ENVIRONMENTAL SUSTAINABILITY

Since Grespania's founding over forty years ago, one of its key values has been respect for the environment. Throughout its history, it has been firmly committed to developing strategies aimed at minimizing the impact of its production processes on the environment.

Grespania has been a pioneer in developing policies on environmental sustainability. True to this commitment, it has implemented various environmentally-friendly programmes, such as the installation of its wastewater treatment system, the cogeneration project or planning its tile manufacturing plant in line with the zero-waste concept.

Currently, Grespania's range of products includes floor tiles that minimize the generation of waste during construction projects, to wall tiles that purify the air in the atmosphere.

ENVIRONMENTAL MANAGEMENT SYSTEM

ENVIRONMENTAL PRODUCT DECLARATION

GlobalEPD
A VERIFIED ENVIRONMENTAL DECLARATION

In order to accredit and communicate the environmental excellence of our products, Grespania has a Type III Environmental Product Declaration verified by AENOR for each type of product it manufactures (wall tiles, porcelain flooring, and large format porcelain products), all certified under the standards of ISO 14025 and UNE-EN 15804:2012+A1:2014.
These Environmental Product Declarations (EPD) provide a reliable, relevant, transparent, comparable and verifiable environmental profile, which can be used to show that a product is environmentally friendly. An EPD is based on information from a life cycle assessment (LCA), in accordance with international standards and quantified environmental data.
This use of objective data, quantified according to defined standards, helps avert misleading green marketing claims, by preventing biased or deceptive environmental information.

ISO 14001 CERTIFICATE

One of Grespania's key values has always been its respect and care for the environment. To this end, the company has put in place a structured, certified environmental management system, in line with ISO 14001 requirements and subject to annual external audits, making it possible to identify, evaluate and minimize the impact of production activity on the environment.

TÜV NORD

CERTIFICADO

Sistema de Gestión de acuerdo a la Norma

ISO 14001 : 2015

GRESPANIA, S.A.
Ctra. Castellón-Alcora, CV-16, km. 2,2
12006 Castellón de la Plana (Castellón)
España

GRESPANIA CERAMICA

con las localizaciones:

GRESPANIA, S.A., Planta de Nules:Camí Llimera s/n, N-340, km 954, 12520 Nules (Castellón) / España
GRESPANIA, S.A., Planta de Moncofa: Polígono Industrial Casablanca, Camí de Cabres, Parc. 86, 12593 Moncofa (Castellón) / España

aplica un sistema de gestión conforme con la norma arriba mencionada para el siguiente alcance

Diseño, fabricación y comercialización de baldosas y productos cerámicos.

Nº Registro del certificado: 44104/127687
Nº de informe de auditoría: 180584

Válido desde: 10.01.2018
Válido hasta: 10.01.2022

Organismo Certificador de TÜV NORD CERT GmbH

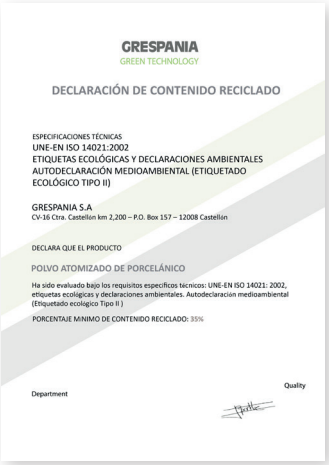
Madrid, 08.01.2019

Este certificado ha sido otorgado de acuerdo con los procedimientos de auditoría y certificación del TÜV NORD CERT y está sujeto a auditorías de seguimiento periódicas.

TÜV NORD CERT GmbH Langemarckstraße 20 45141 Essen www.tuev-nord-cert.com

DECLARATION OF RECYCLED CONTENT

The compounds that Grespania uses in the production of its products contain a high percentage of recycled material. Thus, the spray-dried powder used in porcelain contains more than 35% recycled material and the one used in wall tiles contains more than 75%.



GRESPANIA
GREEN TECHNOLOGY

DECLARACIÓN DE CONTENIDO RECICLADO

ESPECIFICACIONES TÉCNICAS
UNE-EN ISO 14021:2002
ETIQUETAS ECOLÓGICAS Y DECLARACIONES AMBIENTALES
AUTODECLARACIÓN MEDIOAMBIENTAL (ETIQUETADO ECOLÓGICO TIPO II)

GRESPANIA S.A
CV-16 Ctra. Castellón km 2,200 – P.O. Box 157 – 12008 Castellón

DECLARA QUE EL PRODUCTO

POLVO ATOMIZADO DE PORCELÁNICO

Ha sido evaluado bajo los requisitos específicos técnicos: UNE-EN ISO 14021: 2002, etiquetas ecológicas y declaraciones ambientales. Autodeclaración medioambiental (Etiquetado ecológico Tipo II)

