

ENVIRONMENTAL PRODUCT DECLARATION

In accordance with EN 15804:2012+A2:2019/AC:2021 and ISO 14025

Gyproc[®] XPERT+
Date of issue: 2024-06-19
Validity: 5 years
Valid until: 2029-06-18
Version: 1
Scope of the EPD[®]: India



The **environmental impacts** of this product have been assessed over its **whole life cycle**. Its Environmental Product Declaration has been verified by an **independent third party**.



Registration number
The International EPD[®] System:
EPD-IES-0005400

Manufacturers address:
Saint-Gobain India Pvt. Ltd – Gyproc Plant, Ussainagaram, Ulundai,
Tiruvallur, Tamil Nadu, 602105, India

An EPD should provide current information and may be updated if conditions change. The stated validity is therefore subject to the continued registration and publication at www.environdec.com

General information

Company information

Manufacturer: Saint-Gobain India Pvt. Ltd

Programme used: International EPD System <http://www.environdec.com/>

EPD registration number/declaration number: EPD-IES-0005400

PCR identification: EN 15804:2012+A2:2019 Sustainability of construction works – Environmental product declaration - core rules for the product category of construction product and PCR 2019:14 Construction Products, version 1.3.3.

Site of manufacture: Saint-Gobain India Pvt. Ltd – Gyproc Plant, Ussainagaram, Ulundai, Tamil Nadu 602105, Chennai, India

Owner of the declaration: Saint-Gobain India Pvt. Ltd – Gyproc Plant, Ussainagaram, Ulundai, Tamil Nadu 602105, Chennai, India

Product name and manufacturer represented: Gyproc Xpert+ produced by Saint-Gobain India Pvt. Ltd in Chennai

UN CPC code: 37530 Articles of plaster or of composition based on plaster.

Declaration issued: 2024-06-19 **Valid until:** 2029-06-18

Demonstration of verification: an independent verification of the declaration was made, according to ISO 14025:2010. This verification was external and conducted by the following third party based on the PCR mentioned above.

EPD Prepared by: Saint-Gobain Research India.

Contact: Trisha George (trisha.george@saint-gobain.com), Mathangi Lakshmi Muralidharan (mathangilakshmi.muralidharan@saint-gobain.com).

Framework: The LCA is based on 2023-2024 production data for one site in India.

The Declared Unit is: 1 Kg of installed plasters Gyproc® Xpert+ with a coverage of 0.08 sq.mts and a useful reference service life of 50 years

Declaration of Hazardous substances: (Candidate list of Substances of Very High Concern): none

Geographical scope of the EPD®: India

The intended use of this EPD is for B2B communication.

Programme information

PROGRAMME:	The International EPD® System
ADDRESS:	EPD International AB - Box 210 60 - SE-100 31 Stockholm - Sweden
WEBSITE:	www.environdec.com
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PROGRAMME:	The International EPD® System, India
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Product Category Rules (PCR)

CEN standard EN 15804 serves as the core Product Category Rules (PCR)
Product category rules (PCR): PCR 2019:14 Construction Products, version 1.3.3.
Prepared by: IVL Swedish Environmental Research Institute, EPD International Secretariat

PCR review was conducted by: The Technical Committee of the International EPD® System. See www.environdec.com for a list of members.
Review chair: Claudia A. Peña, University of Concepción, Chile. The review panel may be contacted via the Secretariat www.environdec.com/contact. - Contact via info@environdec.com

Life cycle assessment (LCA)

LCA accountability: Mathangi Lakshmi Muralidharan, Saint-Gobain Research India

Third-party verification

Independent third-party verification of the declaration and data, according to ISO 14025:2006:
 EPD verification by individual verifier
Demonstration of verification: An independent verification of the declaration was made, according to EN ISO 14025:2010. This verification was external and conducted by a third party, based on the PCR mentioned above.
Third party verifier: Sunil Kumar, SIPL
Telephone: +91 9911921666
email: sunil@sipl-sustainability.com
Approved by: The International EPD® System

Procedure for follow-up of data during EPD validity involves third party verifier: Yes No

The EPD owner has the sole ownership, liability, and responsibility of the EPD.

