ENVIRONMENTAL PRODUCT DECLARATION

In accordance with EN 15804+A1:2014 and ISO 14025:2006

Façade coatings

Publication date: 6.5.2022
Version: 1.0
Validity: 5.5.2027

EPD VERIFIED

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.

VERIFICATION N°

3013EPD-22-0122

CERTIFIKAČNÍ ORGÁN PRO EPD VÚPS Certifikační společnost Výzkumný ústav pozemních staveb

weber SAINT-GOBAIN

General information

Manufacturer: Saint-Gobain Construction Products CZ a.s., Radiová 3, 102 00 Praha 10 – Štěrboholy
Factory site: Prostějov, Rovná 4595, 796 01 Prostějov, Czech Republic

PCR identification: EN 15804+A1:2014 Sustainability of construction works – Environmental product declarations (Core rules for the product category of construction products).

Product / product family name and manufacturer represented:
This EPD describes the environmental impacts of 1kg of various wet construction mixtures (defined below) manufactured by Saint-Gobain Construction Products CZ a.s., divison Weber in Prostějov production site, Rovná 4595, 796 01 Prostějov, Czech Republic.

Demonstration of verification: an independent verification of the declaration was made, according to ISO 14025:2006. This verification was external and conducted by a third party, based on the PCR mentioned above (see information below).

EPD Program	National Eco-labelling Program. For more information see www.cenia.cz cenia
EPD Verification N°	3013EPD-22-0122
Date of publication	6.5.2022
EPD validity	5 years
EPD valid within the following geographical area	Scope includes manufacture and sale in Czech Republic
PCR review conducted by	CEN standard EN 15804+A1:2014 serves as the core PCR
Independent verification of the declaration and data, according to ISO 14025:2006	Building Research Institute – Certification Company Ltd. Výzkumný ústav pozemních staveb – Certifikační společnost, s.r.o. Pražská 810/16, 102 00 Prague 10, Czech Republic
Accredited or approved by	Czech Accreditation Institute (CAI) Olšanská 54/3, 130 00 Prague 3, Czech Republic

Product description

Product description and description of use:
This EPD is processed for set of mixtures for the façade coatings of Weber Saint-Gobain Construction Products CZ a.s., division Weber, from Prostějov production site.

weberton -. weberton facade coatings are intended for painting and renovation of facades made of traditional stucco plasters, mineral plasters, pasty plasters, concrete, renovation plasters and others. Weber façade coatings reflect the latest knowledge and technology as well as long-term experience with historic buildings and their care.

Description of the average product components and/or materials:
Some of the products in this line (NFAB, NFAKR, NFB, NFECA, NFELA) contain more than 1% titanium dioxide. However, these are wet - liquid mixtures, which do not have to be classified as Carc. 2. However, if they contain at least 1% of TiO2 particles with an aerodynamic diameter ≤ 10 µm, the label shall bear the warning "Dangerous respirable droplets may form during spraying. Do not breathe aerosols or mist "(EUH211).

All raw materials contributing more than 5% to any environmental impact are listed in the following table.
Following table presents the material composition of average product weberton from production site.

Constituent	Amount (%)
Lime	0 - 52
Additives	18 - 98
Titanium dioxide	0 - 16

LCA calculation information

FUNCTIONAL UNIT / DECLARED UNIT	Covering 1 kg of each of products
SYSTEM BOUNDARIES	Cradle To Grave
REFERENCE SERVICE LIFE (RSL)	according to the service life of the building / part of building
CUT-OFF RULES	1% of primary energy and total mass input of the unit process <5% of energy usage and mass for neglected input flows per stage
ALLOCATIONS	Based on mass repartition
GEOGRAPHICAL COVERAGE AND TIME PERIOD	Scope includes manufacture and sale in Czech Republic in 2020.

According to EN 15804+A1:2014, EPD of construction products may not be comparable if they do not comply with this standard. According to ISO 21930:2018, EPD might not be comparable if they are from different programmes.

Life cycle stages

Flow diagram of the Life Cycle

Figure 1: Life Cycle illustration of a product for construction

Product stage, A1 - A3

Description of the stage:

The product stage of the Weber products is subdivided into 3 modules A1, A2 and A3 respectively "Raw material supply", "transport" and "manufacturing".

The aggregation of the modules A1, A2 and A3 is a possibility considered by the EN 15804+A1:2014 standard. This rule is applied in this EPD.

Raw material supply – A1

This part takes into account the extraction and processing of all raw materials and energy which occurs upstream to the studied manufacturing process.

Specifically, the raw material supply covers sourcing (quarry) and production of all components and additives (e.g. cement, lime and others).