PORCENTAJE MINIMO DE CONTENIDO RECICLADO: 35%

Department

Quality

GRESPANIA
GREEN TECHNOLOGY

DECLARACIÓN DE CONTENIDO RECICLADO

ESPECIFICACIONES TÉCNICAS
UNE-EN ISO 14021:2002
ETIQUETAS AMBIENTALES Y DECLARACIONES
RECLAMACIÓN AMBIENTAL AUTODECLARADA (ETIQUETADO AMBIENTAL TIPO II)

GRESPANIA S.A
CV-16 Ctra. Castellón km 2,200 – P.O. Box 157 – 12008 Castellón

DECLARA QUE EL PRODUCTO

BALDOSAS DE PARED EN POLVO SECADO POR ASPERSIÓN

Ha sido evaluado bajo los requisitos específicos técnicos: UNE-EN ISO 14021: 2002, etiquetas ecológicas y declaraciones ambientales. Autodeclaración medioambiental (Etiquetado ecológico Tipo II)

PORCENTAJE MINIMO DE CONTENIDO RECICLADO: 75%

Department

Quality

WASTEWATER TREATMENT

Grespania is acutely aware of the need to care for and respect our water resources, which are central to sustainable progress and fundamental to the development of healthy ecosystems and human survival. Water is a limited and irreplaceable resource, key to people's well-being; it can only be considered a renewable resource if it is well managed.
In Grespania's factories, all the water coming from the industrial process is subjected to a physical-chemical treatment process, separating out and concentrating the polluting elements. Once concentrated and rendered inert, they are recycled and reintroduced into the production process.

Grespania is a pioneer in Spain in the field of industrial treatment of liquid waste; in 1976 it installed the first physical-chemical treatment system. In 1986, it invented the "zero waste" process in the ceramic sector, recycling both ceramic waste and water from the industrial process in the spray-drying facilities. In 1996, it became the first tile manufacturer to install a reverse osmosis system for the treatment and recycling of water from the industrial process.

The water from the polishing and rectification processes circulates in a closed circuit, where it is treated by decanting the suspended solids, which are then concentrated in a filter press and subsequently recycled. The water used in the glazing lines is also treated. Its pollutants are precipitated and subsequently incorporated as inert material into the clay used to make the tiles.

All the inflows and outflows of the water treatment systems are subject to frequent analyses to determine the concentration of pollutants or the purity of the treated effluent.

ATMOSPHERIC EMISSIONS

The emission of solid particles into the atmosphere has negative effects on air quality, thus damaging human health and agricultural productivity.

Conscious of this fact, Grespania has installed baghouse filters in all processes that may produce dust, thus preventing the emission of particles to the outside. These particles are reintroduced into the production process.

NON-HAZARDOUS WASTE

All waste and defective elements from the industrial process are treated and reincorporated into the manufacturing process of our products. Notable examples of recovered waste include:

- Pieces damaged during the manufacturing process.
- Manufactured tiles that are defective.
- Sludge obtained from the water treatment process.

These waste products are checked, ground down and added in appropriate proportions to the spray-dried clay production process that takes place at the spray-drying plant owned by Grespania. This facility is legally authorized for Non-Hazardous Waste Management.

The treatment of other non-hazardous waste such as plastic, wood or uncontaminated metal waste is handled by authorized agents.

HAZARDOUS WASTE AND CONTAINERS

All hazardous waste and the containers in which it is held are properly stored, separated from other raw materials used in the production process, and subsequently delivered to an authorized waste management agent. The containers of this hazardous waste are recovered and reused by our suppliers.

COGENERATION, ENERGY SAVING

The act of using energy appropriately shows an awareness of and generosity regarding the future of one of our scarcest assets.
In its combustion-based clay drying process, Grespania uses a 5 MW cogeneration system which allows the use of natural gas not only for drying the clay, but also for generating electrical energy, thereby enabling significant savings of primary energy consumption.

For several years now, GRESPANIA has been conducting energy audits of its facilities. The aim is to optimize the energy use of existing processes and facilities and detect opportunities for energy saving and efficiency measures, before subsequently implementing the identified measures.

KYOTO PROTOCOL

The emission of certain gases poses a risk to the environment, as high concentrations of these gases in the Earth's atmosphere produce a greenhouse effect, trapping the heat from the sun's rays.

Grespania complies with the Kyoto Protocol, the most important international agreement on climate change, which regulates the emission of greenhouse gases.
This compliance has entailed the implementation of technological improvements designed to achieve maximum energy efficiency, and thereby ensure greater environmental sustainability. The new industrial systems are designed to minimize energy consumption and be as efficient as possible in terms of emissions.