EPDs within the same product category but registered in different EPD programs may not be comparable. For two EPDs to be comparable, they must be based on the same PCR (including the same version number) or be based on fully-aligned PCRs or versions of PCRs; cover products with identical functions, technical performances and use (e.g. identical declared/functional units); have equivalent system boundaries and descriptions of data; apply equivalent data quality requirements, methods of data collection, and allocation methods; apply identical cut-off rules and impact assessment methods (including the same version of characterization factors); have equivalent content declarations; and be valid at the time of comparison.

Product information

Product description and use:

This Environmental Product Declaration (EPD®) describes the environmental impacts of 1 Kg of installed plasters Gyproc® Xpert+ with a coverage of 0.08 sq.mts and a useful reference service life of 50 years.

Gyproc XPert+ is a stucco gypsum plaster made for application on all backgrounds e.g. Brick block, AAC block, Concrete, Reinforced Cement Concrete. This gypsum plaster can be used in replacement to any other plastering system or can be used for punning on sand cement plaster to target a better finish. Gyproc Gypsum plasters do not require any kind of water curing post application thus saving water and time.

Technical data/physical characteristics:

EN classification	A 13 mm
Ignitability classification	P (BS-476 -Part-5)
Density	880 Kg/m ³
Coverage	0.08 sq.mts/kg
Thermal conductivity	0.25 W/(m.K) (EN 15283-1)

Description of the main product components and/or materials:

Product components	Weight (Kg/DU)	Post-consumer material weight (%)	Bio C KgC
Standard product	1	0%	0.00016
Gypsum (Natural)	0.95-0.99	0%	0
Heat resistant additive	0.0001-0.0005	0%	0.000003
Thickener	0.0001-0.0005	0%	0.00012
Retarder	0.0001-0.0003	0%	0.000062
Packaging materials	Weight (Kg/DU)	Post Consumer material	BioC KgC/Kg
Printing Ink	0 – 0.005	0%	0
Polypropylene bag	0 – 0.005	0%	0

During the life cycle of the product any hazardous substance listed in the “Candidate List of Substances of Very High Concern (SVHC) for authorization” has not been used in a percentage higher than 0,1% of the weight of the product.

The verifier and the program operator do not make any claim nor have any responsibility of the legality of the product.

LCA calculation information

EPD TYPE DECLARED	Cradle-to-gate with modules C1-C4, module D and optional modules A4-A5 and B1-B7 Product-specific (one product, one manufacturing site)
FUNCTIONAL UNIT	1 Kg of installed plasters Gyproc® Xpert+ with a coverage of 0.08 sq.mts and a useful reference service life of 50 years
SYSTEM BOUNDARIES	Mandatory Stages= A1-A3, C1-C4 and D; Optional stages= A4-A5 and B1-B7
REFERENCE SERVICE LIFE (RSL)	The Reference Service Life (RSL) of the Gypsum product is considered to be 50 years. This 50-year value is the amount of time that we recommend our products last for without refurbishment and corresponds to standard building design life.
CUT-OFF RULES	In the case that there is not enough information, the process energy and materials representing less than 1% of the whole energy and mass used can be excluded (if they do not cause significant impacts). The addition of all the inputs and outputs excluded cannot be bigger than the 5% of the whole mass and energy used, as well of the emissions to environment occurred. Flows related to human activities such as employee transport are excluded. The construction of plants, production of machines and transportation systems are excluded since the related flows are supposed to be negligible compared to the production of the building product when compared at these systems lifetime level.
ALLOCATIONS	Allocation has been avoided when possible. For the energy, the auxiliaries used and wastes generated during manufacturing a physical allocation based on mass was applied. Allocation criteria are based on mass. The polluter pays as well the modularity principles have been followed.
GEOGRAPHICAL COVERAGE AND TIME PERIOD	Scope includes: India Data is collected from one production site in Tiruvallur, India, Saint-Gobain India Pvt. Ltd Data collected for the year 2023-2024. Cradle to gate + A4-A5 + C +D Background data: Ecoinvent 3.8 and GaBi ts 9.2
PRODUCT UN CPC CODE	37530 Articles of plaster or of composition based on plaster

According to EN 15804:2012+A2:2019, EPDs of construction products may not be comparable if they do not comply with this standard. According to ISO 21930, EPDs might not be comparable if they are from different programmes.

