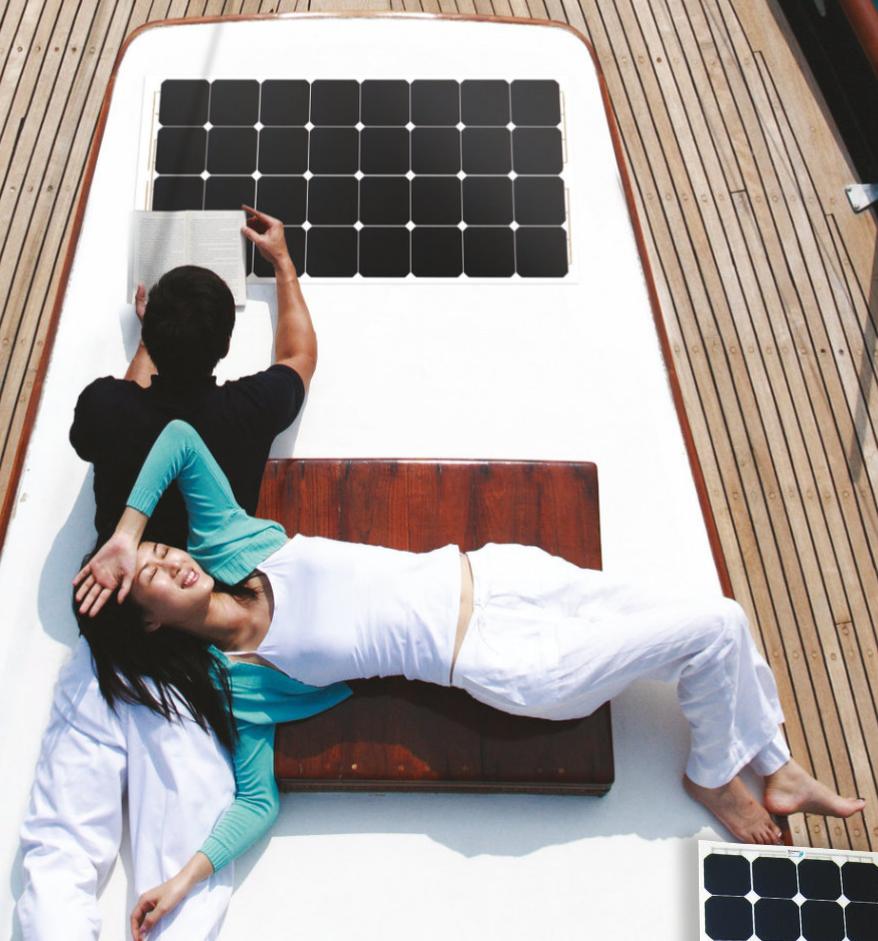


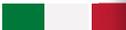
New energy, a whole new story

Flexible, light and resilient,
resisting the harshest
environmental conditions.
Solbianflex photovoltaic modules
are made using cells with up to
24% conversion of sunlight into
electricity.

**All the energy to live your
passions without limits.**



SOLBIAN
FREEDOM POWERED BY THE SUN


MADE IN ITALY

SOLBIAN.EU



Many good reasons for choosing Solbian

Product quality, durability and maximum performance, always.

- ✓ Because we guarantee the quality of the product and its duration in time.
- ✓ Because our panels are very resilient, thin and extraordinarily flexible, able to adapt to curved surfaces, such as the deck of a boat.
- ✓ Because our panels are ultra-lightweight: only 2.1 kg per square meter, compared to 12 kg and more of traditional panels.
- ✓ Because we manufacture the SP series, with the most efficient solar cells on the market: high power even in very small dimensions.
- ✓ Because the ease of installation, both permanent and removable, is one of the strengths of Solbian: from structural adhesive to steel eyelets, all the different fixing methods provide easy installation.
- ✓ Because we offer a wide range of accessories, designed and manufactured for the marine industry.
- ✓ Because Solbian panels have been tested in extreme conditions by great heroes of sailing: Giovanni Soldini, Ambrogio Beccaria, Boris Herrmann and many others.
- ✓ Because our products are certified according to IEC 61215, IEC 61730 and IEC 61701 (salt mist). Solbian has also obtained ISO 9001 Quality, OHSAS 18001 Safety and ISO 14001 Environmental certifications.