PRESENCE OF VOLATILE ORGANIC COMPOUNDS IN TILES

Grespania's ceramic stoneware tiles contain no trace whatsoever of volatile organic compounds (VOCs). No VOC will be emitted during their use, under any conditions.

This is because they are manufactured by firing in an oxidizing atmosphere, at high temperatures of between 1,100 ºC and 1,200 ºC. During this firing process in the presence of oxygen, all organic compounds in the ceramic material are oxidized, with the resulting emission of combustion gases.

CONTAINERS AND PACKAGING

Packaging is key for transporting and protecting our materials; therefore, it forms an important part of our environmental policy.

All containers used in our factories are covered by the national DRS (return and refund) plan.

Grespania has signed agreements with ECOEMBES (Spanish agency responsible for the selective collection and recovery of packaging waste) and with INTERSEROH (German agency for the recovery and treatment of packaging). As a result of these agreements, these two agencies are responsible, in the Spanish and German markets, for the collection of all types of packaging used with our products (pallets, plastic straps and cardboard). The result is a significant reduction in the waste generated by our packaging.

IMPLEMENTATION OF TPM SYSTEM/LEAN MANUFACTURING

Grespania has started to implement a Total Productive Maintenance (TPM) system in its manufacturing plants. One of the reasons for doing so is to improve the efficiency of the production process and reduce the losses that occur during it, which helps to ensure that the final product is obtained with less waste, fewer losses, and is therefore more sustainable. This project affects all phases of product manufacturing, and is complemented by staff members' greater involvement in the production process and the incorporation of suggestions for how to improve it.

VENTILATED FAÇADES WITH CERAMICS

A ventilated façade with ceramic cladding by Grespania allows the insulation to be placed on the outside of the building enclosure; as a result, the building has greater thermal mass, which in turn increases its thermal inertia.

Second, the insulation is installed continuously over the entire building enclosure, preventing structural elements from becoming thermal bridges. In addition, the brackets that are attached to the enclosure to install the ventilated facade have an integrated thermal break system. This reduces the flow of heat between the inside and outside of the building.

In addition, the tile acts as a screen, reflecting a great deal of the solar radiation—especially if light colours are used—and preventing it from entering the building.

COVERLAM: CERAMIC TILES OF MINIMAL THICKNESS

Thanks to ultimate lamination and compaction technology, Grespania can produce ceramic tiles of minimal thickness (Coverlam), as thin as 3.5 mm. Among other advantages, by reducing the thickness of the pieces, less energy is required for the production and transport of these tiles.

H&C TILES

These days, one of the main threats to the environment and human health is environmental pollution due to the presence of NOx (nitrogen oxides) generated by vehicles and certain industrial processes. H&C Tile façades play a key role in removing this compound from the atmosphere.

H&C Tiles is the result of the application of Hydrotect® technology to the field of ceramics. Hydrotect® is a titanium dioxide coating that helps reduce environmental pollution and endows ceramic materials with certain advantages such as self-cleaning properties.

Thanks to the photocatalytic properties of titanium dioxide, H&C Tile facades generate active oxygen and hydroxyl ions, which transform NOx into $NO^{-}3$ and reduce the adhesion of dirt particles on the tile surface. The $NO^{-}3$ and dirt is then washed off the façade by rainwater.

H&C Tiles offer major environmental benefits. When used as ceramic cladding on the buildings in any city, they can create genuine islands of decontamination that purify the air by means of a chemical reaction occurring on the tile surface. A group of buildings with 10,000 m2 of façades covered with H&C Tiles has the same air purification capacity as a forested area equivalent in size to nine football pitches; as such, the NOx removal is equivalent to the amount emitted by 740 cars in one day.

The process used by H&C Tiles for exterior applications requires no connections, mechanisms, or energy other than sunlight to activate the chemical reaction on its surface. Therefore, by clearly improving air quality and keeping surfaces clean for longer, it is a solution that helps protect people now and meets the highest standards required to ensure the future sustainability of our planet.

LEED CERTIFICATION

Grespania S.A., a company that displays its concern for sustainable architecture, helps to improve the energy efficiency of existing buildings or new builds by incorporating the new LEED standards throughout the lifespan of its products, from the design phase to final installation.

The LEED (Leadership in Energy and Environmental Design) standard is the most widely-used building certification system in the United States, and it is becoming increasingly widespread in more than 95 countries worldwide, including Spain, the United Kingdom, Canada, Switzerland, Germany, France, Italy, Norway and Poland. Developed by the U.S. Green Building Council, LEED credits certify the requirements for a building to be able to "operate" in energy self-sufficiency and sustainability mode, and to generate minimal environmental impact throughout its entire life cycle.

