PART 2 – PRODUCTS

2.1 BASIS OF DESIGN PRODUCT: GAMMASTONE AIR (CHOOSE ONE) [STONE], [CERAMIC], [GLASS], [GFRC], [BRICK], [MOSAIC]

A. GAMMASTONE - Exterior grade (CHOOSE ONE) [STONE], [CERAMIC], [GLASS], [GFRC], [BRICK], [MOSAIC]

1. Manufactured by: GammaStone Via Flaminia 148 00068 Rignano Flaminio (Roma) Italy +39 0761 5051 info@gammastone.com

2. LOCAL CONTACT: xxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

2.2 MATERIALS

A. EXTERIOR GRADE (choose one) [STONE], [CERAMIC], [GLASS], [GFRC], [BRICK], [MOSAIC]

B. TECHNICAL REQUIREMENTS: (choose one) [STONE], [CERAMIC], [GLASS], [GFRC], [BRICK], [MOSAIC]

1. SURFACE: Per Architect’s selection (choose one) [STONE], [CERAMIC], [GLASS], [GFRC], [BRICK], [MOSAIC]

2. PANEL DIMENSIONS: As indicated on drawings.

3. DIMENSIONAL TOLERANCES: See Data Sheet

4. WEIGHT (dependent on panel configuration)

5. SURFACE BURNING CHARACTERISTICS: Report on surface burning characteristics determined by ASTM E84 (twenty-five foot tunnel furnace test method) All panels meet class A, flame spread index 0 - 25 and a smoke developed index of 0 – 490.  All GammaStone AIR panels have been rated as Non-combustible according to the ASTM E 119 test in accordance with the International Building Code. 7 All GammaStone AIR panels have been rated as Non-combustible according to the ASTM E 119 test in accordance with the International Building Code. 8. ASTM E 136 tensile strength test 1.37 + 0.05 M Pa S. Wire Resistance ETAC - 4610 Pa

6. ACCESSORIES

A. Provide Trim, gaskets, fasteners and other related accessories recommended by the manufacturer to provide a complete system.

B. Sub-Frame and Fasteners: Provide sub-framing component and fasteners by manufacturer.

2.4 FABRICATION

A. Fabrication by Panel Manufacturer

PART 3 – EXECUTION

3.1 INSPECTION

A. Examine alignment of backup structure prior to installing sub-frame. Do not proceed until all defects are corrected.

3.2 INSTALLATION

A. Comply with Manufacturer’s guidelines for panel installation

B. Attachment system: GAMMASTONE: Hidden fastening (Ventilated), [Micro-ventilated], [Curtain wall] [Gutting] [Sunblades]

C. Install panels plumb and level and accurately spaced in accordance with manufacturer’s recommendations and approved submittals.

D. Fasten solid exterior wall panels to supporting substrate with fasteners approved for use with adhesion curing.

E. Accessory frames: Install corner profiles, gaskets and trim with fasteners and adhesive appropriate for use with adhesion curing as indicated on drawings and as recommended by manufacturer.

3.3 DAMAGED MATERIAL

A. Repair or replace all damaged materials to the satisfaction of the Architect.

3.4 CLEANING

A. Do not use abrasive cleaners or cleaning tools. Dry and wipe down panel sections as work progresses.

B. Provide final cleaning of the panel system.

3.5 PROTECTION

A. Protect installed product and finish surfaces from damage during construction.

END OF SECTION 074320

[STONE], [CERAMIC], [GLASS], [GFRC], [BRICK], [MOSAIC]
GAMMASTONE

All reproduction and reprocessing rights are reserved. GammaStone reserves the right to perform changes, even without prior notice and at any time, to the features of the products shown in this catalog. Colors and grains are merely indicative.

Graphic & Photos:
Studioventuno.eu
Civita Castellana (VT) Italy