Something new under the Sun SOLBIANFLEX

No task is too hard for Solbianflex, with a wide range of power available. Four different series using four different technologies: SP, SR, SX and SXX. All with crystalline silicon cells, the most efficient and proven on the market, and using lightweight and flexible encapsulation materials.

Four levels of power, all winners

Power at the highest level.



SP Series

SP series is at the top of the range, thanks to the use of selected back-contact monocrystalline silicon cells, reaching a record 24% conversion of sunlight into electricity and with a pleasant appearance thanks to the electrical contacts hidden on the back. Back-contact cells represent the most advanced technology on the market, and make the SP Solbian panels the highest-efficiency flexible panels.



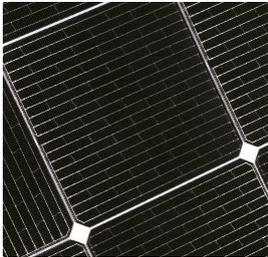
	SP 144	SP 130	SP 118 L	SP 118 Q	SP 104	SP 78	SP 52 L	SP 52 Q
Power (W)	144	130	118	118	104	78	52	52
Length (mm)	1490	1363	1236	855	1109	855	1109	601
Width (mm)	546	546	546	800	546	546	292	546
Thickness (mm)	2	2	2	2	2	2	2	2
Weight (kg)	1.9	1.7	1.6	1.6	1.4	1.1	0.8	0.8
N. of cells	4x11 (44)	4x10 (40)	4x9 (36)	6x6 (36)	4x8 (32)	4x6 (24)	2x8 (16)	4x4 (16)

Super Rugged Series.



SR Series

The monocrystalline high efficiency SR cells are sandwiched by two patented metallic grids. The grid on the front is carefully tailored to optimize the current harvesting, while the one behind the cell offers strong mechanical support. The grids essentially form a double shield that acts as a conducting reinforcement to the solar cell. Extreme crack and bend tolerance are built in, enabling novel crystalline silicon architectures. A guaranty of high efficiency and unmatched durability in flexible solar panels.



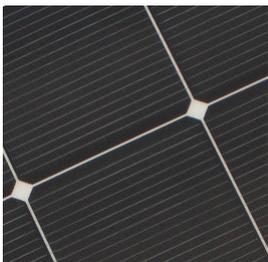
	SR 216	SR 160 L	SR 160 Q	SR 144	SR 108	SR 72 L	SR 72 Q	SR 62
Power (W)	216	160	160	144	108	72	72	62
Length (mm)	1364	1523	1046	1364	1046	1364	728	1205
Width (mm)	996	683	996	683	683	365	683	365
Thickness (mm)	2	2	2	2	2	2	2	2
Weight (kg)	3	2.4	2.4	2.1	1.7	1.2	1.2	1.1
N. of cells	6x8 (48)	4x9 (36)	6x6 (36)	4x8 (32)	4x6 (24)	2x8 (16)	4x4 (16)	2x7 (14)

Aesthetics, reliability and price.



SX Series

In the SX series the monocrystalline solar cells are electrically connected using ultra-thin copper wires that form a very fine mesh on the cell surface, resulting in thousands of contact points. This alternative to the standard bus-bar method allows a higher module power and increases the energy yield. A technology optimally suited to flexible modules, due to its intrinsic insensitivity to micro-cracks, that are the most common cause of energy loss in solar modules. Another advantage is a reduced sensitiveness to shading, pushed to the extreme in the Guardian (G) models where several bypass diodes are inserted thanks to an innovative cell layout. The new connection technology, together with the use of high efficiency silicon cells, make SX panels especially powerful and reliable.



