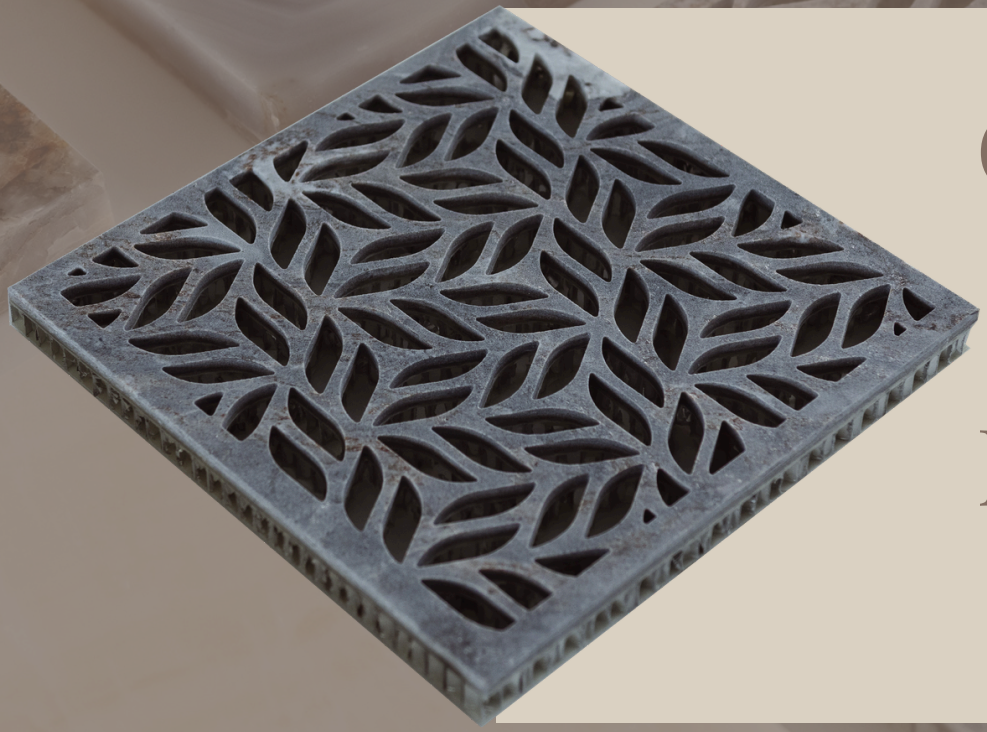
NC MARMI
MARBLE TECHNOLOGIES



Comparative LCA of Lightweight Marble systems

LCA PROVEN SOLUTION
VERIFIED
2026
Water Revolution Foundation

Company information

NC MARMI
MARBLE TECHNOLOGIES

www.ncmarmi.com

NC Marmi di Cescutti Edi S.r.l
Via Goffredo Mameli 11, 33041 Aiello del Friuli (UD)



NC Marmi is an Italian company specialised in the **technological processing of marble and natural stones**. Born from experience and passion refined over time, it has become a benchmark in the field of stone design and material engineering, with a vision focused on innovation, research and sustainability.

Specialising in lightweight, heated, and backlit marble solutions, NC Marmi collaborates with architects, designers, and international shipyards to create custom interiors, furnishings, and surfaces for yachts, private jets, and luxury trains. Every project reflects the excellence of Made in Italy a perfect balance of aesthetics, functionality, and innovation.

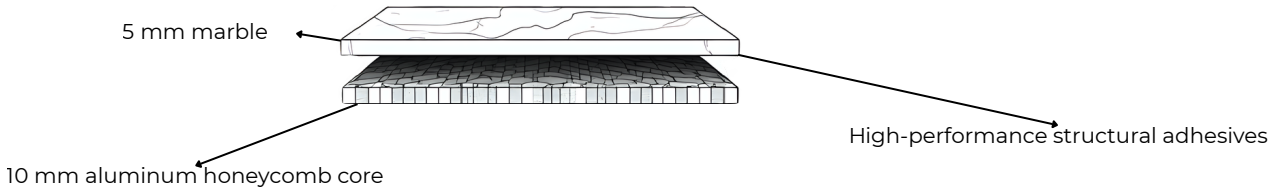
2B TO-BE.IT

The comparative Life Cycle Assessment (LCA) study was performed by 2B Srl (www.to-be.it) in collaboration with NC Marmi di Cescutti Edi S.r.l.

