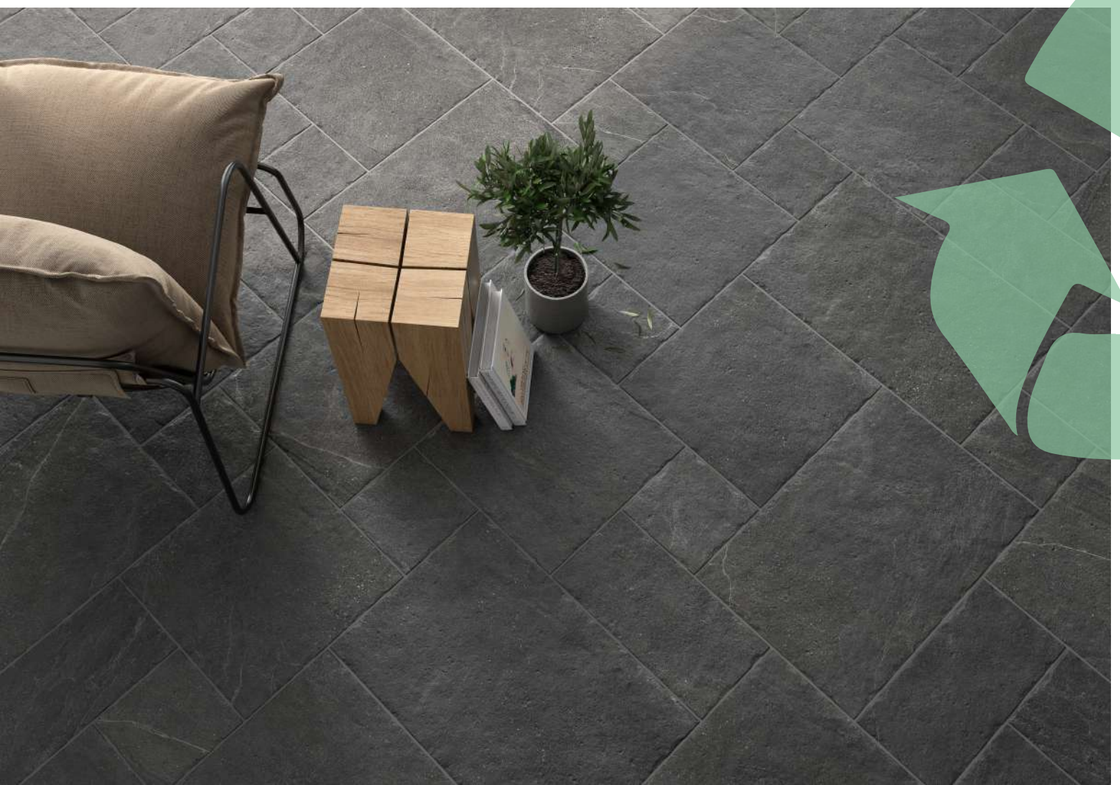
TILE OF SPAIN

Spanish ceramic tiles

Sustainable and circular alternative



GENERALITAT VALENCIANA
Conselleria de Hacienda y Modelo Económico

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Asociación Española de Fabricantes de Azulejos y Pavimentos Cerámicos

1 INDUSTRY AND PROCESSES

THE SPANISH CERAMIC TILE INDUSTRY AND ITS ENVIRONMENTAL PERFORMANCE

TILE OF SPAIN

The Spanish ceramic tile sector has been adopting technological and innovative improvements in its production processes in a bid to achieve a net zero level of greenhouse gas emissions by