Life cycle stages



Product stage, A1-A3

Description of the stage: the product stage of plaster products is subdivided into 3 modules A1, A2 and A3 respectively “Raw material supply”, “transport to manufacturer” and “manufacturing”.

A1, raw material supply.

This includes the extraction and processing of all raw materials and energy which occur upstream from the manufacturing process.

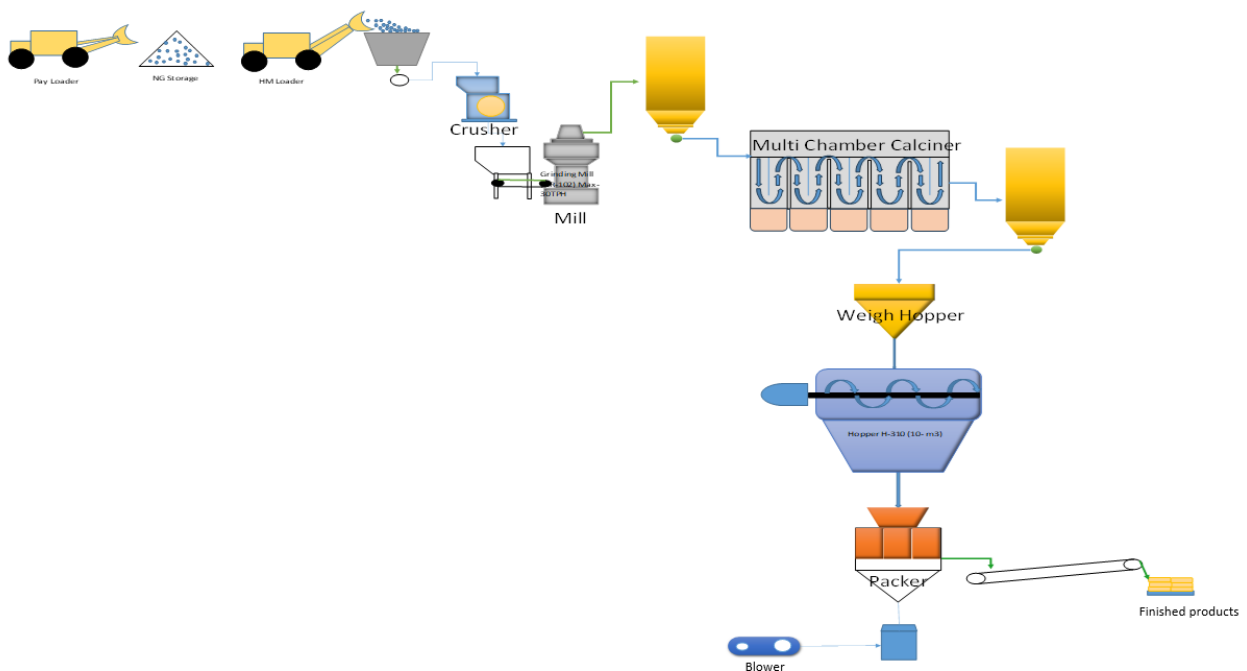
A2, transport to the manufacturer.

The raw materials are transported to the manufacturing site. The modelling includes road, boat and/or train transportations of each raw material.

A3, manufacturing.

This module includes the manufacture of products and the manufacture of packaging. The production of packaging material is considered at this stage. The processing of any waste arising from this stage is also included.

Manufacturing process flow diagram



Manufacturing in detail:

The gypsum is crushed to less than 30 mm and ground to less than equal to 150 μm . The Gypsum is calcined where the Gypsum is converted into stucco. The stucco is cooled and then mixed with other chemical additives. Once it is mixed, it's packed in polypropylene bags.

Construction process stage, A4-A5

Description of the stage: the construction process is divided into 2 modules: A4, transport to the building site, and A5, installation in the building

A4, transport to the building site.

This module includes transport from the production gate to the building site. Transport is calculated on the basis of a scenario with the parameters described in the following table.

