

VAS[®] MARINE



CERTIFIED MARINE GLASS SOLUTIONS

www.vasglass.gr

 **VAS[®]**
VASILIOUGLAS TECHNOLOGIES



VAS MARINE by VAS “VASILIOU GLASS TECHNOLOGIES”

At VAS “VASILIOU GLASS TECHNOLOGIES” we all share the same vision: continuous advancement.

The evolution of architectural glass in terms of manufacturing process, functionality and applications is continuous. Competence, technology and innovation lead to the creation of advanced products and services that respond to contemporary needs.

Products and services of supreme quality and of the highest standards, are those that can stand in the demanding international market environment.

We have been dedicated during the last five decades in the advancement of our processing capabilities, aiming at establishing sheet glass among the foremost materials for any type of construction, be it in land or sea.

Thanks to the prestigious brand name, we provide trustworthiness and consistency to all clients. VAS “VASILIOU GLASS TECHNOLOGIES” follows a customized approach; the experienced staff collaborates with the clients so as to have a clear idea of their needs and consequently, plan the most appropriate glass solutions.

The turnkey service consists of consultation, digital measurements, CAD design, certifications, manufacturing, installation and review audit. In this way, all clients make sure that VAS “VASILIOU GLASS TECHNOLOGIES” provides the best tailored glass solution which responds to their needs.

Sea environment is directly connected to a man’s life. VAS “VASILIOU GLASS TECHNOLOGIES”, through the certified MARINE line of products, turns into an integral part of this environment by offering specialized, high-end glass

solutions. The field of application varies from sailing yachts to cruisers. Bearing all certifications required, our Marine line is sea-friendly no matter what.

VAS “VASILIOU GLASS TECHNOLOGIES” understands your needs better than anyone else. No matter how expanded is the range of your requirements, the company staff designs and manufactures products that meet such needs, both in an aesthetical and functional way. The customized solutions may address to any kind of potential needs e.g. security, curved, fire-rated. The VAS “VASILIOU GLASS TECHNOLOGIES” range of interior and exterior glass products are marine-certified, where applicable.

TYPICAL VAS “VASILIOU GLASS TECHNOLOGIES” APPLICATIONS:

Interior

- Doors & Sliding glass doors for cabin balconies
- Glass Balustrades
- Glass Floors
- Spiral Staircase Balustrades
- Lift Shafts
- Shower Screens
- Cabinets
- Decorative Screens
- Secure / Panic Rooms

Exterior

- Windows & Panoramic windows
- Windscreens
- Portholes
- Windbreaks
- Glass Balustrades
- Glass domes & skylights
- Certified fire resistant glass walls
- Opening and sliding roofs for sundecks



VAS-SEC MARINE • VAS-SAFE MARINE MARINE GLAZING

There is a fundamental distinction between the shipping and architectural markets. A building without glazing retains its integrity, unlike a ship, whereby glazing is a structural element without which its integrity is compromised.

The sea can prove to be an extremely hostile environment, more so than any other on earth. Acknowledging that, strict adherence to **BSMA 25** and **ISO** standards in the construction of marine glazing is obligatory.

The VAS "VASILIOU GLASS TECHNOLOGIES" heat treated and heat-treated laminate glazing are offered certified by an internationally recognized classification society fully compliant to **BSMA 25, ISO 614, ISO 21005, ISO 11336, ISO 12216** regulations and standards, in addition to following the guidelines of internationally recognized societies for specific requirements able to cover the entire range of marine applications, such as windows, scuttles, doors, interior and exterior balustrades, etc.

The **ISO 614**, and consequently, **ISO 21005** standards, form the backbone of standards that define durability and strength for marine monolith glass. How-

ever, these standards do not apply to marine laminate glazing.

Manufacturing of marine laminate glazing requires application of specialized techniques, which VAS "VASILIOU GLASS TECHNOLOGIES" offers through a certified product range in the marine glazing market.