And to optimise processes in the areas of raw materials

- RAW MATERIALS
- WATER STEWARDSHIP

FIGURES

137
COMPANIES

17.180
WORKERS

4.855 M€
TOTAL SALES

3.655 M€
(76%) EXPORTS

185
COUNTRIES

2021 DATA

ACTIVITIES

- HIGH-EFFICIENCY KILNS
- **100%** OF RAW MATERIALS PREPARED USING HEAT FROM COGENERATION
- **100%** OF WASTE FROM THE PRODUCTION PROCESS RECYCLED
- REDUCTION IN THE USE OF RAW MATERIALS
- **100%** OF WASTE WATER RECYCLED AND RECOVERED
- Development of a sectoral EPD for ceramic tiles at the european level, covering a representative sample of spanish production

2

PRODUCT

CHARACTERISTICS OF THE SPANISH CERAMIC TILE

TILE OF SPAIN

NATURAL, FREE FROM PLASTIC AND TOXIC SUBSTANCES

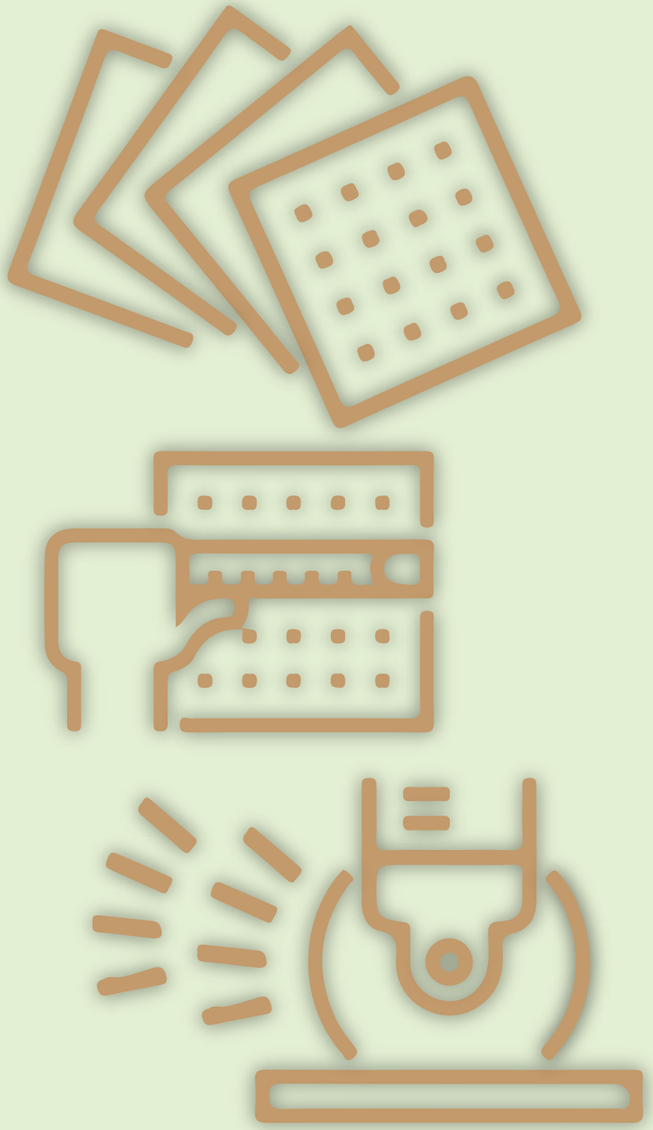
Composed of inorganic mineral materials, water and fire. Composition free from toxic substances and emissions

LOCAL

The raw material used (clay) is found in abundance in nature

HYGIENIC, NON-ALLERGENIC, ASEPTIC

Waterproof, non-harmful material that doesn't transmit odours or allergens



EASY TO MAINTAIN

Easy to clean, without the need for harsh chemical products, benefiting indoor air quality

FIRE RESISTANT

Naturally non-flammable material, doesn't emit toxic fumes when exposed to fire

DURABLE AND LONG-LASTING

Resistant to high and low temperatures, water and humidity, as well as contact with aggressive chemicals. Long-lasting

