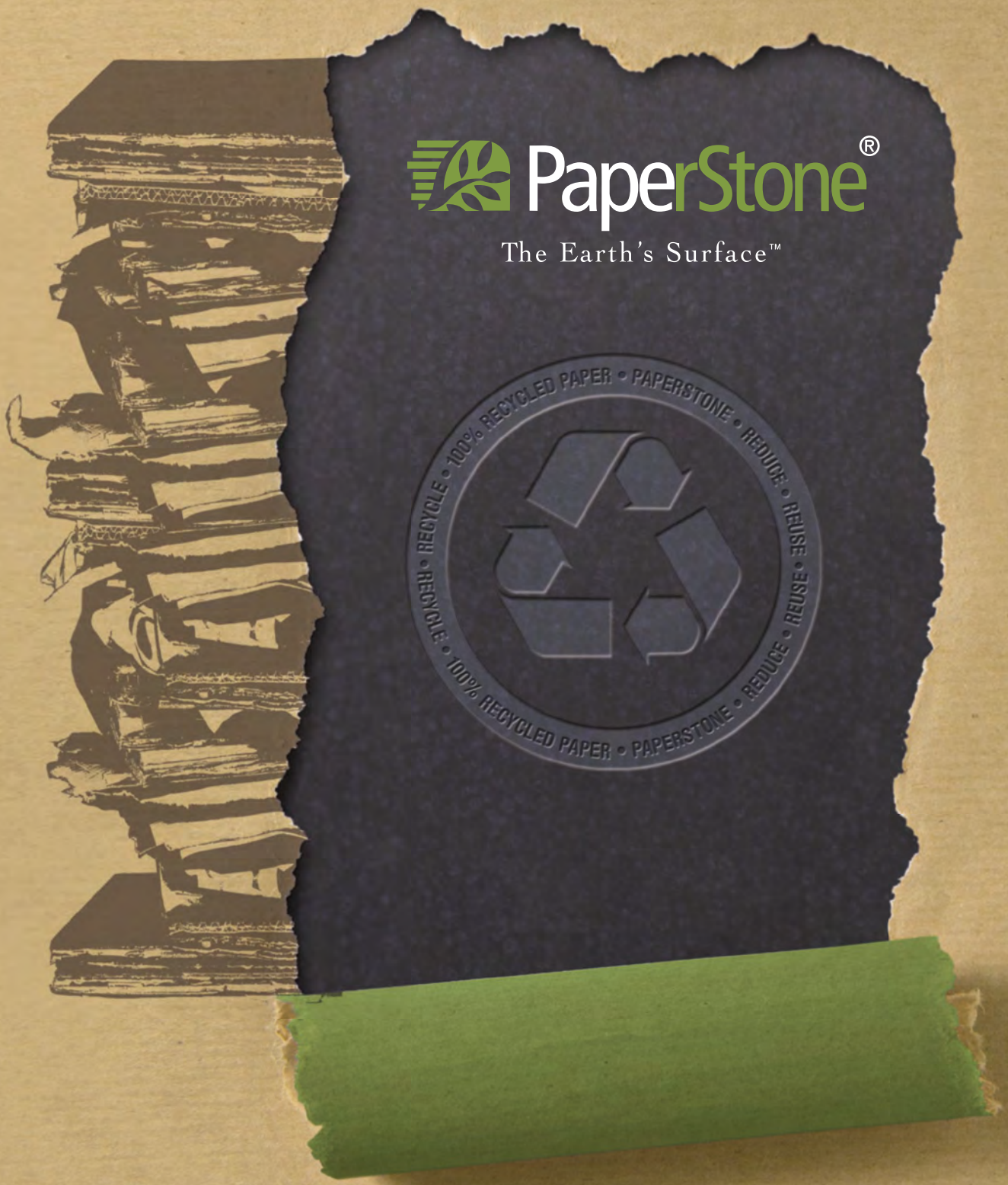


PaperStone® Why it's so Green?

PaperStone®

Its origins.

Phenolic resins have existed for a long time. DuringWorld War II, the British fighter plane "Spitfire" had a fuselage made in a composite material composed of phenolic resins and flax fiber.

It is not by chance that phenolic composite materials have always been well-known and appreciated for their performance qualities. The basic components of phenolic resins and cellulose (or other fibers) have superior resistance to tension, excellent elasticity, resistance to compression, to bending and impact, as well as the best resistance to humidity absorption and basically nonexistent flammability.