ISO 11336 and **ISO 12216** specify the requirements and methodology for the design and testing of marine glazing, following the approach for structural elements established in other disciplines and sectors.

These requirements relate to the level of pressure exerted on the glazing depending – among others – on the position of its installation and the size of the vessel.

Pressure test results showed that although it is possible for the laminate glazing to break (under extreme conditions), the system remained watertight under all circumstances.

Naturally, post breakage resistance to pressure is reduced, however the overall integrity of the laminate glazing allows the time necessary for repairing the damage. This is a

crucial difference between laminate glazing and a thermally treated monolith glass.

VAS "VASILIOU GLASS TECHNOLOGIES" offers its marine glazing portfolio under the **VAS-SEC MARINE** and **VAS-SAFE MARINE** brand-names, following the successful completion of a series of tests on the strength of load bearing glazing and having obtained type approval and relevant certification by the internationally recognized classification society Lloyds Register, a member of the International Association of Classification Societies (IACS).

The accomplishment of obtaining type approval by Lloyds Register, affirms the compliance of the VAS "VASILIOU GLASS TECHNOLOGIES" marine glazing portfolio with international standards and specifications and the effectiveness of the company's manufacturing process and the quality assurance systems it employs.





VAS "VASILIOU GLASS TECHNOLOGIES" continuous quest for innovation and the creativity of its people led to the development of high performance marine glazing for the demanding markets of shipbuilding and maintenance.

Methods developed internally and tested in its R&D, allow VAS "VASILIOU GLASS TECHNOLOGIES" to claim the competency and the core advantage of manufacturing marine glazing that exhibits reduced width and weight for given strength and integrity profiles.

VAS "VASILIOU GLASS TECHNOLOGIES" can certifiably offer impressive weight reductions in the order of 30%, compared to conventional methods of weight measurement.

Heat treated laminate glazing is approximately 40% thicker than monolith heat treated glazing of equivalent characteristics, according to the following equation:

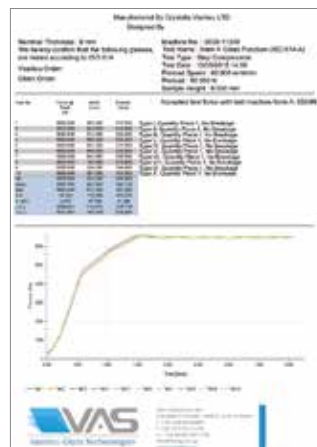
$$ts^2 = ti_1^2 + ti_2^2 + \dots + ti_n^2 \text{ mm}$$

where:

n = number of laminate glass components.

ti = the width of each individual component of the laminate glass, in mm.

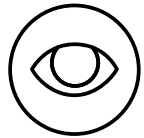
ts = the width of the monolith glass, in mm.





PRODUCT GUIDE

[RELATED WITH VAS MARINE]



STANDARD GLASS



DESCRIPTION

The building blocks for our entire portfolio. The core materials that span the complete range of solutions offered by VAS "VASILIOU GLASS TECHNOLOGIES", exhibiting absolute transparency, safety & durability.

PRODUCTS IN THIS CATEGORY

CLEAR GLASS

Clear float glass is mainly comprised of silica sand and soda ash and is created through a process whereby the elements are heated to a temperature higher than 1.500°C, forming a uniform molten sheet that floats on a bed of molten metal, typically tin.

EXTRA CLEAR GLASS

Float glass of exceptional clarity due to low iron oxide content. Its composition allows for the highest levels of light transmission and reduced discoloration of the float glass. It demonstrates the exact same sound control and mechanical properties as the clear glass. Ultra clear float glass is commonly used as a substrate for the application of anti-reflective coatings, while performing exceptionally well in solar energy related applications.

COLOR GLASS

Bronze, tinted, green, and blue.