ENERGY EFFICIENT

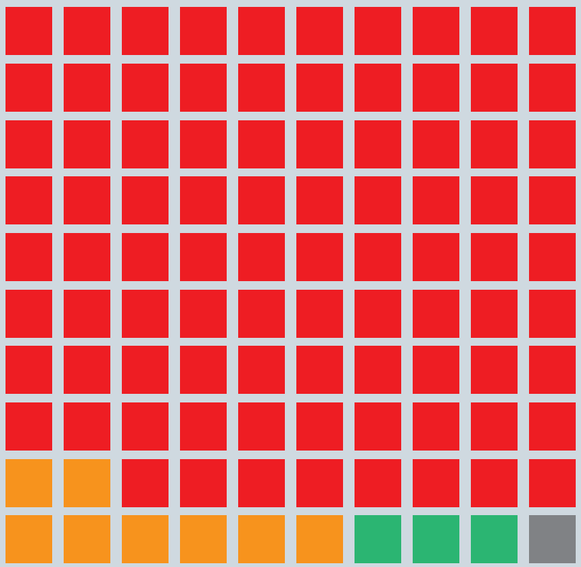
Confers thermal and acoustic isolation properties, and possesses thermal inertia and conduction capabilities

THE POTENTIAL OF SPANISH CERAMIC TILE IN A CIRCULAR ECONOMY

TILE OF SPAIN

3 LIFE CYCLE ASSESSMENT

GLOBAL WARMING POTENTIAL IN EACH PHASE OF THE LIFE CYCLE



BENEFITS OF CERAMIC TILE

- **Low environmental impact** compared to other alternatives
- **Composed of healthy materials** and can be **100% recyclable**
- **Long-lasting** with a great circular potential to be capitalised on
- **Backed by a sector that is committed** to continuous improvement

Thanks to the environmental performance of the Spanish ceramic tile industry and the intrinsic characteristics of this material, ceramic tile has been configured as a product aligned with the European and Spanish objectives of the

CIRCULAR ECONOMY

Its extensive useful life, estimated at 50 years, means that ceramic tiles require fewer replacements, which contributes to a reduction in the use of virgin raw materials and the greenhouse gas emissions associated with manufacturing them.

4 CONSCIOUS CHOICE

COMPARISON OF FLOOR COVERINGS

TILE OF SPAIN

DURABILITY

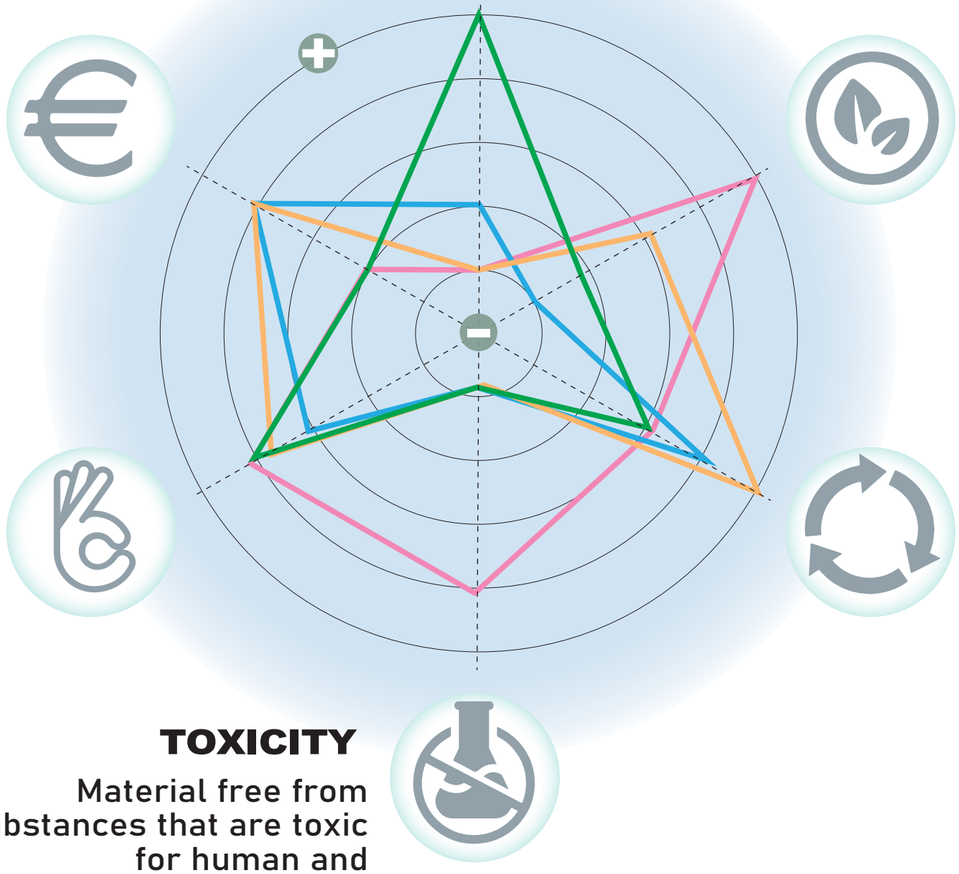
Potential useful life of the product. The longer a material lasts, the lower its environmental impact

