

GRACCO  
SURFACES

# Environmental Product Declaration

**EPD**  
VERIFIED 

## INTRODUCTION AND OBJECTIVES

This document presents the EPD for the panels of GRACCO SURFACES on behalf of Cerámicas Cuatro Palomas, in accordance with international and national standards regarding environmental product declarations.

This document is aimed at construction professionals seeking to understand the environmental characteristics of materials and their contribution to sustainability in the building sector.

The results reflect the analysis of the production, transport, installation, use, and end-of-life phases. Other objectives of this study include implementing a systematic process of continuous improvement throughout all phases of this cycle and obtaining baseline results to publish an Environmental Product Declaration (EPD).

This study has been conducted in accordance with the following regulations:

UNE-EN 15804: 2012+A2: 2020/AC: 2021. Sustainability in construction. Environmental product declarations. Basic product category rules for construction products.

UNE-EN 16757: 2023. Sustainability of construction works. Environmental product declarations. Product Category Rules for concrete and concrete elements.

## Lecture Guide

- Details for improved reading of the declaration or the data contained within.
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- The inventory display data complies with NR requirements. The units used are specified for each flow and include:
  - Kilogram "kg"
  - Gram "g"
  - Liter "l"
  - Kilowatt hour "kWh"
  - Megajoules "MJ"
  - Square meter "m<sup>2</sup>"
  - Cubic meter "m<sup>3</sup>"
  - Carbon dioxide equivalent "CO<sub>2</sub>"
  - Functional Unit "FU"
  - Chlorofluorocarbon "CFC"
  - Sulfur dioxide "SO<sub>2</sub>"
  - Phosphate "PO<sub>4</sub><sup>3-</sup>"
  - Antimony "Sb"
- Abbreviations:
  - EPD: Environmental Product Declaration
  - NR: Reference Standard
  - PCR: Product Category Rules
  - FDES: Environmental and Health Declaration Form
  - LCA: Life Cycle Assessment
  - DVR: Lifetime Reference
  - FU: Functional Unit

## **Precaution for the Use of EPDs for Product Comparison**

Construction product EPDs may not be comparable if they do not comply with NR. The NR defines the conditions under which construction products can be compared based on information provided by the EPD:

"The comparison of the environmental performance of construction products using EPD information shall be based on the product's use and its impacts on the building, considering the complete life cycle (all information modules)."

## Company Overview

Cerámicas Cuatro Palomas S.A.  
A5 km, 22.800, 28935 Móstoles (Madrid)  
www.gracco.es  
info@gracco.es

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EPD Type: Cradle-to-grave, Individual EPD  
Product Category Rules Identification: UNE EN 15804+A2 NR, providing the rules for product category definition (PCR).

Production Location: A5 km, 22.800, 28935 Móstoles (Madrid)



GRACCO SURFACES is a leading company in the sector of materials for coatings and surfaces, with a long-standing track record in developing innovative and high-quality products. Specializing in solutions that combine durability and aesthetics, GRACCO SURFACES is recognized for its commitment to excellence and innovation in every product.

With a vision focused on environmental respect, the company has implemented policies to minimize the ecological impact of its operations.

The Environmental Management System of CAP is the ultimate guarantee of its commitment to the environment. It strives to adapt to the demands of a challenging environment with a spirit of continuous improvement, aiming to exceed current legislative requirements.

CAP bases its development on international expansion, an innovative research and development program, respect for the environment and sustainability, and its ongoing corporate commitment to society and local communities, including training, equality, and workplace safety.

## Technical Characteristics Not Included in the Functional Unit

The following table shows the main characteristics of GRACCO SURFACES panels common to the nine references covered by this EPD:

CARACTERÍSTICAS	UD	VALOR
Width	mm	100 - 1.200
Length	mm	100 - 3.920
Thickness	mm	15 - 40
Flatness Tolerances	mm	≤ 0,3
Straight Angles	L < 600 mm	± 0,9
	≥ 600 mm & ≤ 1.000 mm	± 1,2
	> 1.000 mm & ≤ 3.500 mm	± 3,0
Density	kg/m <sup>3</sup>	2.301
Flexural Strength:	MPa	≥ 9,3
Fire Reaction Class	Clase	A1
Impact Resistance	Pa	3.600
Wind Load Resistance		e=20 mm   Cat. IV e=30 mm   Cat. III
Flexural strength of the cladding element	MPa	e=20 mm   9,3 Mpa e=30 mm   9,3 Mpa
Mechanical strength of the grooved cladding element		Valor medio 2.151 N  Valor característico 1.821 N
Linear thermal expansion coefficient of the cladding element	(μm/m°C)	≤ 6,1
Frost-thaw resistance of the cladding element		1,1
Thermal shock resistance of the cladding element		1,0



