



ECOFRIENDLY PRODUCT RANGE

WATERPROOF MEMBRANES AND INSULATION WITH HIGH RECYCLED CONTENT





A “CERTIFIED” STORY

“Any person, who is involved in producing something, is faced with the art of making. Which is why we say “done with style” meaning that an object meets all the requirements for which production was requested.”

**Flavio Albanese (Architect)
From the General Membrane video
“Industrial Elegy”**

General Membrane believes that the value of the company lies not only in its ability to optimise production and revenue processes, but also to contribute to the social, cultural and environmental sustainability of the local area. Respecting nature and the place where the company operates, in particular; creating safe, healthy and stimulating work environments; diffusing the enthusiasm for quality and innovation; enhancing the local area, as well as technical, artistic and architectural culture: these aspects are also the hallmarks of General Membrane’s corporate mission.

It is story that started from afar, a long journey characterised by successive stages.

The first is the Quality Management System certification (**UNI EN ISO 9001**): a method aimed at planning, testing, documenting and monitoring the production processes in suitable environments, with appropriate equipment and instrumentation.

This is followed by **UNI EN 14001** certification: not the certification of environmental performance, but rather the verification, by an independent body, that the company has activated and implemented a management system that can constantly monitoring the impact of its business on the environment and continually seek to improve it.

Additional stage: **OHSAS 18001**, now replaced by **UNI ISO 45001**, regarding Occupational



health and safety management systems. This certification attests the voluntary application, within the company, of a system that ensures appropriate checks on the health and safety of workers, in addition to compliance with current regulations.

UNI EN ISO 14064-1: The Company wanted to be the first (and, to date, the only one in the sector worldwide) to achieve this goal, i.e. Greenhouse gases certification. Measuring the effects that each stage of the production cycle has on the environment, e.g. the impact in terms of CO₂ emissions, from the arrival of the raw materials to their transformation and the disposal of production waste. This awareness makes it possible to define environmental improvement objectives and accurately measure the progress achieved with each intervention.

DURABILITY IS SUSTAINABILITY

General Membrane also believes that the durability of a building must become the method for assessing its sustainability.

And the durability of products and systems must become a method for assessing the sustainability of the company that produces them.

It is, therefore, necessary to adopt a long-term perspective in the design of a sustainable building, since only when the life expectancy of the project is taken into consideration can its environmental footprint be properly assessed.

Hence the company’s decision to operate according to certified standards in producing durable systems, capable, therefore, “of performing the required functions, within the functional-operational reference area, for a well-defined period of time without incurring costs for unscheduled maintenance or unexpected repairs” (Canadian Standard Association).

NOVELTY

A NEW PRODUCT RANGE: ECOFRIENDLY

All the General Membrane products contain recycled material in different percentages. In line with the Company's mission and core values, the R&D department has perfected an innovative product range of **bitumen-polymer membranes** and **thermal insulation materials** with **high recycled content**.

Respect for the environment is also part of the sustainable building industry and to achieve this,



it must use durable products which use high percentages of secondary raw materials in their manufacturing cycle whilst maintaining excellent technical performance.



Thanks to the new UNI EN ISO 14021 certification, the **Ecofriendly** product range is accompanied by self-declared environmental product statements, to meet the needs of customers who choose sustainable solutions.



Designers who adhere to the **Green Building Council** will find this useful because the new **Ecofriendly** product range could contribute towards achieving LEED certifications (4.1 and 4.2) for sustainable building.

The importance of sustainability in real estate investment decisions is today widely acknowledged.

THE STRENGTHS

OF GENERAL MEMBRANE'S ECOFRIENDLY PRODUCT RANGE



CUTTING-EDGE PERFORMANCE



Reduction of **environmental footprint**



Possibility of obtaining **LEED credits**



Possibilità di **posa senza fiamma**



Can be combined with high reflection finishes
Reflect Protection



Increases the **sustainability** of the roofing

THE PRODUCTS

THE COMPANY

TECHNICAL SUPPORT



Availability of our Technical department in all the design, application and maintenance stages of waterproofing systems



Implementation of **custom Technical Specifications**



Availability of the **Installation and Maintenance Manual**

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UNI EN ISO 14021 CERTIFICATION



The latest achievement is manufacturing durable products and systems according to international standards, whilst continuously improving and documenting their environmental impact.

The goal of maintaining the technical performance levels of the products, while increasing their recycled material content, has been achieved and certified, confirming the environmental focus and long-term sustainability of the company and its processes.

Having obtained **UNI EN ISO 14021** certification means the company can provide two types of **Self-declared Product Environmental Claims**:

- one prior to supply, indicating the minimum values of recycled material used;
- and the other after supply, with the quantity actually used (equal to or greater than the minimum), thus ensuring the customer and designer receive precise data.



US GREEN BUILDING COUNCIL AND LEED CREDITS



In 1993, the **Green Building Council (USGBC)**, a non-profit association, was set up in the USA (in Italy in 2008) with the aim of providing a set of standards with which to classify the environmental sustainability of buildings.

Prior to this, there was no parameter in the building industry by which to measure the impact of a building on the environment or to define the principles guiding an ecologically compatible design.

The USGBC aims to enhance the technical, scientific and operational skills that promote the **construction of eco-sustainable buildings** through the development of **LEED** (Leadership in Energy and Environmental Design) protocols. LEED protocols are, therefore, a voluntary system of classification based on the assessment of energy efficiency and the ecological footprint of a project

in its various components (including building materials). LEED certification attributes a score (credits) according to six different parameters based on the requirements characterising the sustainability of the building: the total score thus determines the level of certification (Base, Silver, Gold, Platinum).