Krishan Sudan,
expert in phenolic resins

After a long, respectable career recognized throughout the academic world, Krishan Sudan, the technical director of Paneltech, a company later taken over by Little Green LLC (the current producer and holder of the PaperStone license), was undoubtedly an authority in the design and production of phenolic resins.

Born in India, Krishan immigrated to Germany, where he spent his youth researching and designing safe synthetic composite resins and paper coatings.

He then decided to export his research and ideas, concentrating on what was known as "safe chemistry" at Canadian, Italian, Japanese and North American companies, constantly striving to find the best technical solutions for creating exceptionally resistant, safe resins from waste materials for a wide range of applications.

Starting in 2002, Krishan began collaborating with the then producer of PaperStone®, Paneltech, founding a new laboratory for research and development in productive systems for composite resin materials, with subsequent creation of a resin production plant.

Applying experience gained in over 40 years in the study and development of high-performance natural resins, he began to produce a new phenolic resin derived from industrial sub-products.
This was the origin of the great revolution called PetroFree™, which we can find today in the production of PaperStone® panels.
It is a totally ecological material, designed and produced for use in interiors, and more in general for eco-sustainable construction; a true technological and cultural revolution at the same time

The circular economy.

Producing PaperStone® means much more than creating a technologically advanced and innovative material.

Since its founding in 1996, Paneltech, the producer and license holder of the PaperStone® brand, immediately had an important objective, which at the time was absolutely ambitious and futurist: developing products and production systems with ZERO IMPACT.
Today, after more than 20 years, we can affirm that not only the initial objective was fully achieved, but in some areas, the company went beyond, going much farther than original expectations.

PaperStone® is a totally ecological and natural material obtained through recycling raw materials, including FSC® certified recycled paper and cardboard, soaked in a phenolic resin, which in contrast to traditionally used resins does not contain any petroleum derived ingredients, therefore given than name "PetroFree™".

PaperStone®

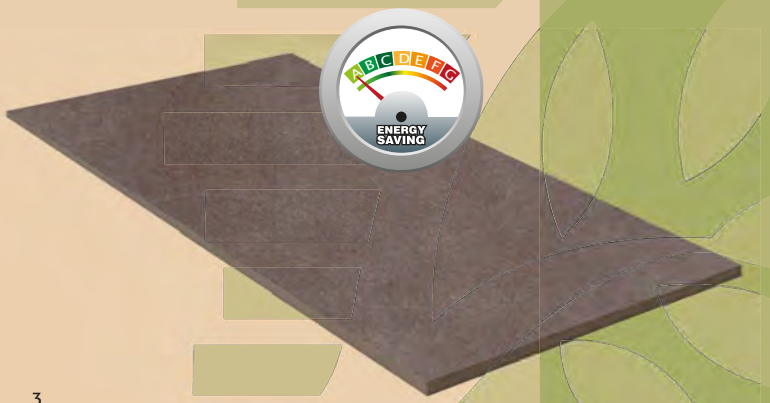
Saving energy and resources.

Producing a technically advanced and evolved material in terms of energy savings is not simple. PaperStone® does it all.
The "evolved" thought behind thePaperStone® project and the possibility to create real energy savings are demonstrated by the production data for this material, confirming respect for the environment and low environmental impact.

Just imagine that for the production of each slab of PaperStone® (366 x 152 x 2.5 cm.) in respect to a traditional composite product derived from traditional virgin fiber and classic non-ecological resins available on the market, it is possible to save:

616.5 (2,3337 liters of waters) gallons of waters
1.000.000 BTU's of energy
65,5 pounds (29,7 kg) of solid waste
127 pounds (57,6 kg) of greenhouse gases
27,5 pounds (12,5 kg) of petroleum-based phenol

Data obtained by using an EPA energy use/savings calculator.



PaperStone®

And the LEED® standard.

PaperStone® is the only material for interior architecture certified for its 100% recycled paper content. It is also certified in accordance with the strict standards of the Forest Stewardship Council (FSC®) for the Smartwood Program of the Rainforest Alliance™.
PaperStone® can contribute to qualification of a project to acquire points for Leadership in Energy and Environmental Design (LEED®) certification. To further delve into this subject, we have reproduced the original LEED® document in Italian with information about the regulations already enforced in the United States, which have also recently been introduced and acknowledged in Italy.

PaperStone® LEED® Certification Information.