## GRACCO's Commitment to the Environment

At GRACCO, we take environmental respect and sustainability very seriously, striving to ensure that our environmental impact is minimal. The company recognizes the importance of reducing its carbon footprint and promotes energy efficiency and responsible resource use across all its operations.

Our production process is based on the Fourth Industrial Revolution, Industry 4.0, which greatly facilitates our path toward sustainability through process automation.

We recycle our own waste, reintegrating it back into the production process.

Our tiles and panels are replaceable and reusable, which reduces the Product Environmental Footprint (PEF) and ecological footprint based on Life Cycle Assessment (LCA).

However, in this case, we have gone a step further. We are not only committed to ensuring that our activity does not compromise future generations but also actively reverse current pollution problems with our material, thanks to the photocatalytic properties of GRACCO SURFACES.

## Policies and actions in favor of sustainability and environmental prevention

Among the main actions of GRACCO SURFACES in favor of sustainability are:

Implementation of environmental management systems based on international standards such as ISO 14001.

Use of responsible raw materials and cleaner production processes.

Optimization of waste generated during manufacturing, promoting recycling and reuse.

Constant innovation in the development of products with lower environmental impact.

Additionally, a notable feature of GRACCO is the use of photocatalytic materials, developed to improve air quality by breaking down pollutants such as nitrogen oxides (NOx) and volatile organic compounds (VOCs) when exposed to light. This technology contributes to sustainability by purifying the air in environments near buildings and enhancing quality of life.

## Environmental management.

As a provider of architectural concrete solutions for ventilated facades, we follow the principles of UNE-EN 16757:2023, which establishes guidelines for the sustainability of our products.

This standard regulates the requirements for evaluating the environmental impact at all stages of the life cycle of the products offered by Gracco Surfaces.

These are developed with a focus on resource efficiency, waste minimization, and the integration of advanced technologies to optimize their ecological footprint.

## Sustainable innovation and integration

The use of photocatalytic materials in GRACCO SURFACES products aligns with the goals of UNE-EN 15804, as these materials are not only sustainable in their production but also improve air quality by breaking down pollutants present in the environment.

Therefore, these products not only have a low environmental footprint but also actively contribute to improving the environment through the air purification system.

## Economy and waste prevention.

One of the main objectives of the company is to implement Industry 4.0 in its products and the manufacturing process.

Industry 4.0 refers to the transformation of industrial processes through the integration of advanced digital technologies and automation.

By combining these advances with the use of renewable energies, the aim is to create more sustainable and efficient production environments that are less dependent on fossil fuel energy sources, thereby contributing to the reduction of the industry's carbon footprint. Additionally, it optimizes operational costs and improves productivity, offering a more profitable economic model.

### 3. Information about EPD

The Environmental Product Declaration (EPD) is a verified document that provides detailed and transparent information about the environmental impact of a product throughout its life cycle. It is a key tool in the field of sustainable construction and allows for the quantitative and standardized assessment of the environmental performance of materials and products

#### Standards and Methodologies

EPDs are prepared following international standards, such as ISO 14025 and EN 15804 in the case of construction products. These standards ensure that the information is consistent, verifiable, and comparable among similar products.

They use the Life Cycle Assessment (LCA) methodology to evaluate impacts from the extraction of raw materials, manufacturing, use, and finally, disposal or recycling.

#### Evaluated Impact Categories.

EPDs provide information on different impact categories, such as:

CO<sub>2</sub> emissions and other greenhouse gases (carbon footprint).  
Energy consumption (renewable and non-renewable primary energy).  
Water use and other natural resources.  
Waste generation and recycling potential."

### Advantages of EPDs

They facilitate the comparison between products from different manufacturers, promoting competition in terms of sustainability.

They are essential for obtaining sustainability certifications such as LEED, BREEAM, or WELL, as they provide the necessary documentation to meet the requirements of these environmental assessment systems.