COST

This parameter, together with environmental criteria, can be useful when it comes to choosing more sustainable alternatives

ENVIRONMENTAL IMPACT

Carbon footprint calculated for each material during their complete life cycle



USE PHASE

Advantages and disadvantages presented by the product during the use and installation phases

CYCLABILITY POTENTIAL

Assessment of the potential of each material's capacity to be cyclable, in accordance with the principles of the circular economy

LVT
WOOD
CARPET
CERAMIC TILE

TOXICITY

Material free from substances that are toxic for human and environmental health

CERTIFICATIONS

GREEN BUILDING

TILE OF SPAIN

LEADERSHIP IN ENERGY AND ENVIRONMENTAL DESIGN®

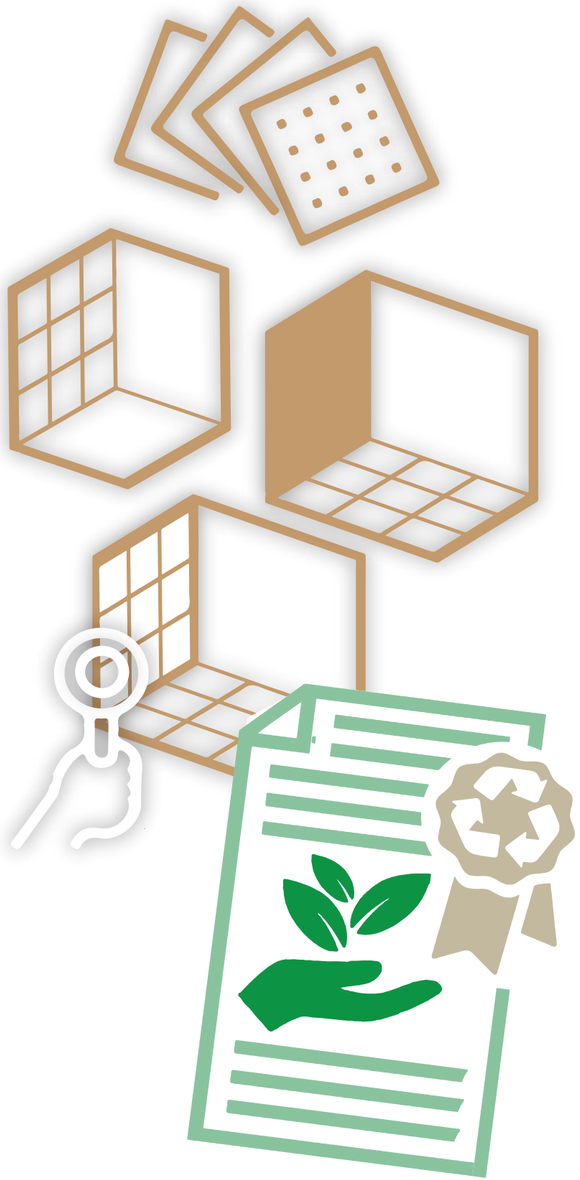
International programme of North American origin with the greatest impact and recognition at a global level. It covers different typologies of spaces and reviews multiple areas of sustainability