Float glass containing coloring agents (small quantities of metals or metal oxides), added during the production phase, offering a uniform result in its visual characteristics, its color, as well as its thermal conductivity. Sound control and mechanical properties are the same as those of the clear glass. Color glass is used in a multitude of high-performance applications.

GET MORE INFORMATION

Get more analytical information regarding STANDARD GLASS as follows:

SCAN:



*Alternatively type the following link:
bit.ly/vas-standard

NOISE REDUCTION



DESCRIPTION

Background noise is an escalating problem in our times, while moments of quietness and serenity become increasingly rare. The soundproofing properties of the VAS "VASILIOU GLASS TECHNOLOGIES" NOISE REDUCTION product line provide an effective shield against this phenomenon, safeguarding us at all times.

PRODUCTS IN THIS CATEGORY

VAS-SAFEACOUSTIC (SOUNDPROOFING)

Ever-increasing noise levels are a leading characteristic of modern society. Protection against noise pollution becomes one of the most important aspects of daily life, as it directly impacts our mental health. Moments of quietness and tranquility become increasingly rare, while comfort becomes synonymous to achieving adequate noise protection.

The soundproofing properties of the VAS "VASILIOU GLASS TECHNOLOGIES" product line offer a significant reduction in ambient noise levels and an effective protection against noise pollution.

VAS "VASILIOU GLASS TECHNOLOGIES" takes acoustic glass one step further, by additionally offering the EN 356 and EN 12600 certifications (CEmark) for its high performance safety and protection portfolio, also for its VAS-SAFE ACOUSTIC product line.

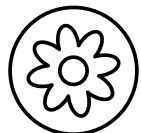
GET MORE INFORMATION

Get more analytical information regarding NOISE REDUCTION in pdf format as follows.

SCAN:



*Alternatively type the following link:
bit.ly/vas-noise



DESIGN & DECORATION



DESCRIPTION

Current technologies in glass processing allow for a vast range of glass applications and a practically infinite choice of colors and designs. VAS "VASILIOU GLASS TECHNOLOGIES", acting on your behalf, is superbly positioned to offer you the most in this new era for glass.

PRODUCTS IN THIS CATEGORY

VAS-SAFECOLOR (COLORED INTERLAYER)

Architects, engineers, and interior decorators can take full advantage of the qualities that laminate glass has to offer, while their creativity remains unrestricted for applications that color is of primary importance. The VAS-SAFECOLOR product portfolio comprises of 69 colors for laminate glass able to withstand both sun and weather fatigue, thus preserving their structural and visual integrity over time.

VAS-PAINT organic (PAINTED GLASS)

A specialized organic paint coating is applied on glass, bestowing a glossy and opaque visual result, which makes it ideal for interior applications. However, the specifications are such as to allow for the use of organic paint in interior applications only. The organic paint technology is designed to address high performance interior design applications, offering simultaneously a unique sense of depth and light.

VAS-print ORGANIC • VAS-print ceramic (DIGITAL ORGANIC AND CERAMIC PAINTING)

The use of state-of-the-art printing technology allows VAS "VASILIOU GLASS TECHNOLOGIES" to offer unique solutions in glass printing, for both interior and exterior decoration applications. VAS "VASILIOU GLASS TECHNOLOGIES" is capable of printing on a glass substrate any image provided in digital format, while additionally offering the possibility to choose a theme from a vast collection of pre-selected images.

VAS-ANTISILP (SLIP RESISTANT GLASS)

VAS "VASILIOU GLASS TECHNOLOGIES" offers a wide selection of embossed glass, with the purpose of providing anti-slip protection. This type of glass belongs to the rolled plate/patterned glass category.

VAS-FUSED (FUSED GLASS)

Fusing glass is a high-temperature technique that allows for the coloring and shaping of the glass. In a sense, it refers to the "art of baking glass", whereby pieces of glass are overlaid and brought to melting temperatures on top of one another. VAS "VASILIOU GLASS TECHNOLOGIES" fused glass creations, under the brand-name VAS-FUSED, offer a unique combination of embossed designs in indelible colors that "lighten up" the ambient space.