PARAMETER	VALUE (expressed per functional unit)
Fuel type and consumption of vehicle or vehicle type used for transport e.g. long-distance truck, boat, etc.	Long distance truck, maximum load weight of 27 t and consumption of 0.38 liters per km
Distance	606 km
Capacity utilisation (including empty returns)	85% (30% empty returns): default values in Gabi
Bulk density of transported products	880 kg/m ³
Volume capacity utilisation factor	95%

A5, installation into the building.

The accompanying table quantifies the parameters for installing the product at the building site. All installation materials and their waste processing are included.

PARAMETER	VALUE (expressed per functional unit)
Ancillary materials for installation (specified by materials)	None
Water use	0.165 liters/m ²
Other resource use	None
Quantitative description of energy type (regional mix) and consumption during the installation process	None
Wastage of materials on the building site before waste processing, generated by the product's installation (specified by type)	Plasters: 0.05 kg (5%)
Output materials (specified by type) as results of waste processing at the building site e.g. of collection for recycling, for energy recovering, disposal (specified by route)	Plasters: 0.05 kg (5%) to landfill Polypropylene : 0.0001 Kg
Direct emissions to ambient air, soil and water	None

Use stage (excluding potential savings), B1-B7

Description of the stage:

The use stage, related to the building fabric includes:

- B1**, use or application of the installed product;
- B2**, maintenance;
- B3**, repair;
- B4**, replacement;
- B5**, refurbishment;
- B6**, operational energy use
- B7**, operational water use

Description of scenarios and additional technical information:

The product has a reference service life of 50 years. This assumes that the product will last in situ with no requirements for maintenance, repair, replacement or refurbishment throughout this period. Therefore, it has no impact at this stage.

End-of-life stage C1-C4

Description of the stage: This stage includes the next modules:

C1, de-construction, demolition;

C2, transport to waste processing;

C3, waste processing for reuse, recovery and/or recycling;

C4, disposal, including provision and all transport, provision of all materials, products and related energy and water use.

Description of the scenarios and additional technical information for the end-of-life:

PARAMETER	VALUE (expressed per functional unit)
Collection process specified by type	100% collected with mixed deconstruction and demolition waste to landfill (1.51 kg)
Recovery system specified by type	0 kg recycled 100 % is sent municipal landfill
Disposal specified by type	1.51 kg to landfill
Assumptions for scenario development (e.g. transportation)	Gypsum plaster waste is transported 100 km by truck from deconstruction/demolition sites to landfill

Reuse/recovery/recycling potential, D

100% of waste are landfilled. There is no reuse nor recovery nor recycling of this product. Hence, no recycling benefits are reported on stage D.

The results of all these indicators are included in the EPD. The estimated impact results are only relative statements, which do not indicate the endpoints of the impact categories, exceeding threshold values, safety margins and/or risks.

LCA results

As specified in EN 15804:2012+A2:2019 and also the Product-Category Rules, the environmental impacts are declared and reported using the baseline characterization factors are from the ILCD. Specific data has been supplied by the plant, and generic data come from GABI and Ecoinvent databases. All emissions to air, water, and soil, and all materials and energy used have been included. The results of modules A1-A3 (A1-A5 for services) shall not be used without considering the results of module C as it is within the scope of LCA.

1 Kg of installed plasters Gyproc® Xpert+ with a coverage of 0.08 sq.mts and a useful reference service life of 50 years

EN 15804 reference package” based on EF 3.0, EF 3.1 or a later version has been used.

The following results corresponds to a single product manufactured in a single plant:

System boundaries (X=included, MND=module not declared)																		
	PRODUCT STAGE			CONSTRUCTION STAGE		USE STAGE							END OF LIFE STAGE				BENEFITS AND LOADS BEYOND THE SYSTEM BOUNDARY	
	Raw material supply	Transport	Manufacturing	Transport	Construction-Installation process	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Reuse-recovery	
Module	A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D	
Modules declared	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Geography	IN	IN	IN	IN	IN	-	-	-	-	-	-	-	IN	IN	IN	IN	IN	
Specific data used	<90% GWP- GHG																	
Variation products	0%																	
Variation sites	0%																	