BREEAM®

Certification programme of English origin present in over 90 countries with more than 500,000 certified buildings. It covers different typologies of buildings and assesses multiple areas of sustainability

INTERNATIONAL WELL BUILDING INSTITUTE®

A programme of North American origin with international scope, it is a newer certification and complements those mentioned above, focusing on the health and well-being of the buildings' occupants



DGNB®

International standard of German origin for the development of buildings, interior spaces and urban districts. It provides a system to implement, measure and compare sustainability applied to built spaces

VERDE®

Spanish sustainability assessment tool principally for new residential and corporate buildings. Its application is concentrated within the Spanish building sector, based on the German DGNB® evaluation system

PASSIVHAUS®

Central European standard focused on reducing the energy consumption of buildings as much as possible while maintaining high levels of comfort in their interiors. Highest implementation seen in Europe and North America

PRODUCT

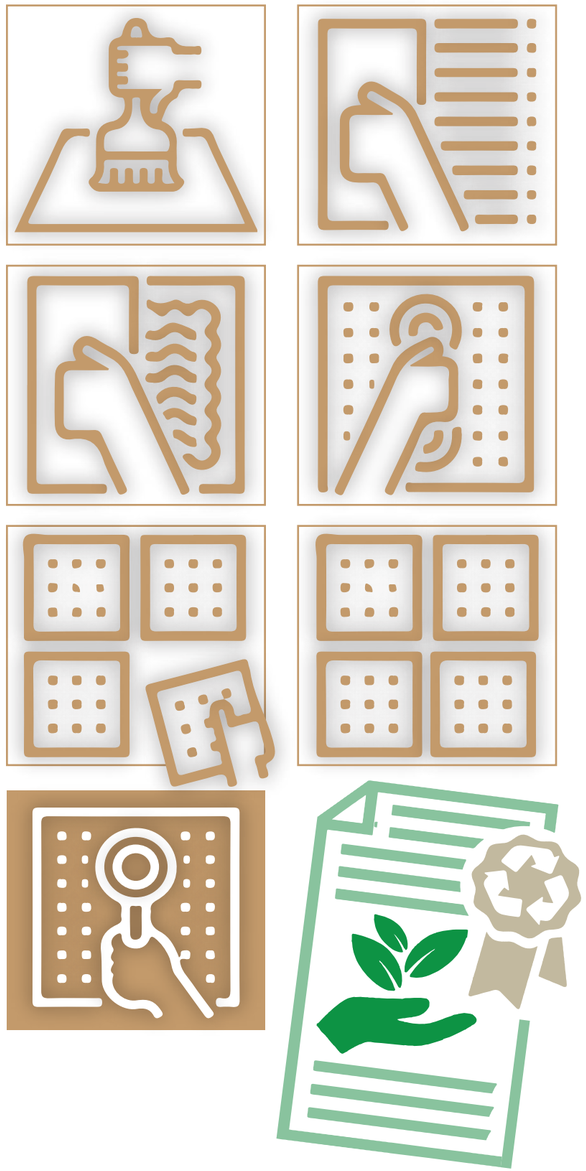
CERTIFICATIONS

CRADE TO CRADLE CERTIFIED®

Internationally-recognised multi-attribute programme, a benchmark in the circular economy. It assesses products and their manufacturing process from the perspectives of their impact on the health of humans and the environment, the circularity of materials, and the corporate responsibility of manufacturers