They promote the circular economy by encouraging the design of products that are more sustainable, recyclable, and have a lower environmental impact.



## PRODUCT

The GRACCO SURFACES panels are made from micro-mortar cement which gives it a structure that combines high-strength elements with aesthetic finishes, making it an ideal choice for large-scale architectural projects. It is developed for applications such as:

Facade cladding  
High-Traffic Pavements  
Interior and exterior wall cladding  
The company offers panels in various sizes, thicknesses, colors, and textures, aiming to adapt to the aesthetic and technical needs of each architectural project.

The GRACCO SURFACES panel has the European Technical Assessment (ETA 20/0316).

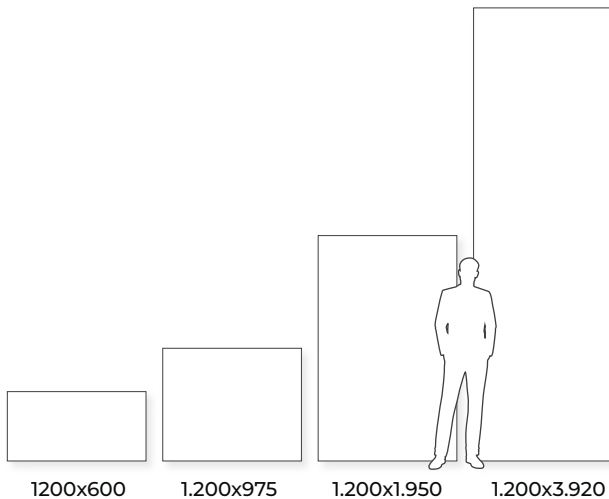


## Characteristics

### ***Varied sizes and formats.***

The panels can reach large dimensions, with sizes up to 3,920x1,200 mm, making them among the largest on the market, which allows for more impressive facade designs with fewer visible joints.

The available thicknesses range from 15 mm to 40 mm, providing options of 5 mm between models, thus adapting to the structural and aesthetic needs of each project.



### ***Strength and Durability.***

Gracco Surfaces panels are designed to be highly resistant, even under low-impact conditions, providing a robust appearance and minimizing the risk of breakage.

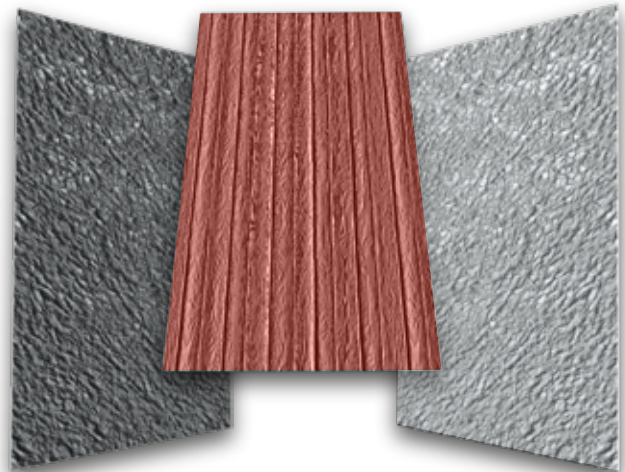
### ***Photocatalytic Technology.***

"A notable feature of Gracco products is the integration of photocatalytic materials that help purify the air. These materials react with light to break down pollutants such as nitrogen oxides (NOx), improving air quality in the surrounding environments and contributing to sustainability.

### ***Variety of Textures and Colors.***

Gracco Surfaces offers multiple options for finishes and colors, ranging from light grays to darker tones, adapting to different architectural styles and design preferences.

The surfaces can be smooth or textured, providing flexibility to create unique and customized facades.



## LIFE CYCLE

This EPD was drafted and verified in accordance with the NR.

This EPD includes the life cycle stages listed in Table 1.

This declaration cannot be compared as a draft in other programs or according to different reference documents. This EPD is not comparable to other EPDs not developed according to standard EN 15804. Similarly, environmental declarations cannot be subject to comparison if the source of the data is different (for example, the datasets), if not all relevant information modules are included, or if they are not based on the same scenarios.

The comparison of construction products will be based in the same manner, using the same functional unit at the building level (or architecture, or civil engineering work), that is, including the product's performance during the life cycle.

