OSTREA

THE MATERIAL

A low-carbon material made from recycled shells, manufactured in France. A meaningful ecological and societal approach, combined with the timeless beauty of the shell.

Ecological Approach

A bio-based, recyclable, low-carbon material, made from shell waste and manufactured in France.

RENEWABLE

RECYCLED
& RECYCLABLE

LOW-CARBON

MADE IN FRANCE

Societal Approach

A societal dynamic aimed at structuring a local shellfish and industrial supply chain, supporting employment, and developing sustainable French industrial expertise.

SHELLFISH
INDUSTRY

LOCAL
AUTHORITIES

CREATION
OF 150 JOBS

INDUSTRIAL
EXPERTISE

ECOLOGICAL APPROACH

Sourced & Made in France

100% designed, sourced, and manufactured in France.
Short supply chain: French sourcing from deposits located on French coastlines and from industry.
Factory: Approximately 28 kg of shells (≈ 400 shells) per m^2, processed at the production facility near Rennes, Brittany.

Renewable

- The raw material used is renewable, with approximately 250,000 tonnes of shell waste landfilled each year in France — an abundant deposit that Ostrea transforms into a durable resource.
- The bio-based material is composed of 55% shell flakes and a mineral matrix. This matrix contains no petroleum-based binder (no plastic, no resin). It consists of a hydraulic binder, micronised shell powder, natural fibres, minerals, and plant-based additives.

Recycled & Recyclable

The Ostrea material is an inert bio-based material made from recycled shells from shellfish farming. The reuse of this shell waste reduces the volumes destined for landfill.
At end of life, the material is 100% recyclable, either internally by Ostrea, or through conventional recycling channels, particularly the construction waste stream.

Low Carbon Manufacturing

The material is an alternative to quarry extraction. Ostrea's carbon footprint is five times lower than that of traditional ceramics, at 7.55 kg CO_2/m^2.
The manufacturing process is kiln-free (unlike ceramics), limiting environmental impact (see next page), and uses water in a closed loop, enabling significantly reduced energy consumption.
Ostrea also invests in research and development of low-carbon materials to continuously improve its environmental performance and remain a pioneer in the sector.

SOCIETAL APPROACH

Shellfish industry

- Economic impact: Shells unfit for consumption are purchased from shellfish farmers, turning waste into an economic resource. Buying back these shells allows them to avoid landfill costs of €150/tonne, creating additional income.
- Diversification: We encourage stakeholders to invest in their own shell-to-flake processing lines, paving the way for sustainable revenue diversification.
- Valorisation: The reuse of shells transforms waste into a useful material. Fond of their products, shellfish farmers are receptive to this activity, which innovatively addresses a societal need.

Local authorities

- Located near Rennes, in Thorigné-Fouillard, Ostrea's factory relies on a local resource. Its supply comes from French shellfish farming, predominantly in Brittany.

- By structuring a regional supply chain bringing together producers, collectors, and industrialists, the project provides a concrete response to territorial challenges of waste management and ecological transition.

- Its rollout has been made possible thanks to the support of public and territorial stakeholders, including ADEME, the Brittany Region, and Rennes Métropole, illustrating the role of local authorities in supporting circular, locally-rooted industrial solutions.

Creation of direct & indirect jobs

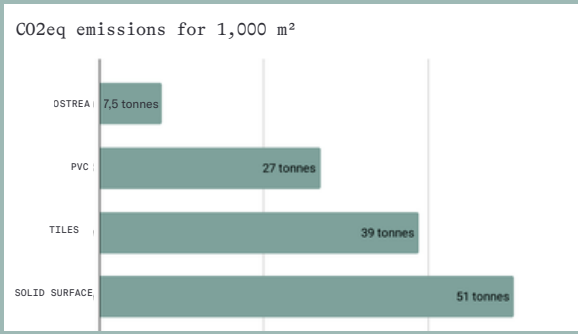
- Ostrea contributes to the creation of direct jobs, with a rapidly growing team currently numbering 25 employees between Rennes and Paris.
- The company's activities also generate indirect jobs at local and national level, mobilising a partner ecosystem including suppliers, logistics providers, shellfish farmers, and other external service providers.
- This model thus contributes to the economic vitality of the territories involved, by building lasting relationships with value chain stakeholders.

Industrial expertise

- By industrialising a patented process for transforming recycled shells, Ostrea contributes to the development of innovative industrial expertise in the field of low-carbon materials.
- The operation of its production site near Rennes illustrates the ability to transform an R&D innovation into an industrial solution, recognised by public authorities and part of a territorial reindustrialisation dynamic.