EU ECOLABEL

Programme developed by the European Commission to recognise sustainably-designed products. The products assessed must comply with the most relevant criteria of the main international green building programmes and be applied within Europe



GREENGUARD® CERTIFICATION

An international certification programme that assesses products with the aim of verifying that they meet rigorous safety and quality standards, and that they help to reduce indoor air pollution and the risk of chemical exposure for workers and users

INDOOR AIR QUALITY PRODUCT

As far as building materials are concerned, the standard has two certifications that assess to what extent they may affect indoor air quality (IAQ): the FloorScore® and the Indoor Advantage Gold – Building Materials. Both aim to promote safe and healthy spaces for people, and to provide transparency and credibility for manufacturers

5 CERTIFICATIONS

PERFORMANCE OF SPANISH CERAMIC TILES

TILE OF SPAIN

GREEN BUILDING CERTIFICATIONS

No toxic air emissions. The use of ceramic tiles makes it possible to reduce the concentration of chemical pollutants that can be detrimental to the indoor air quality of spaces

Easy to clean and colours with high solar reflectance. The use of light-coloured ceramic tiles for flooring and other surface coverings helps to mitigate the Heat Island Effect

Recyclable and made from recycled materials. Ceramic tiles include a large quantity of recycled materials in their production, and at the end of their useful life they can be easily recycled into new materials and products

Transparency and quantification of environmental impacts. The Spanish ceramic tile sector is increasingly committed to making its product information public. Numerous ceramic products have a specific EPD, and the sector has developed a sectoral EDP, which covers a large number of manufacturers

High durability. Ceramic tiles can be reused or recycled throughout their life cycle. Further, due to their over 50-year life cycle, they have a lower environmental impact compared to other types of floor coverings with shorter life cycles

Circularity. In the ceramic tile manufacturing process, residual waste and industrial waste water are reintroduced into the process at all manufacturing plants. Also, the sector is dedicated to implementing strategies to improve the circularity of its products

Impact on energy efficiency. Ceramic tile is a material with high thermal inertia, which contributes to delaying energy loss and regulating indoor temperatures. In climates with significant thermal variations it contributes to an improvement in the energy efficiency of spaces

PRODUCT CERTIFICATIONS

Material health. Ceramic tiles are free from toxic components and emissions and the Spanish sector tends to reduce the use of heavy metals in their glaze and dye formulations

Circular economy. The Spanish sector has high rates of raw material reuse in the ceramic tile production process. Additionally, ceramic tile is a material that can be easily reused or recycled at the end of its useful life

Energy management and greenhouse gas emissions. The Spanish ceramic tile industry has been committed to energy efficiency measures and the optimisation of fuel use in the manufacturing of its products. The sector uses natural gas as fuel and has high-efficiency kilns and a cogeneration power system in a bid to reduce its energy consumption and greenhouse gas emissions

Water resources. The sector treats and recovers practically 100% of water used, so that it remains in the production cycle, without generating any negative impacts in terms of soil or water pollution

6 SUSTAINABLE DEVELOPMENT

THE SPANISH CERAMIC TILE INDUSTRY'S ALIGNMENT WITH THE UN 2030 AGENDA

TILE OF SPAIN

ON ACCOUNT OF:

- **All the inherent characteristics of ceramic tile**
- **The continued efforts of the ceramic tile industry to reduce the sector's emissions and consumption of virgin raw materials**
- **A commitment to technology and projects based on R&D&I**

The Spanish ceramic tile industry has demonstrated a substantial response to the Sustainable Development Goals (SDGs) set out by the Agenda of the United Nations (UN) for the year 2030 (2030 Agenda).

TILE OF SPAIN

Spanish ceramic tiles

This document is a summary of the sectorial report “Environmental and circular analysis of Spanish ceramic tiles”.

For more information, visit:
www.ascer.es

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