Process	Source Type	Source	Reference year	Data Category	Share of primary data of GWP (total_ results for A1-A3)
Manufacturing of the product	Collected Data	EPD owner	2023-2024	Primary data	26%
Generation of electricity used in the manufacturing of product	Database	Eco-invent	2023-2024	Primary data	7%
Transport of gypsum (natural)	Database	Eco-invent	2023-2024	General	7%
Production of packaging material	Database	Eco-invent	2023-2024	General	8%
Thermal energy from Biomass	Database	Eco-invent	2023-2024	General	7%
Total share of primary data of GWP-GHG results for A1-A3					55%

Notice: The estimated impact results are only relative statements which do not indicate the end points of the impact categories, exceeding threshold values, safety margins or risks

Environmental Impacts

	Product stage	Construction stage		Use stage							End of life stage				D Reuse, recovery, recycling
	A1 / A2 / A3	A4 Transport	A5 Installation	B1 Use	B2 Maintenance	B3 Repair	B4 Replacement	B5 Refurbishment	B6 Operational energy use	B7 Operational water use	C1 Deconstruction / demolition	C2 Transport	C3 Waste processing	C4 Disposal	D Reuse, recovery, recycling
Climate Change - total [kg CO2 eq.]	4.10E-02	7.25E-02	1.02E-02	0	0	0	0	0	0	0	5.56E-03	7.53E-03	0.00E+00	1.96E-02	0.00E+00
Climate Change, fossil [kg CO2 eq.]	4.03E-02	7.17E-02	7.58E-03	0	0	0	0	0	0	0	5.55E-03	7.45E-03	0.00E+00	1.87E-02	0.00E+00
Climate Change, biogenic [kg CO2 eq.]	-1.70E-03	1.64E-04	2.48E-03	0	0	0	0	0	0	0	5.27E-06	1.71E-05	0.00E+00	8.30E-04	0.00E+00
Climate Change, land use and land use change [kg CO2 eq.]	2.39E-03	6.71E-04	1.61E-04	0	0	0	0	0	0	0	9.88E-08	7.02E-05	0.00E+00	5.46E-05	0.00E+00
Ozone depletion [kg CFC-11 eq.]	5.20E-10	9.43E-15	2.60E-11	0	0	0	0	0	0	0	4.18E-16	9.86E-16	0.00E+00	7.03E-17	0.00E+00
Acidification [Mole of H+ eq.]	1.11E-01	9.22E-05	5.59E-03	0	0	0	0	0	0	0	1.62E-05	4.55E-05	0.00E+00	1.36E-04	0.00E+00
Eutrophication, freshwater [kg P eq.]	2.80E-06	2.65E-07	2.86E-07	0	0	0	0	0	0	0	1.24E-09	2.77E-08	0.00E+00	3.26E-08	0.00E+00
Eutrophication, marine [kg N eq.]	5.83E-02	3.23E-05	2.92E-03	0	0	0	0	0	0	0	3.08E-06	2.22E-05	0.00E+00	3.50E-05	0.00E+00
Eutrophication, terrestrial [Mole of N eq.]	6.40E-01	3.78E-04	3.20E-02	0	0	0	0	0	0	0	3.38E-05	2.46E-04	0.00E+00	3.85E-04	0.00E+00
Photochemical ozone formation, human health [kg NMVOC eq.]	1.07E-01	8.09E-05	5.36E-03	0	0	0	0	0	0	0	9.69E-06	4.19E-05	0.00E+00	1.06E-04	0.00E+00
Resource use, mineral and metals [kg Sb eq.]	2.61E-07	4.81E-09	1.34E-08	0	0	0	0	0	0	0	5.23E-11	5.02E-10	0.00E+00	1.71E-09	0.00E+00
Resource use, fossils [MJ]	7.07E-01	9.88E-01	1.06E-01	0	0	0	0	0	0	0	6.85E-02	1.03E-01	0.00E+00	2.49E-01	0.00E+00

	Water use [m³ world equiv.]	4.64E-02	8.76E-04	1.32E-02	0	0	0	0	0	0	0	0	0	0	9.53E-06	9.16E-05	0.00E+00	1.99E-03	0.00E+00
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Resources Use