	SX 216	SX 160 L	SX 160 Q	SX 160 G	SX 144	SX 108	SX 108 G	SX 72 L	SX 72 Q	SX 62
Power (W)	216	160	160	160	144	108	108	72	72	62
Length (mm)	1364	1523	1046	1046	1364	1046	726	1364	728	1205
Width (mm)	996	683	996	996	683	683	996	365	683	365
Thickness (mm)	2	2	2	2	2	2	2	2	2	2
Weight (kg)	3	2.4	2.4	2.4	2.1	1.7	1.7	1.2	1.2	1.1
N. of cells	6x8 (48)	4x9 (36)	6x6 (36)	6x6 (36)	4x8 (32)	4x6 (24)	6x4 (24)	2x8 (16)	4x4 (16)	2x7 (14)

More power with HJT cells.



SXX Series

The SXX series comes at the same size of standard 6 inches cell panels but generates more power, thanks to its silicon-based heterojunction solar cells (HJT) that offer more than 23% of efficiency. When compared with panels of the same nominal power, the SXX prove to harvest more energy due to HJT cells being intrinsically bifacial, an important feature especially when panels are encapsulated in a transparent sandwich and installed with the back exposed to indirect light. To top it all, HJT cells perform better than others in hot climates, thanks to very low temperature coefficients.



	SXX 240	SXX 180 L	SXX 180 Q	SXX 180 G	SXX 160	SXX 120	SXX 120 G	SXX 80 L	SXX 80 Q	SXX 70
Power (W)	240	180	180	180	160	120	120	80	80	70
Length (mm)	1364	1523	1046	1046	1364	1046	726	1364	728	1205
Width (mm)	996	683	996	996	683	683	996	365	683	365
Thickness (mm)	2	2	2	2	2	2	2	2	2	2
Weight (kg)	3	2.4	2.4	2.4	2.1	1.7	1.7	1.2	1.2	1.1
N. of cells	6x8 (48)	4x9 (36)	6x6 (36)	6x6 (36)	4x8 (32)	4x6 (24)	6x4 (24)	2x8 (16)	4x4 (16)	2x7 (14)

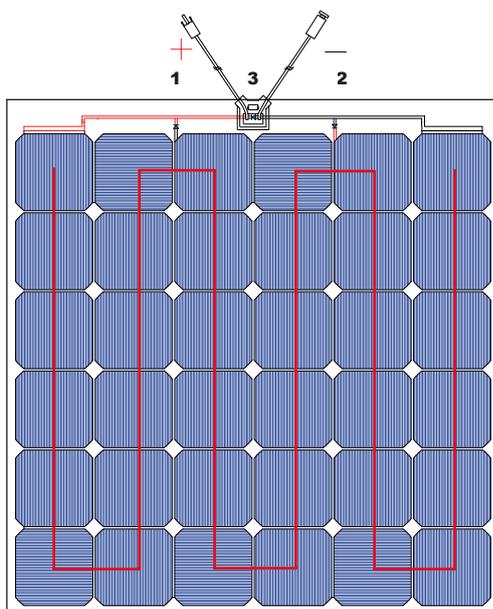
Design your panel, ask for custom solutions.

When shading is unavoidable

Guardian layout

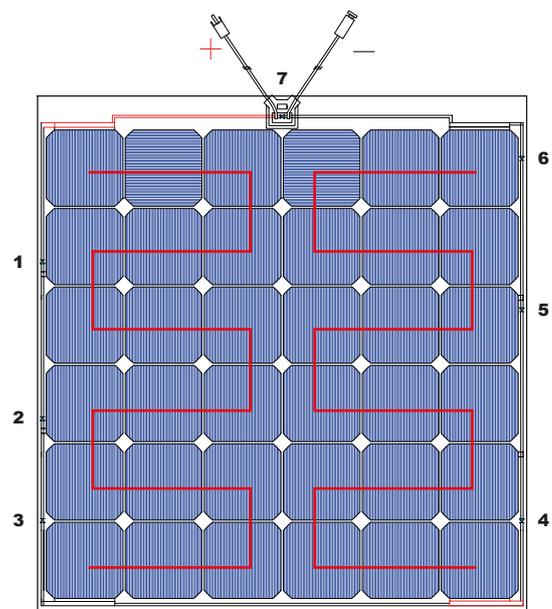
Solbianflex SX and SXX panels can be offered with a modified cells topology. Thanks to the way Day4Energy™ solar cells are electrically connected, a larger number of bypass diodes can be integrated in the panel. The result is a panel that is far less sensitive to shading, a clear advantage in all kind of installations but especially on sailing boats, where shadows are unavoidable.