Product information

Product description

The Lightweight Marble 10+5 system represents one of the most advanced structural configurations developed for high-end architectural and interior applications.



Natural beauty of stone + Mechanical performance = High mechanical integrity, long-term durability, and outstanding flatness tolerance, making it ideal for applications where both performance and aesthetics are critical.

The aluminum honeycomb core, derived from aerospace technology, ensures optimal rigidity and resistance while drastically reducing overall weight up to 70%, lighter than a conventional solid marble slab. This configuration improves bending strength, impact resistance, and dimensional stability, even in demanding environments subject to vibration, load, or temperature variation.

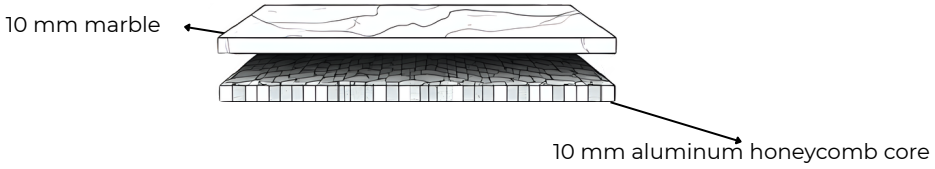
The Lightweight Marble 10+5 panel is suitable for a wide range of uses from marine interiors to architectural cladding, furniture design, and custom installations. Its technical configuration allows easy handling, installation, and integration into complex geometries without compromising the elegance or authenticity of the natural stone surface.

The 10+5 system embodies the perfect synthesis of engineering precision and Italian craftsmanship, redefining how marble can perform in contemporary design.

The Lightweight Marble 10+5 system obtained an Environmental Product Declaration (EPD).

Business as Usual (BAU) product description

The Lightweight Marble 10+10 system is made of 10 mm aluminium honeycomb core and 10 mm marble panel.



Comparative LCA information

A comparative LCA study is carried out between the Lightweight Marble 10+5 system and 10+10 system to demonstrate that the environmental impact of Lightweight Marble 10+5 system is lower than the traditional one.

Declared unit

The declared unit is **1m² of panel (including packaging).**

	Lightweight Marble 10+5 system	Lightweight Marble 10+10 system
Thickness	15 mm	20 mm
Area density	15.53 kg/m2	28.65 kg/m2

As the Lightweight Marble 10+5 system is thinner than the 10+10 system, it has a lower weight per square meter and could therefore be considered a suitable option for all those applications where weight is a significant factor, such as in the world of yachting or aerospace technology.

LCA methodology

This LCA is conducted in accordance with ISO 14040/14044, PCR 2019:14 v2.0.1 “Construction products” and Memorandum of Understanding: Addendum 1 of Water Revolution Foundation.

Reference year 2023

Method For the assessment of the potential environmental impacts, the method used is recommended by the Water Revolution Foundation.

Database ecoinvent v3.11

LCA software SimaPro v10.2

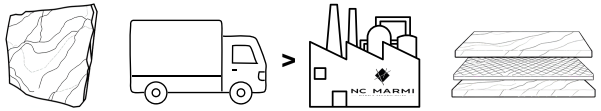
Main processes of manufacturing

The product consists of a marble slab glued to a honeycomb panel using an epoxy adhesive. The honeycomb panel is made up of two fibreglass skins impregnated with epoxy resin, separated by aluminum cells. The marble slab undergoes several processing steps to achieve the desired thickness.

System boundaries

The system boundaries of the study are “from cradle to grave”. The considered phases in the study are the acquisition of raw materials, their transport to the production site, the production stage, distribution, installation, use and end-of-life.

A1-A3



Product stage

Extraction of natural resources, production of raw materials used in products and packaging, energy consumption of production, transportation of raw materials and packaging to production plant, production operations, water consumption, waste production and disposal.

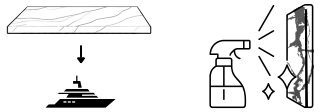
A4-A5



Construction process stage

Distribution and installation of product.

B1, B2 and B7



Use stage

Use and maintenance of product.