	Product stage	Construction stage		Use stage							End of life stage				D Reuse, recovery, recycling							
		A1 / A2 / A3	A4 Transport	A5 Installation	B1 Use	B2 Maintenance	B3 Repair	B4 Replacement	B5 Refurbishment	B6 Operational energy use	B7 Operational water use	C1 Deconstruction / demolition	C2 Transport	C3 Waste processing	C4 Disposal	D Reuse, recovery, recycling						
Resources Use indicators																						
Resources Use indicators	Use of renewable primary energy (PERE) [MJ]	1.60E+00	7.19E-02	8.45E-02	0	0	0	0	0	0	0	3.16E-04	7.51E-03	0.00E+00	3.26E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00		
	Primary energy resources used as raw materials (PERM) [MJ]	8.72E-03	0.00E+00	4.36E-04	0	0	0	0	0	0	0	0.00E+00	0.00E+00	0.00E+00	0	0	0	0	0	0	0	
	Total use of renewable primary energy resources (PERT) [MJ]	1.61E+00	7.19E-02	8.49E-02	0	0	0	0	0	0	0	3.16E-04	7.51E-03	0.00E+00	3.26E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
	Use of non-renewable primary energy (PENRE) [MJ]	7.09E-01	9.91E-01	1.07E-01	0	0	0	0	0	0	0	6.87E-02	1.04E-01	0.00E+00	2.49E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
	Non-renewable primary energy resources used as raw materials (PENRM) [MJ]	0.00E+00	0.00E+00	0.00E+00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Total use of non-renewable primary energy resources (PENRT) [MJ]	7.09E-01	9.91E-01	1.07E-01	0	0	0	0	0	0	0	6.87E-02	1.04E-01	0.00E+00	2.49E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
	Input of secondary material (SM) [kg]	0.00E+00	0	0.00E+00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Use of renewable secondary fuels (RSF) [MJ]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Use of non renewable secondary fuels (NRSF) [MJ]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Use of net fresh water (FW) [m3]	1.31E-03	7.87E-05	3.22E-04	0	0	0	0	0	0	0	4.11E-07	8.23E-06	0.00E+00	6.28E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	

Waste Category & Output flows

		Product stage	Construction stage		Use stage							End of life stage				D Reuse, recovery, recycling
		A1 / A2 / A3	A4 Transport	A5 Installation	B1 Use	B2 Maintenance	B3 Repair	B4 Replacement	B5 Refurbishment	B6 Operational energy use	B7 Operational water use	C1 Deconstruction / demolition	C2 Transport	C3 Waste processing	C4 Disposal	D Reuse, recovery, recycling
Output Flows and waste category																
Output Flows and waste category	Hazardous waste disposed (HWD) [kg]	3.99E-09	3.07E-12	1.86E-10	0	0	0	0	0	0	0	2.53E-13	3.21E-13	0.00E+00	3.79E-09	0.00E+00
	Non-hazardous waste disposed (NHWD) [kg]	6.56E-02	1.51E-04	6.77E-02	0	0	0	0	0	0	0	1.62E-05	1.58E-05	0.00E+00	1.25E+00	0.00E+00
	Radioactive waste disposed (RWD) [kg]	2.95E-06	1.86E-06	-5.74E-08	0	0	0	0	0	0	0	8.24E-08	1.94E-07	0.00E+00	2.83E-06	0.00E+00
	Components for re-use (CRU) [kg]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Materials for Recycling (MFR) [kg]	0.00E+00	0	0.00E+00	0	0	0	0	0	0	0	0	0	0.00E+00	0	0
	Material for Energy Recovery (MER) [kg]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Exported electrical energy (EEE) [MJ]	0	0	0.00E+00	0	0	0	0	0	0	0	0	0	0	0	0
	Exported thermal energy (EET) [MJ]	0	0	0.00E+00	0	0	0	0	0	0	0	0	0	0	0	0

Information on biogenic carbon content

		Product stage
	Biogenic Carbon Content	A1 / A2 / A3
Biogenic carbon content	Biogenic carbon content in product [kg]	2.38E-04
	Biogenic carbon content in packaging [kg]	0.00E+00

Note: 1 kg biogenic carbon is equivalent to 44/12 (approx. 3,67) kg CO₂.

There is biogenic carbon content due to the production of additives for plasters.