The system is based on assigning credits or points for each of the requirements that characterize the sustainability of the building. The total number of points determines the level of certification awarded. There are 4 possible qualification levels for buildings:

- 40 to 49 points: CERTIFIED
- 50 to 59 points: SILVER
- 60 to 79 points: GOLD
- More than 80 points: PLATINUM

As can be seen, it is the buildings that obtain LEED certification and not the individual products used, but Grespania's ceramic tiles contribute to the achievement of the following LEED credits:

• MR 1.2 BUILDING REUSE
One of the main properties of ceramic is its durability, meaning its lifespan matches that of the building where it is installed. This can help a construction project score 1 point, as maintaining the ceramic elements contributes to building reuse.

• MR 2.1 AND 2.2. CONSTRUCTION AND DEMOLITION WASTE MANAGEMENT
Once a building has reached the end of its lifespan, ceramic can be used as a filler material since it is inert. If 50% or 75% of non-hazardous construction and demolition waste is recycled or recovered in a building, 1 or 2 LEED points, respectively, will be awarded.

• EXISTENCE OF AN ENVIRONMENTAL PRODUCT DECLARATION (EPD)
Up to 1 point can be scored for the use of at least 20 permanently installed products with an EPD, from at least five different manufacturers. Grespania S.A. products have Type III EPD and qualify as a complete product for the purposes of calculating credit scores.

• MR 4.1 AND 4.2. RECYCLED MATERIAL CONTENT
LEED requirements stipulate that the builder must use materials with a minimum recycled content. If the sum of post-consumer recycled content plus half of the pre-consumer recycled content represent at least 10% or more of total project materials (measured by weight), 1 point is awarded. If they represent 20% or more, 2 points are awarded.

• MR 5.1 AND 5.2. REGIONAL MATERIALS
Ceramic products can help to achieve 1 or 2 points if 10% or 20%, respectively, of the total cost of the project materials is extracted, manufactured or recovered within an 800-km radius of the project site. This reduces the environmental impact caused by the transportation of these materials.

• SS 7.1 HEAT ISLAND EFFECT
The aim is to mitigate the heat island effect (the temperature difference between cities and rural areas). Among the different strategies that LEED proposes in this section is the use of paving materials with a Solar Reflectance Index (SRI) value above 29, which earns 1 point. Since light-coloured ceramic products have high SRI values, they can be used instead of traditional exterior paving materials, minimizing thermal absorption and the heat island effect.

• EQ 4.3 LOW-VOC-EMITTING MATERIALS
There is growing concern about the potential impact of Volatile Organic Compounds (VOCs) on human health. LEED seeks to reduce the amount of indoor air in a building that is irritating or dangerous for users' health and well-being. Specifically, the use of non- or low-VOC-emitting materials can help reduce problems with air caused by the vaporization of carbon compounds. Therefore, the use of ceramic products for general tiling inside a building earns the maximum score in this category, 1 point.

• ID 1 DESIGN INNOVATION
Up to 5 points are awarded for exceeding credit requirements and/or presenting a project strategy that is not covered by the LEED rating system but that provides quantifiable environmental benefits. For example, choosing tiles with "H&C Tiles" technology can merit up to 5 LEED points.

BREEAM CERTIFICATION

Building Research Establishment Environmental Assessment Method (BREEAM®) is a system for assessing sustainability in construction projects. It was developed in the United Kingdom by the BRE (Building Research Establishment) in the early 1990s.

This private and voluntary certification assesses impacts in 10 categories: Management, Health and Well-being, Energy, Transport, Water, Materials, Waste, Ecological Land Use, Pollution and Innovation. It assigns a final score that, along with the Technical Manual on the methodology, serves as a guide to more sustainable construction both in the design phase and in the execution and maintenance phases, providing different evaluation and certification schemes depending on the type and use of the building.

The results are translated into the following overall scores: Pass, Good, Very Good, Excellent and Outstanding.

Grespania products can help achieve certification for compliance in the following sections:

- MAT 1 Life cycle impacts
- MAT 3 Responsible sourcing of materials

Grespania can provide a series of documents to developers, builders, distributors, consultants or any other agent managing the certification. It also has the necessary documents to support the requirements outlined above. The following certificates are available:

- EPD (Environmental Product Declaration) Downloadable PDF
- ISO 14001 (Environmental Management System) Downloadable PDF
- ISO 14021 (Recycled Content Declaration) Downloadable PDF

As proof of how Grespania's products and systems can help to obtain certification, the 2017 BREEAM award was won by the architectural studio Bo2 Paul Goldstein, for its building for the Royal Agio Cigars headquarters. Said building includes a ventilated facade built using Coverlam.