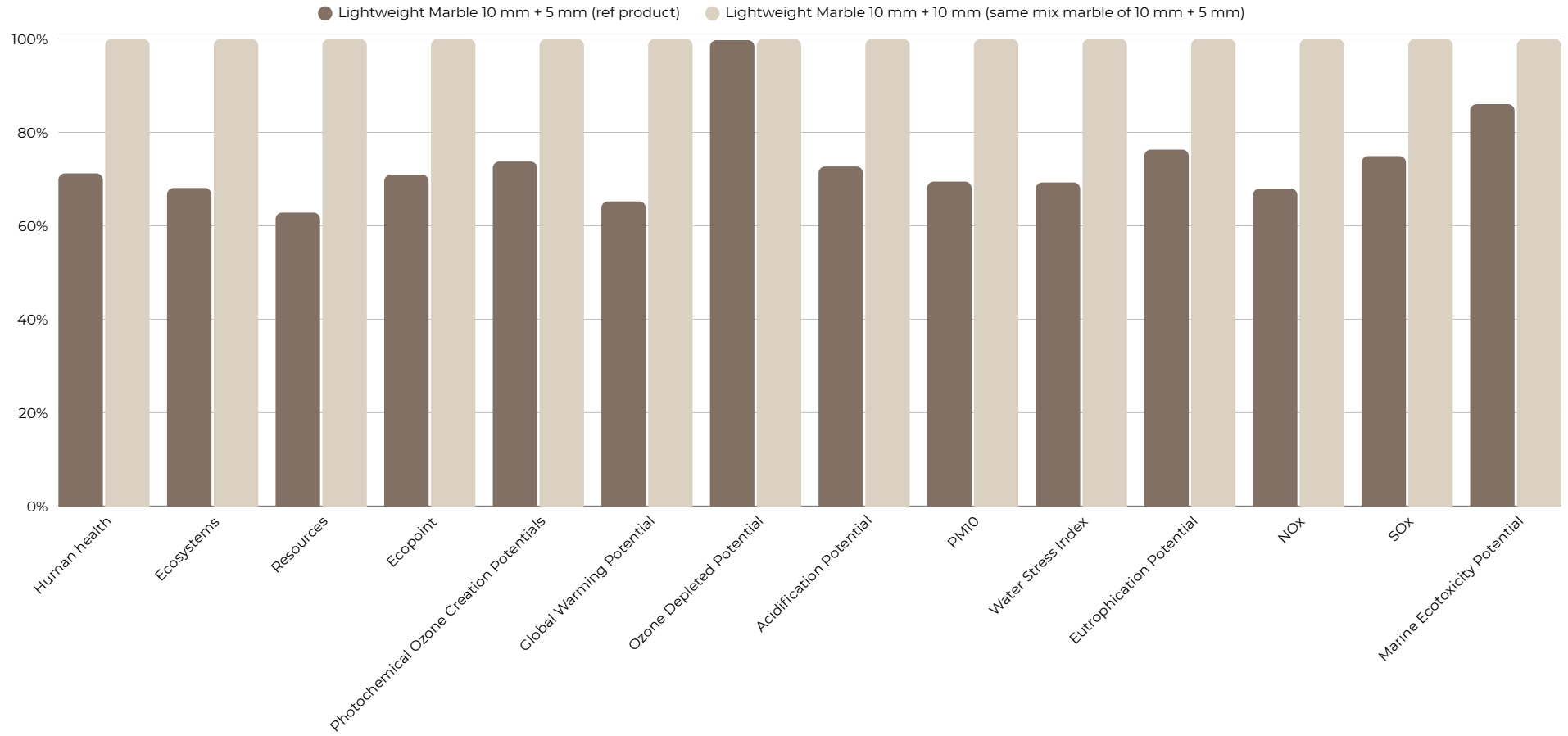
C1-C4



End-of-life stage

Product disposal.

Results



The Lightweight Marble 10+5 system has the lowest impact in 10 out of the 10 impact categories and Ecopoint categories comparated to Lighweight Marble 10+10 system (with the same marble mix). It shows a variation ≥14% in 9 out 10 categories (for “Ozone Depletion Potential” 0.25%)*.

The reduction in environmental impact was ascertained by performing a comparative LCA study between the product under review and its mainstream version at the time of release.
The Water Revolution Foundation (WRF) stamp is awarded to the specific solution Lightweight Marble 10+5 System by NC Marmi, affirming its reduced environmental impact over its entire life cycle and therefore being more environmentally sustainable.

**For the innovative product to qualify, it must demonstrate an improvement of ≥10% compared with the BAU in the six (6+1) environmental impact categories, with no significant deterioration of more than 5% in any of the remaining categories.*