GET MORE INFORMATION

Get more analytical information regarding DESIGN & DECORATION in pdf format as follows.

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*Alternatively type the following link:
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FIRE RESISTANCE



DESCRIPTION

Ultimate protection against fire, meets superior aesthetics. A powerful combination of features found in the VAS "VASILIOU GLASS TECHNOLOGIES" line of FIRE RESISTANCE products.

PRODUCTS IN THIS CATEGORY

VAS-PYRO (FIRE SAFETY GLASS)

Contemporary building code defines fire-safety and specifies the minimum acceptable levels for both new build and existing construction. Commonly used architectural glass cannot fulfill such requirements, as it tends to collapse when temperature variations above 40oC are applied on its surface.

VAS "VASILIOU GLASS TECHNOLOGIES" fire resistant glass meets all necessary specifications for enduring temperatures reaching 1.000°C, for various time intervals, so as to allow for orderly evacuation in event of fire.

The VAS "VASILIOU GLASS TECHNOLOGIES" FIRE RESISTANCE portfolio is offered certified (CE marked) according to the European Norm EN 13524, under the brand-name VAS-PYRO.

GET MORE INFORMATION

Get more analytical information regarding FIRE RESISTANCE in pdf format as follows.

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*Alternatively type the following link:
bit.ly/vas-fire



PROTECTION & SAFETY



DESCRIPTION

Unparalleled transparency and durability combined with the highest level of protection glass can achieve, at the highest possible level of certification.

PRODUCTS IN THIS CATEGORY

VAS-HS (HEAT STRENGTHENED GLASS)

At VAS "VASILIOU GLASS TECHNOLOGIES", the glass heat strengthening process is offered certified (CE marked) according to the European Norm EN1863, under the brand-name VAS-HS.

VAS-SEC (THERMALLY TOUGHENED GLASS)

VAS "VASILIOU GLASS TECHNOLOGIES", a company fully compliant with the current European safety framework, offers its thermally toughened glass with an additional certification (CE mark) according to the European Norm EN 12600 (Pendulum Test).

VAS-SAFE (LAMINATE GLASS)

At VAS "VASILIOU GLASS TECHNOLOGIES", laminate glazing is manufactured with a combination of two, or more glass panes and the use of in-

terlayer of various types, and it is offered certified (CE marked) according to the European Norms EN 12543 and EN 14449, under the brand-name VAS-SAFE.

VAS-SAFE ANTI-BULLET (BULLET RESISTANT GLAZING)

VAS "VASILIOU GLASS TECHNOLOGIES", a company fully compliant with the current European safety framework, offers its bullet-resistant laminate glazing certified (CE marked) according to the European Norm EN 1063, for the full range of certification levels, under the brand-name VAS-SAFE ANTI-BULLET.

VAS-SAFE ANTI-BLAST (BLAST RESISTANT GLAZING)

VAS "VASILIOU GLASS TECHNOLOGIES", a company fully compliant with the current European safety framework, offers its blast-resistant laminate glazing certified (CE marked) according to the European Norm EN 13541, for the full range of certification levels, under the brand-name VAS-SAFE ANTI-BLAST.

GET MORE INFORMATION

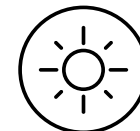
Get more analytical information regarding PROTECTION & SAFETY in pdf format as follows.

SCAN:



*Alternatively type the following link:
bit.ly/vas-safe

ENERGY EFFICIENT



DESCRIPTION

Management of light's properties is key to sustainable construction and cost optimization. VAS "VASILIOU GLASS TECHNOLOGIES" ENERGY EFFICIENT line, actively contributes its share in today's countless choices offered to humanity.