Since PaperStone® is a product certified by the Forest Stewardship Council standards in the Smartwood program of The Rainforest Alliance, using and inserting PaperStone® into the technical specifications for a construction project contributes to acquisition of Leadership in Energy and Environmental Design (LEED®) points through certification of the building.
The LEED® Green Building Council Rating System developed by the U.S. Green Building Council under contract with the U.S. Department of Energy is a voluntary standard for ecologically responsible development, low emissions, high performance, sustainable buildings with low environmental impact.
LEED® certification refers to the entire building project; the materials and products used in the building are not individually certified. Through a strict inspection process conducted by third parties, the Green Building Council Institute (GBCI) determines if the project, and therefore the building, can be cataloged as "low environmental impact", obtaining specific levels of certification (Silver, Gold, Platinum Certifications).

Conference room and reception area at ClimateWorks Foundation in San Francisco, with the conference table created in PaperStone® in the foreground

Materials and Resources Containing Recycled Material: LEED® 2009 awards the use of material/products containing recycled materials. The credit level obtained depends on the percentage specifications required for recycled materials, both post-consumer and pre-consumer. Paper constituted by 100% post-consumer recycled material is used for the production of Paperstone® (except for Leather).

Interior Environmental Quality LEED® 2009 possible points awarded if all of the composite materials composed of wood and fiber derived from agriculture installed inside of the building do not contain products derived from urea resins or contain formaldehyde, and that are also tested and certified as free of VOC, including formaldehyde.

Innovation in Design Exemplary Performance: According to LEED® 2009 additional points can be awarded if the LEED® required for certification have been exceeded

Individual measuring systems were developed to assess and certify various types of buildings, including commercial, institutional, and residential, in the construction industry. Since the terminology and qualification for obtaining points varies depending on the various types of buildings, if you intend to use PaperStone® we recommend that you consult the LEED® points guide for specific requirements to verify your project in terms of points in advance. PaperStone® technical documentation will facilitate you in sending a request for obtainment of LEED® credits. We recommend that you consult the table on the following pages to ensure that PaperStone® can help you to obtain the highest possible number of LEED® credits.

PaperStone®

Contributo al raggiungimento crediti LEED® Green Building Rating System points

(Leadership in Energy and Enviromental Design)

Credit Category	Intent	Qualification Requirements	Points Earned	PaperStone® Contribution
Reference: Green Building Design and Construction, 2009 Edition [Commercial and Institutional Buildings]				
MR Crediti 4 Recycled Content	Increase demand for products that use recycled materials. Reduce impacts from the extraction and processing of virgin materials.	Use of recycled materials is at least **10%** of the total value of all project materials by cost. Calculation is based on the sum of post-consumer content + 1/2 pre-consumer content.	1	100% post-consumer recycled paper constitutes 55% of each PaperStone® composite panel by weight.*
OR . . .		... at least **20%** of the total value...	2	
IEQ Credit 4.4 Low-Emitting Materials — Composite Wood and Agrifiber Products	Reduce the quantity of indoor air contaminants that are odorous and/or unhealthy for installers and occupants.	All composite wood and agrifiber products installed in the building interior contain no added urea-formaldehyde resins. Additionally, any laminating adhesives used for material installation may not contain added urea-formaldehyde resins.	1	PaperStone® is a composite wood product that contains no added urea–formaldehyde resins and has been thoroughly tested and certified as VOC-free, including formaldehyde.
ID Credit 1 PATH 2 Exemplary	Encourage strategies for performance that greatly exceeds credit category thresholds.	MR Credit 4: An Innovation in Design credit may be earned for exemplary performance by achieving a total recycled-content value of **30%** or more.	1	100% post-consumer recycled paper constitutes 55% of each PaperStone® composite panel by weight.*

Credit Category	Intent	Qualification Requirements	Points Earned	PaperStone Contribution
Reference: LEED for Homes Reference Guide, 2009 Edition				
MR Credit 2.2 Environmentally MR Credit 2.2 Environmentally	Increase demand for environmentally preferable products containing recycled material. Reduce impacts from the extraction and processing of virgin materials.	Recycled products constitute at least **90%** of the specific building component by weight or volume (e.g., all countertop surfaces in the house) and recycled content products contain at least **25%** post-consumer recycled material or **50%** pre-consumer recycled material. Additionally, cabinet, counter and trim products may not contain any added urea-formaldehyde resins.	5	100% post-consumer recycled paper constitutes 55% of each PaperStone®~composite panel by weight.* And PaperStone®contains no added urea-formaldehyde resins. * except Leather.