In a standard cell layout, where bypass diodes can be inserted any two strings (columns) of cells, the typical configuration consists of two or three bypass diodes, in the Guardian layout instead, five, seven or even nine diodes can be inserted.



Standard layout: SX 160 Q - 36 cells – 3 diodes

In red the path of the current



Guardian layout: SX 160 G - 36 cells – 7 diodes

In red the path of the current

Guardian SX models

	Length (mm)	Width (mm)	Thickness (mm)	Weight (kg)	Peak Power (W)	Rated Voltage (V)	Rated Current (A)	Number of cells	Number of diodes
SX 160 G	1046	996	2	2.4	160	18.6	8.6	36	7
SX 108 G	726	996	2	1.7	108	12.6	8.6	24	5

Guardian SXX models

	Length (mm)	Width (mm)	Thickness (mm)	Weight (kg)	Peak Power (W)	Rated Voltage (V)	Rated Current (A)	Number of cells	Number of diodes
SXX 180 G	1046	996	2	2.4	180	20.9	8.6	36	7
SXX 120 G	726	996	2	1.7	120	14	8.6	24	5

Freedom made-to-measure Custom Panels

With great versatility, Solbianflex panels are able to meet the most demanding requirements, even in the most unusual installations. They can be mounted and removed with ease, thanks to several accessories, and adapted to various surfaces.