The requirements needed to obtain credits in points 4.1 and 4.2 concern the topic of recycling, in particular: the objective being to boost the demand for products that contain recycled material, thus reducing the impacts caused by the extraction and processing of virgin materials.

General Membrane has adhered to the U.S. Green Building Council.


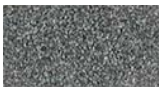


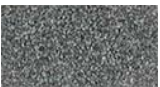







ECOFRIENDLY PRODUCT RANGE

WATERPROOF BITUMEN POLYMER MEMBRANES WITH HIGH RECYCLED CONTENT

PRODUCT FEATURES



| | GREENSTAR | GREENSTAR MINERAL | GREENSTAR TA | GREENSTAR SA | GREENSTAR SA MINERAL |
|-------------------------|---|---|--|--|---|
| Thickness | 4 mm | 4 mm / 5 mm | 3 mm | 3 mm | 3 mm |
| Compound | <p>Innovative H.R.C. (High Recycled Content) compound with a specific formulation consisting of bitumen modified with high quantities of special polymers coming from the most modern recycling plants. Specially selected by General Membrane's Research and Development laboratory, these polymers guarantee excellent compatibility with bitumen, maintaining the same performance of the classic bituminous waterproofing compounds and lowering environmental impact.</p> | | | | |
| | Compound for torch application | Compound for torch application | Thermo-adhesive compound | Self-adhesive compound | Self-adhesive compound |
| Reinforcement | <p>Spunbond non-woven polyester fabric reinforced with glass fibre, thus guaranteeing bitumen membrane with great mechanical performance.</p> | | | | |
| Top finishing |  Sand |  Mineral finish self-protection with slate (grey / green / red / white / black) |  Polyethylene film |  Polyethylene film |  Mineral finish self-protection with slate (grey / green / red / white / black) |
| Bottom finishing |  Polyethylene film |  Polyethylene film |  Silicone film |  Silicone film |  Silicone film |

CERTIFIED VARIATIONS AVAILABLE



The **Mineral** product is also available in the **Reflect Protection** version: the top mineral finish with solar reflectance index (SRI) of 80%* certified according the ASTM E-1980 standard.

* Test report of the Department of Mechanical and Civil Engineering - University of Modena and Reggio Emilia.

ECOFRIENDLY PRODUCT RANGE

PANELS FOR THERMAL INSULATION WITH HIGH RECYCLED CONTENT

PRODUCT FEATURES



| | ISOPUR V | ISOPUR V-B | ISOPUR C-B | ISOXPS |
|------------------|---|--------------------|--------------|--|
| Main material | Rigid sheet in expanded polyiso foam (polyurethane) | | | Rigid sheet in extruded expanded polystyrene |
| Top coating | Saturated fibreglass | Bitumen fibreglass | Bitumen felt | Surface skin |
| Bottom coating | Saturated fibreglass | Bitumen fibreglass | Bitumen felt | Surface skin |
| Thickness range | 20 - 160 | 30 - 160 | 20 - 160 | 20 - 140 |
| Recycled content | 1% - 4% | 2% - 5% | 5% - 13% | 10% - 30% |



ECOFRIENDLY
PRODUCT RANGE



GOOD DESIGN



The high quality of the materials, the good **design**, correct **application** and **maintenance** are fundamental for obtaining state-of-the-art waterproofing which increases the durability of the roof and extends the building life cycle. Which is why General Membrane provides its *expertise* to assist sector-based designers

and operators: the **dedicated support of the technical department** with on-site inspections, manuals and the option to develop custom technical solutions, along with a high-quality product suite to meet the demands of roofing experts.

PROJECT SUPPORT

Contact our Technical Department for support in the project stage and for **customised specifications**:
export@generalmembrane.com

Designing durability. Together.



HOW TO USE CORRECTLY



Installation method

The **Ecofriendly** product range of membranes are designed to be applied using traditional installation methods with propane gas flame (Greenstar and Greenstar Mineral) or anchored using an adhesive mix (Greenstar TA, Greenstar SA and Greenstar SA Mineral), after the removal of the double protective film on the lower face. For dusty surfaces, we recommend pre-treating the area with a specific primer. Depending on where the waterproof layer will be used, it may be necessary to anchor the sheets using mechanical fastening systems to guarantee greater wind resistance. In ballasted layers, it is possible to install the material by simply laying it (total independence); in this case, it is always advisable to carefully assess the appropriate separation and sliding layers and, if the substrate allows it, to bond or mechanically anchor the perimeter. The side laps of the sheets must always be overlapped and sealed by 8 ÷ 10 cm and the end laps by 12 ÷ 15 cm. The membranes should also be offset lengthwise to avoid overlapping four sheets in the same place. The insulating boards are usually laid by either applying the adhesive in dots and dabs or continuous lines, or dry, after first laying the vapour barrier layer and then, anchored mechanically or with a top ballast

layer. These indications are outlined in **General Membrane Installation Manual**. For further technical information, download our manual from www.generalmembrane.com or contact our technical department.

Storage method

Keep the material covered. Keep the rolls upright on pallets or on flat surfaces raised off the ground. Do not stack pallets. Be careful to avoid violent impacts.

In the event of extremely low temperatures, transport the material at a temperature of ≥ 5 °C and store it for at least 24 hours before installing it. The insulating boards should be stored horizontally in a covered area and slightly raised off the ground.

Warnings and requirements

Make sure that the installation surfaces are dry, clean and free from oils or crumbly powders. There must be no significant hollows or rough areas on the substrate and it must be slightly inclined to guarantee rainwater run-off. Cementitious surfaces should be pre-treated with a specific bitumen primer before laying the membrane.

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