Product Stage	A1	Supply of raw materials	X
	A2	Supply of raw materials	X
	A3	Supply of raw materials	X
	A4	Supply of raw materials	X
	A5	Supply of raw materials	X
Product Stage	B1	Supply of raw materials	MNR
	B2	Supply of raw materials	MNR
	B3	Supply of raw materials	MNR
	B4	Supply of raw materials	MNR
	B5	Supply of raw materials	MNR
	B6	Supply of raw materials	NA
	B7	Supply of raw materials	NA
End of Life	C1	Supply of raw materials	X
	C2	Supply of raw materials	X
	C3	Supply of raw materials	X
	C4	Supply of raw materials	X
	D	Supply of raw materials	X

## AL-A3 PRODUCTION

The product stage includes the extraction of raw materials, production of additives, transportation from the supplier to the processing plant, and the manufacturing process.

### A1 Supply of raw materials:

This module takes into account the supply and treatment of all raw materials that occur before the manufacturing process. In particular, it covers the supply of mortar components and reinforcement components

### A2 Transport:

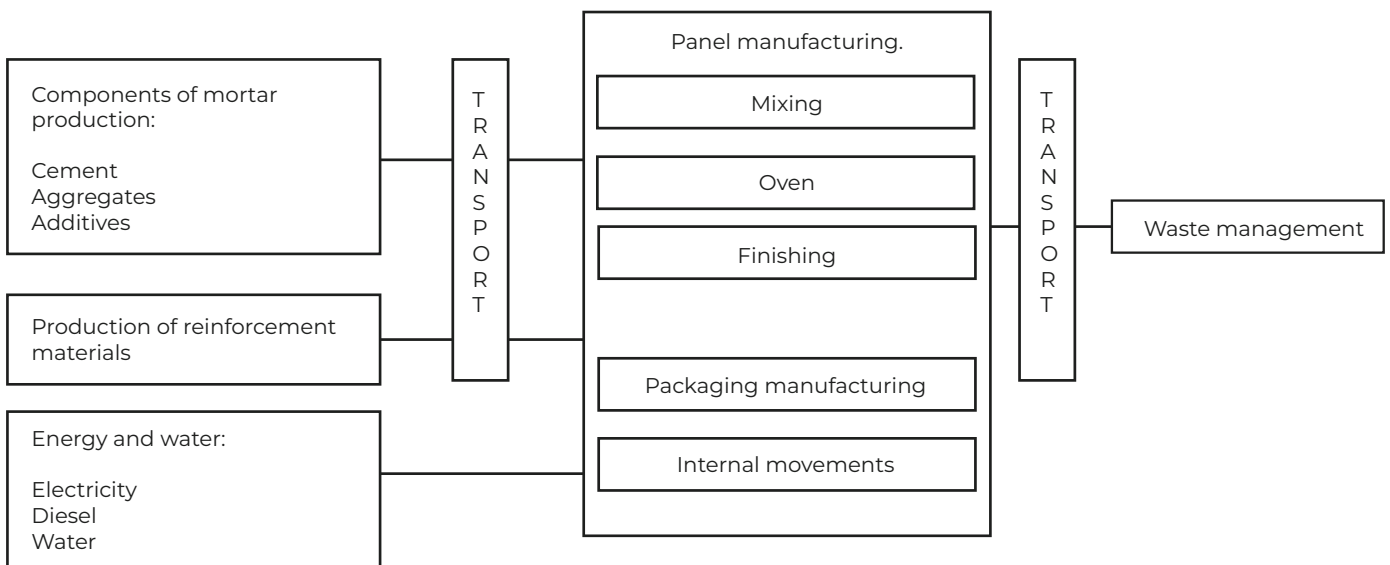
Raw materials are transported from the quarry and from suppliers to the manufacturing site. The model includes road transport for each raw material.

### A3 Manufacturing:

This module includes energy and water consumption in the manufacturing process, as well as the management of the resulting waste and the production of packaging.

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The raw materials are mixed homogeneously to form the mortar. Then, the panel is placed in an oven, and finally, operations are carried out to complete the process.



## CONCLUSION AND RESULTS.

The life cycle analysis, data introduction and environmental impact calculations have been carried out using the A-DAP software, version 24.04, certified by TECNALIA CERTIFICATION, no. EPD06901.