PRODUCTS IN THIS CATEGORY

VAS-SOLAR • VAS-ENERGY SAVING (SOLAR CONTROL • LOW EMISSIVITY GLASS)

We perceive light visually but light can also be perceived in the form of energy since approximately half the energy we receive from the sun is transmitted through light. Solar radiation represents only a part of the full spectrum of electromagnetic waves.

As glass is permeable to the entire spectrum of electromagnetic radiation, the aim is to allow for the highest possible light transmission while containing the influx of solar energy.

VAS "VASILIOUGLASS TECHNOLOGIES", in line with architectural, construction and environmental demands, offers its two distinct insulating glazing product lines, certified (CE marked) according to the European Norm EN 1279, under the VAS-ENERGY and VAS-SOLAR brand-names.

GET MORE INFORMATION

Get more analytical information regarding ENERGY EFFICIENCY in pdf format as follows.

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*Alternatively type the following link:
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DEVELOPMENT

TECHNOLOGY

QUALITY

EVOLUTION

KNOW-HOW

CONSULTING

INNOVATION

RESEARCH



FIVE DECADES IN GLASS PROCESSING

1965: Founding of VAS "Vasiliou Glass Technologies"

2004: Relocating to own facilities of 12.000 m². Reinstallation of equipment and set up of production lines for conventional processing. Early thoughts on a new vision.

2009: Commissioning of the tempering and heat strengthening lines. The first - and to date, the only - float glass processor in Greece to install and operate a Heat Soak Test (HST) chamber. Our vision starts to unfold.

2012: Investing in the most advanced and full-range laminating production line, including the installment of an equally innovative and sizable autoclave. The company achieves 360° independency for all conventional float glass processing requirements.

2013: The company is awarded the prestigious Evoia Prefecture Innovation Award.

2014: Investing in state-of-the-art waterjet cutting, edging and polishing equipment. Commissioning and installation of a digital ceramic printer capable of handling jumbo dimensions glass sheets.

2015: Initiating the migration to a new software platform that consolidates existing automation subsystems under one integrated "roof", assuring quality and efficiency throughout the process.



TIMELESS VALUES

Core values should be the only constant in an ever-evolving company. VAS "Vasiliou Glass Technologies" has learned to respond effectively in a changing environment, while remaining true to its fundamental values. Adherence to these values has positioned VAS "Vasiliou Glass Technologies" among the best in its industry.

RELIABILITY

We offer glass solutions that last for a lifetime. Our track-record in achieving just that, along with our proven technical superiority, constitute the principal factors that elevate VAS "Vasiliou Glass Technologies" to the status of a most reliable partner.

QUALITY

VAS "Vasiliou Glass Technologies" products adhere to the most stringent quality standards, directly attributed to a combination of using superior materials from top-notch suppliers, and an optimal manufacturing process, following best practices. This can only lead to the creation of lasting products that possess specifications which set them apart.

KNOW-HOW

With experience meeting knowledge, we feel that we make history in the field of float glass processing. VAS "Vasiliou Glass Technologies" takes pride in the employment of talented and highly trained people, tuned to the needs of the market and capable of catering to them.

RESPECT

We have the utmost respect for people, be it our employees, our partners or the end-users of our products. The human element, being part of our environment, is to us the driving force for creating flawless and effective products. At VAS "Vasiliou Glass Technologies" we foster relationships based on respect, in the strong belief that such approach benefits all stakeholders.

TRUST

Trust is earned with time, and we daily take pride in confirming that we earn the trust of our partners and clients. Over the last five decades, our partners have learned to expect that no matter which product or service they acquire from VAS "Vasiliou Glass Technologies", it will be one of excellent design, of the highest quality and durability and performance.

LASTING COOPERATION

In business, fostering life-time relationships attest to striking a balance between achieving optimal results for the company, while equally benefiting all other stakeholders. VAS "Vasiliou Glass Technologies", a strong and healthy provider of innovative products and services, is fostering long-lasting relationships, both domestically and in its foreign markets, continuously building upon its ever-increasing levels of extroversion.

VAS[®] MARINE

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