LIFE CYCLE ANALYSIS

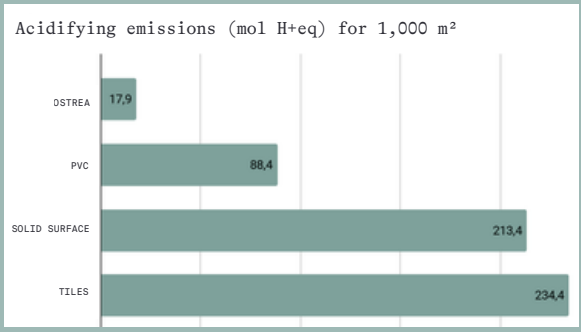
Carbon Footprint



CO_2 equivalent emissions (kg CO_2eq) measure the contribution of a product or activity to climate change, by summing the effect of all greenhouse gases (CO_2, methane, etc.) into a single unit. The higher the value, the greater the impact on global warming.

A human emits on average 9 to 10 tonnes of CO_2eq per year (across all uses: housing, transport, food, consumption).

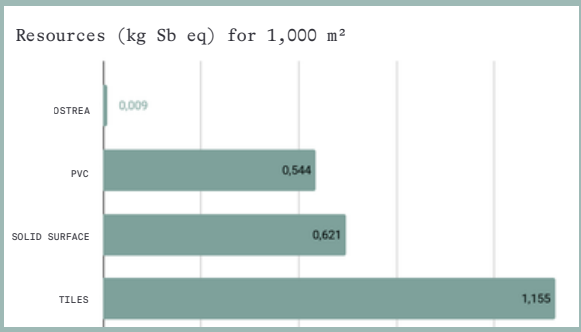
Ocean acidification



Acidifying emissions (mol H^+ eq) measure the pressure exerted by a product or activity on soils and ecosystems, via atmospheric pollutants capable of acidifying the environment (air, soil, water). The higher the value, the greater the risk of ecosystem degradation.

A human generates on average approximately 40 to 60 mol H^+ eq per year, across all uses (transport, heating, food, consumer goods).

Consumption of non-renewable mineral resources



The Resources indicator (kg Sb eq) measures the consumption of non-renewable mineral resources associated with a product or activity, taking into account their scarcity and extraction difficulty. The higher the value, the greater the pressure on natural resources.

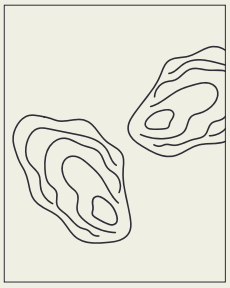
A human consumes on average the equivalent of 0.02 to 0.04 kg Sb eq per year (metals, equipment, electronics, construction, consumer goods).

ENVIRONMENTAL & HEALTH DECLARATION SHEET - FDES

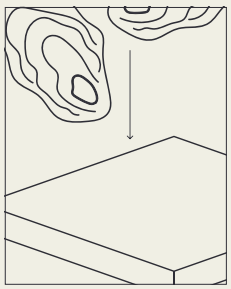
Planned for 2026

LOW-CARBON MANUFACTURING PROCESS

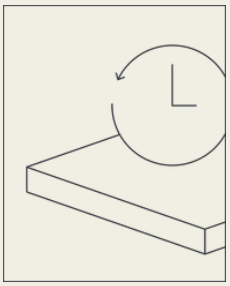
001 Collection & cleaning of shells from shellfish farming, then crushing into flakes



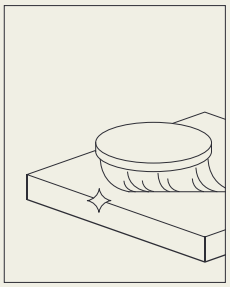
002 Assembly of shell flakes with a patented mineral matrix *(resin-free)*



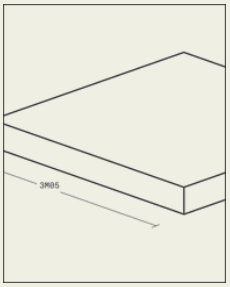
003 Hardening phase / 30-day curing *(no pressing or firing)*



004 Polishing & surface treatment against stains



005 Custom cutting for floor tiles, worktops, and furniture panels



SUMMARY

---

001 Ostrea is committed to reducing its carbon footprint.

002 Ostrea is based on a circular model, using abundant and renewable waste deposits from industry.

003 Ostrea promotes short supply chains, with exclusively French production and sourcing.

Ocean-born surfaces

OSTREA