Carbon footprint	Product stage	Construction stage		Use stage							End of life stage				D Reuse, recovery, recycling
	A1 / A2 / A3	A4 Transport	A5 Installation	B1 Use	B2 Maintenance	B3 Repair	B4 Replacement	B5 Refurbishment	B6 Operational energy use	B7 Operational water use	C1 Deconstruction / demolition	C2 Transport	C3 Waste processing	C4 Disposal	D Reuse, recovery, recycling
GWP-GHG	4.03E-02	7.17E-02	7.58E-03	0	0	0	0	0	0	0	5.55E-03	7.45E-03	0.00E+00	1.87E-02	0.00E+00

LCA results interpretation

EN 15804 reference package" based on EF 3.0, EF 3.1 or a later version has been used.

Disclaimer 1: This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure not due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon, from some construction materials is also not measured by this indicator.

- Ionising radiation - human health [kBq U235 eq.]

Disclaimer 2: The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the following indicators:

- Resource use, mineral and metals [kg Sb eq.]²
- Resource use, energy carriers [MJ]¹
- Ecotoxicity freshwater [CTUe]
- Cancer human health effects [CTUh]
- Non-cancer human health effects [CTUh]
- Land Use [Pt]

(a) The total global warming potential (GWP-total) is the sum of GWP fossil, GWP biogenic and GWP land use change.

Disclaimer 3: It is recommended to use the results of modules A1-A3 (A1-A5 for services) without considering the results of module C.

Global Warming Potential (Climate Change) (GWP)

Most of the greenhouse gas emissions occur during the production stage. Emissions arise due to the consumption of electricity and diesel in the plant and occur in the upstream value chain during the production of raw materials and electricity. Emissions from the installation stage mainly come from product losses. Emissions from the transport to the building site and other stages are less significant.

Non-renewable resources consumptions

The consumption of non-renewable resources mainly come from the production stage. The main contributors are diesel and electricity.

Energy Consumptions

Most of the energy consumption occurs during the production stage. Energy is consumed in the form of electricity and diesel during the manufacture of the studied product.

Water Consumption

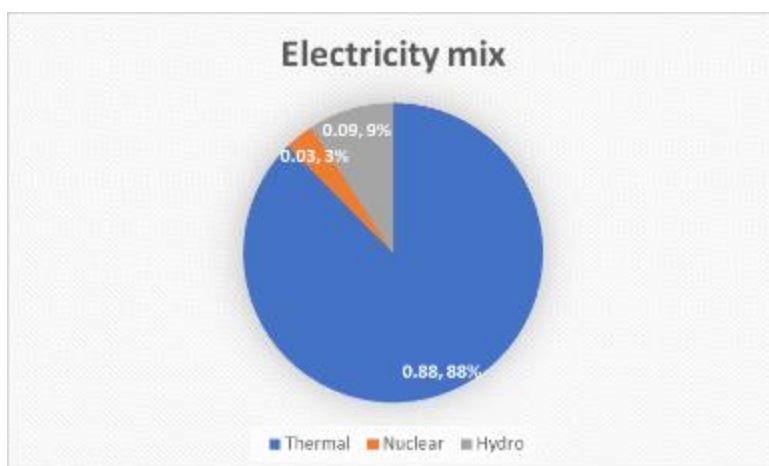
There is an indirect consumption of water during the production of raw materials and energy, however, most of the water consumption occurs during the installation phase.

Waste Production

The largest contributor is the end-of-life stage. Some waste is also generated during the installation stage (loss of products and packaging waste).

Additional information

Electricity description



Type of information	Description
Location	Representative of Electricity purchased by Saint-Gobain India Pvt. Ltd India
Geographical representativeness description	Split of energy sources in India - Coal 87% - Nuclear 3% - Hydro 10% - Losses (T&D) 20%
Reference year	2023-2024
Type of data set	Cradle to gate from Eco-invent database
Source	Central electricity authority of India https://cea.nic.in
CO ₂ emissions	1.24 kg CO ₂ eq. / kWh (Based on Climate Change – fossil indicator)

Data quality

Inventory data quality is judged by geographical, temporal, and technological representativeness. To cover these requirements and to ensure reliable results, first-hand industry data crossed with LCA background datasets were used. The data was collected from internal records and reporting documents from Saint-Gobain India Pvt. Ltd. After evaluating the inventory, according to the defined ranking in the LCA report, the assessment reflects good inventory data quality.

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