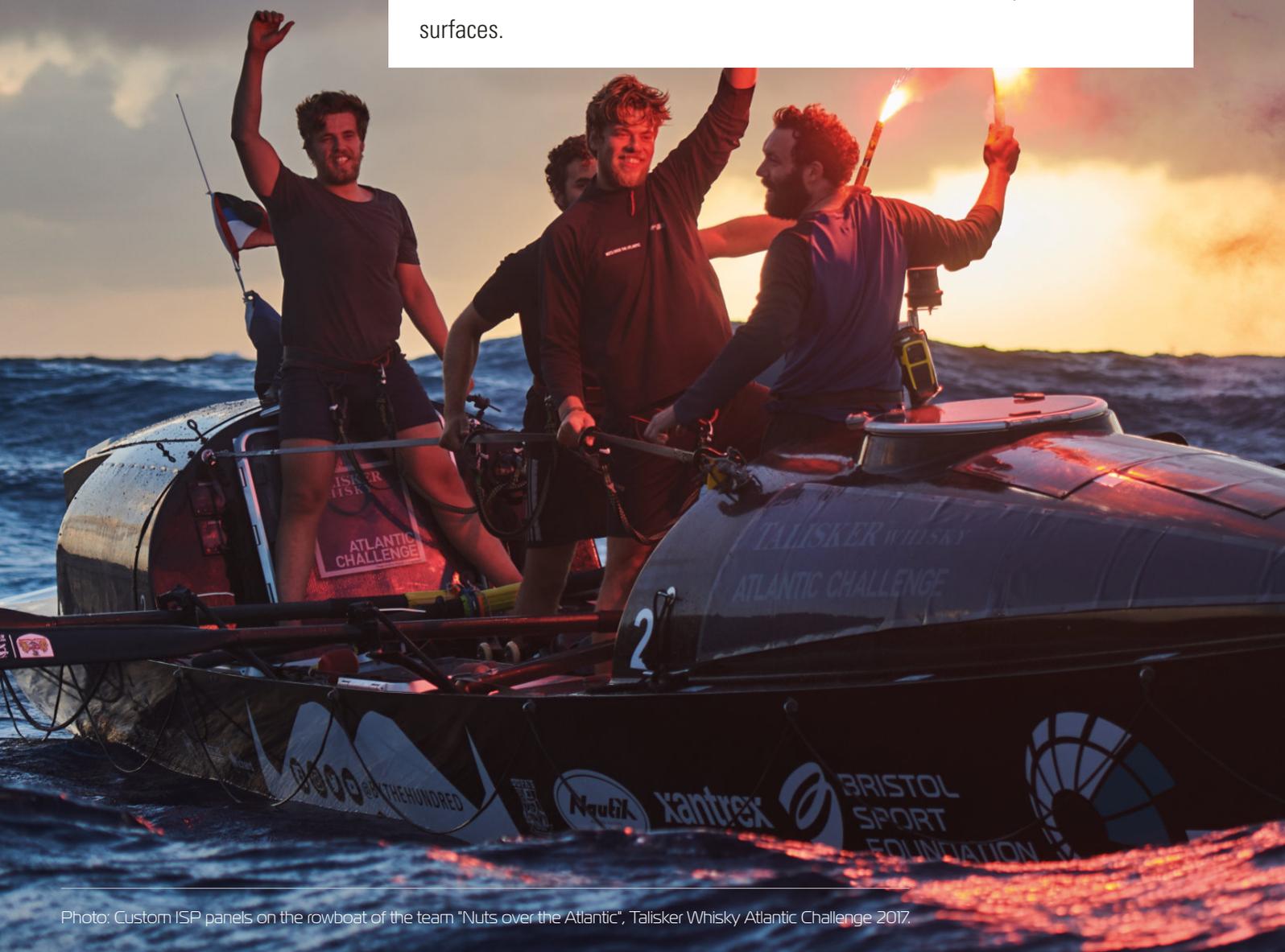


Photo: Custom ISP panels on the rowboat of the team "Nuts over the Atlantic", Talisker Whisky Atlantic Challenge 2017.

Contents of a photovoltaic kit

Panel

Lightweight and extraordinarily flexible, able to adapt to curved surfaces, such as the deck of a boat.



Cables

For the wiring, provided at required length



Regulator

Perfect combination between the solar generator and the battery to be charged



Connectors

Absolutely waterproof, safe and easily removable electrical connections

Electrical connectors

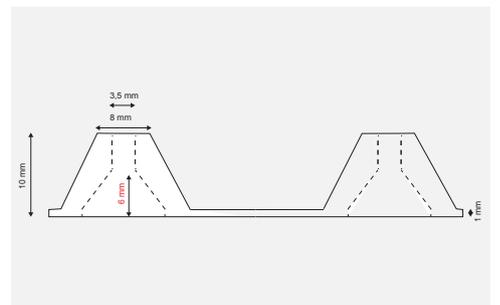
JUNCTION BOX

Solbianflex panels can be supplied with the junction box to allow connection to the charge controller. Solbian provides a complete kit with cables and connectors for easy installation.

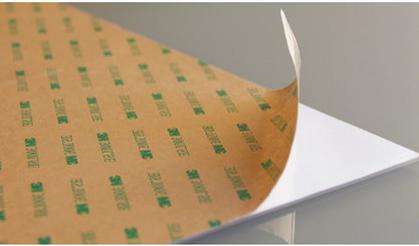


SURFACE MOUNTING CONNECTION

When gluing panels to a solid surface, the electrical connections can be made by means of the rear-side wires of the panels with the SM option. Holes must be drilled in the support material. Cables are then extended through the holes and routed to the charge controller. The wiring is thus protected and invisible.



Fixing options



STRUCTURAL ADHESIVE

The flexible Solbianflex panels can become an integral part of the boat by means of a special double-sided structural adhesive. The electrical connection can be made via the junction box or by direct connection to the positive and negative poles of the panel (Surface Mounting solution).



STAINLESS STEEL EYELETS

They can be fixed on the edges of the panel to allow easy installation and removal. This solution allows you to fix the panel with ropes or screws.



LOXX SNAP FASTNERS

Snap fasteners, a special kind of eyelets, make the attachment and removal of the panel easier. They are suitable for installation on canvas as well as on hard surfaces.