The table below summarizes the results for the functional unit:

Table 2. Parameters describing the environmental impacts

Impact Category	LIFE CYCLE STAGE									
	Parameter (unit)	A1	A2	A3	A1-A3	C1	C2	C3	C4	D
GWP-total (kg CO <sub>2</sub> eq)	3,10E+2	4,34E+1	9,03E-1	3,54E+2	4,08E+0	7,47E+0	3,03E-1	1,13E+0	-9,89E-1	
GWP - fossil (kg CO <sub>2</sub> eq)	3,06E+2	4,34E+1	9,03E-1	3,51E+2	4,08E+0	7,46E+0	2,96E-1	1,13E+0	-9,90E-1	
GWP - biogEnic (kg CO <sub>2</sub> eq)	8,65E-1	2,56E-3	1,49E-4	8,68E-1	2,43E-4	4,42E-4	7,20E-3	1,74E-4	1,19E-3	
GWP - luluc (kg CO <sub>2</sub> eq)	7,05E-1	8,83E-4	5,69E-5	7,06E-1	1,67E-4	1,46E-4	9,08E-5	4,56E-5	-1,24E-4	
ODP (kg CFC-11 eq)	2,75E-5	9,28E-7	1,79E-8	2,84E-5	6,43E-8	1,61E-7	6,54E-9	2,14E-8	-1,47E-8	
AP (mol H+ eq)	7,06E-1	6,77E-2	3,04E-3	7,77E-1	3,91E-2	9,39E-3	2,45E-3	7,51E-3	-8,72E-3	
EP - freshwater (kg P- eq)	1,10E-2	3,42E-5	3,72E-6	1,10E-2	3,49E-6	5,87E-6	2,85E-6	1,11E-6	-2,88E-6	
EP - saltwater (kg N- eq)	2,14E-1	2,01E-2	1,37E-3	2,36E-1	1,83E-2	2,33E-3	1,09E-3	3,45E-3	-4,03E-3	
EP - terrestrial (mol N- eq)	1,57E+0	2,04E-1	1,48E-2	1,79E+0	2,00E-1	2,27E-2	1,21E-2	3,74E-2	-4,37E-2	
POCP (kg NMVOC eq)	6,77E-1	1,21E-1	6,87E-3	8,05E-1	5,87E-2	1,76E-2	3,54E-3	1,14E-2	-1,31E-2	
ADPE (kg Sb eq)	6,54E-4	1,51E-6	7,19E-8	6,55E-4	1,72E-7	2,58E-7	5,99E-8	4,32E-8	-1,80E-7	
ADPF (MJ eq)	3,12E+3	5,73E+2	8,63E+0	3,70E+3	5,35E+1	9,87E+1	3,71E+0	1,49E+1	-1,30E+1	
WDP (m <sup>3</sup> )	6,69E+1	5,31E-1	3,26E-2	6,75E+1	6,88E-2	9,01E-2	5,74E-2	1,70E-2	-1,09E+0	
particulate matter emissions (inc. enferm.)	2,49E-1	2,94E-6	7,54E-8	2,49E-1	4,82E-6	4,50E-7	3,04E-6	1,93E-7	2,71E-6	
ionizing radiation (kBq U-235 eq)	3,86E+1	9,09E-2	3,27E-3	3,86E+1	6,32E-3	1,58E-2	2,43E-1	3,85E-3	6,28E-2	
Ecotoxicity - freshwater (CTUe)	1,89E+3	2,57E+2	4,85E+0	2,15E+3	2,57E+1	4,41E+1	1,44E+0	6,88E+0	-6,38E+0	
Human Toxicity - carcinogenic effects (CTUh)	1,04E-7	2,75E-9	1,01E-10	1,06E-7	2,29E-10	4,75E-10	2,30E-11	1,40E-10	-2,37E-10	
Human Toxicity - non-carcinogenic effects (CTUh)	5,67E-6	2,99E-7	1,85E-9	5,98E-6	5,72E-9	5,31E-8	7,49E-10	6,14E-9	-2,29E-9	
use / pavement quality (Pt)	4,64E+2	1,10E+0	1,34E+0	4,66E+2	1,02E-1	1,89E-1	5,55E-1	8,49E+0	-2,32E+1	



**G R A C C O**  
S U R F A C E S