Note: There is an issued statement in Italy from the North America organization GBC Italia. We therefore recommend that you contact this organization to verify the correctness of the above data and request: **http://www.usgbc.org/leed**

PaperStone®

Represents a new cultural revolution.

PaperStone® is not only a new generation ecological surface. PaperStone® is much more. PaperStone® represents a new culture and a new way of interpreting and designing new surfaces for interior architecture.

PaperStone® has also been closely collaborating for several years with the most important non-profit organizations for the protection of the environment at a global level.
We would therefore like to tell you about our commitment by describing the most significant of these.

PaperStone® Features

General information

What makes PaperStone® so Green

Let's Green your Projects™

PaperStone® Applications

Kitchen | Bathroom | Furniture | Objects

Restaurant | Public Space | Toilette | Chemical Laboratories

To find out more

Books

Dalla Culla alla Culla
Italian Edition
Editor : Blu Edizioni Srl

Cradle to Cradle
Remaking the way we make things
Rivedere il percorso per fare le cose
Authors : Michael Brauncart - William Mc Donough Editore : North Point Press

In the bubble
Design per un futuro sostenibile
Design for a sustainable future
Author : John Thackara
Editor: Umberto Allemandi & C.

Green marketing
Il manifesto
The Manifesto
Author : John Grant
Editor : Francesco Brioschi

Capitalismo Naturale
La prossima rivoluzione industriale
The next industrial revolution
Authors : Paul Hawken, Amory Lovins L
Editor : Hunter Lovins
Edizione Ambiente

PaperStone®

RESISTANCE
PaperStone® is also used for producing furnishings and household items that are particularly resistant to accidental scratches and abrasion in frequently used areas. It will not peel apart, it easily supports stress from daily use and also resists high temperatures. No superficial changes have ever been recorded at temperatures up to 180 degrees centigrade. More information is available on the **PaperStone®** website.

HYGIENIC
PaperStone® is non-porous, compact through its entire thickness*, and can be installed with virtually invisible joints. **PaperStone®** surfaces are not subject to proliferation of bacteria and fungi. It is also certified as a surface suitable for contact with and preparation of foods by the American certifying body NSF® and according to European standard EC 1935.
*eccept "Design Collection range"

REPAIRABLE
PaperStone® can be repaired, as well as easily cleaned and maintained over time thanks to the use of Osmo® Top Oil, a protective oil that restores the surface, also giving it a protective coating that facilitates cleaning and hygiene in areas destined for restaurant use and food preparation. Damages caused by improper use can also be easily repaired directly on-site. In extreme cases it is also possible to perform a total restoration of the entire surface.

NONTOXIC
PaperStone® was tested and certified as a totally ecological, nontoxic material without any emissions of VOC (Volatile Organic Compounds). Thanks to these characteristics, it is used in public areas to cover large surfaces and for work counters in hospitals and chemical laboratories.

SOLID COLOR
The coloring for each single slab of **PaperStone®** does not stop at the surface, but permeates the entire thickness of the material, permitting total restoration of damaged surfaces when necessary.

VIRTUALLY INVISIBLE JOINTS
The possibility to create virtually invisible joints and continuous surfaces makes it ideal for creating complex projects with limitless design options. Very long counters can be produced in the laboratory and transported to the destination, installed and assembled to create a continuous surface. The edges can be designed to give the piece a thicker appearance in respect to the actual depth used to build the counter (single unit borders), an ever more sought-after feature in Solid Surfaces.

PROCESSED LIKE WOOD
PaperStone® can be processed just like wood using the same traditional tools. Authorized **PaperStone®** transformed laboratories are fabbricators or NCN are primarly woodworking carpentry businesses, specialized and equipped for this new material.

WARM NATURAL COLORS
The colors of **PaperStone®** give spaces a natural, harmonious effect, typical of materials taken from nature. This is the result of a surface specifically designed and created using only natural products, including recycled paper and cardboard with natural resins.

ECOLOGICAL
PaperStone® is among the most ecological products available on the market today for producing furnishings and furniture, and more generally for interiors. We recommend that you request specific documentation for your needs, and we will be happy to discuss your specific requirements with regard to **PaperStone®**.

PaperStone®
The Earth's Surface™

www.paperstone.eu - info@paperstone.eu