ZIPPER

A zipper can be sewn onto the panel, allowing a removable installation, especially on the bimini.

Charge Controllers and ALLinONE solution

Optimal solar energy management in all conditions.

Solbian offers some of the most advanced charge controllers of the market, for optimal solar power management in all conditions. The golden rule for marine applications suggests "one panel, one controller", but it can be achieved only with a perfect match between the solar generator and the battery to be recharged.

By using our selected DC/DC converters with MPPT optimization system (Maximum Power Point Tracking) you will have all the freedom in choosing panel size and configuration, **and no matter what battery you need to charge (12, 24, 48 V... lead acid or lithium), the charge controller will take care of your needs.**



CTEK, GENASUN, WESTERN CO. and VICTRON

Four renowned international brands, the same controllers chosen and tested by professional sailors and by several automotive companies, to harvest as much energy as possible from the sun.



Solbian Solar Charge Controller

The Solbian solar charge controller is designed for the transition to hybrid propulsion, both in maritime and land transport. It is therefore a boost regulator, with an MPPT algorithm, capable of raising the voltage even of just one module, to the levels required for electric propulsion, ie at nominal voltages ranging from 96 to 144 V, which are the standard for electric and hybrid vehicles batteries. For a perfect integration in control systems, the solar charge regulator also offers a CAN-bus communication interface.



ALLinONE solution

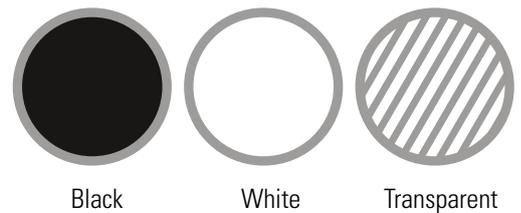
Solar panel+charge controller. To make solar energy simpler, suitable for the enthusiast as well as the professional user. All the electronics you need are already packed into the rugged waterproof box: a sophisticated MPPT controller capable of boosting the voltage to match with your battery pack. With the ALLinONE solution, panels can be combined simply by connecting them directly to your battery, each one being completely independent from the others, thanks to the integrated charge controller.

Aesthetic options



Backsheet

In addition to quality, aesthetics are an important feature of Solbian's products. Customers can choose from three different colours: white, black and transparent.



Black

White

Transparent



Frontsheet

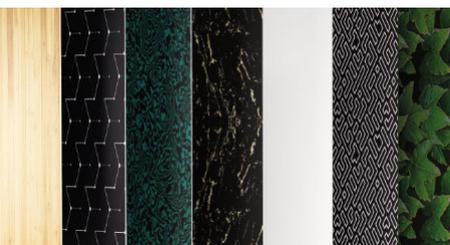
Customers can choose the finishing that better suits their needs: matte, glossy or antiskid



Matte

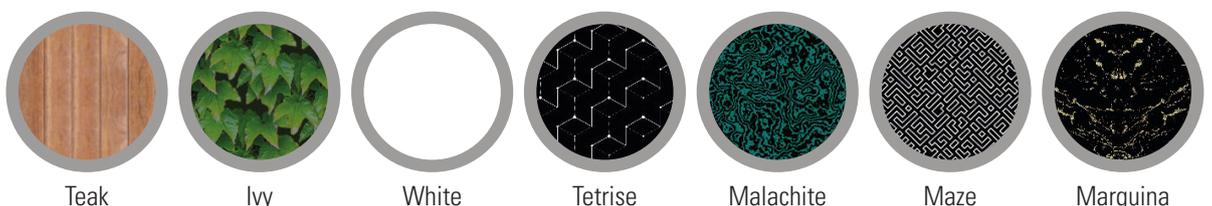
Glossy

Antiskid



ISP

A masking layer placed over the solar cells changes the visual appearance of the solar panel, but keeps the cells efficiency largely unaffected. Solbian panels, beyond being easy to integrate, powerful and reliable, will also contribute to the elegance of your boat, caravan, house.



Teak

Ivy

White

Tetrise

Malachite

Maze

Marquina

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