Transport to manufacturer – A2

The raw materials are transported to the manufacturing site. In this case, the modelling includes road transportations of each raw material, based on specific data for main inputs: sand, limestone and cement.

Manufacture – A3

This module includes manufacturing of products but also besides on-site activities such as drying, storing, mixing, packing and internal transportation.

The manufacturing process also collect data on the combustion of refinery products, such as diesel and gasoline, related to the production process.

Use of electricity, fuels and auxiliary materials in the production is taken into account too. The environmental profile of these energy carriers is modeled for local conditions.

Packaging-related flows in the production process and all up-stream packaging are included in the manufacturing module, i.e. PP buckets with steel handle.

Apart from production of packaging material, the supply and transport of packaging material are also considered in the LCA model. They are reported and allocated to the module where the packaging is applied. Data on packaging waste created during this step are then generated.

Electricity:

Bought electricity used for manufacturing/mixing of the final product is 0,0105 kWh electricity/DU.
The Czech electricity mix of 2020 was used for.

Construction process stage, A4 - A5

Description of the stage:

Transport – A4

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.

Transport to the building site:

PARAMETER	VALUE (expressed per functional/declared unit)
Fuel type and consumption of vehicle or vehicle type used for transport e.g. long distance truck, boat, etc.	Average truck, tonnage 16-32 t, diesel
Distance	150 km
Capacity utilisation (including empty returns)	100 % for tanker lorries 0 % of empty returns
Volume capacity utilisation factor	1 (by default)

Construction installation process – A5

For the implementation of the product, handle electric agitator (1 400 W) is supposed. The mixing of product before application is recommended for 3 – 6 min (4,5 min for 25 kg of product as average is used for calculation).

End-of-life of packaging materials is reported and allocated to the module where it arises.

It is assumed that packaging waste generated in the course of installation (PP bucket with steel handle) is 100% collected and recycle. Wooden pallets are re-using and repairing if it is needed.

Installation in the building:

PARAMETER	VALUE (expressed per functional/declared unit)
secondary materials for installation (specified by materials)	-
Water use	-
Other resource use	-
Quantitative description of energy type (regional mix) and consumption during the installation process	0,0035 kWh/DU
Wastage of materials on the building site before waste processing, generated by the product's installation (specified by type)	0,05 kg of manufactured product/DU
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)	0,00255 packaging waste for recycle (PP and steel)
Direct emissions to ambient air, soil and water	-

Use stage (excluding potential savings), B1 - B7

Description of the stage:

The use stage is divided into the following modules:

Use – B1

Maintenance – B2

Repair – B3

Replacement – B4

Refurbishment – B5

Operational energy and water use – B6 and B7

Once installation is complete, no actions or technical operations are required during the use stages until the end-of-life stage. The product does not require any energy, water or material input to keep it in working order. Furthermore, it is not exposed to the indoor atmosphere of the building, nor is it in contact with the circulating water or the ground. For this reason, no environmental loads are attributed to any of the modules between B1 and B5.

End-of-life stage C1 - C4

Description of the stage:

The end-of-life stage is divided into the following modules:

Deconstruction – C1

The de-construction and/or dismantling of the product take part of the demolition of the entire building by the machine. It is calculated as 5 min. work of building machine (diesel, < 18.64 kW, high load factor) for 1 m^3 building, so it is 3,7E-05 h work of building machine per DU.

Transport to waste processing – C2

The model use for the transportation calculates 50 km to landfill.

Waste processing – C3

The product is considered to be landfilled without reuse, recovery or recycling. It is classified as 'non-hazardous waste' in the European list of waste products.

Disposal –C4

The impact of landfill is taken into account according to available data.

Additional technical information of End-of-life:

PARAMETER	VALUE (expressed per functional/declared unit) / DESCRIPTION
Collection process specified by type	1 kg collected with mixed construction waste / DU
Recovery system specified by type	-
Disposal specified by type	1 kg non-hazardous waste landfilled / DU
Assumptions for scenario development (e.g. transportation)	Average truck trailer with 16 - 32 t payload, diesel consumption 38l/100km ; 50 km distance to landfill

Reuse/recovery/recycling potential, D

Post-consumer recycling scenarios are not considered within this EPD.

LCA results

Resume of the LCA data results are detailed on the following tables.

Summary interpretation of the overall impacts are showed page 35.

weberton aquaBalance - NFAB

ENVIRONMENTAL IMPACTS

Parameters	Product stage	Construction process stage		Use stage	End-of-life stage			Beyond the building life cycle
	A1 / A2 / A3	A4 Transport	A5 Installation	B1 – B7	C1 Demolition	C2 Transport	C4 Disposal	D Reuse, recovery, recycling
Abiotic depletion potential for non-fossil resources (ADP-elements) *kg Sb equiv/DU*	**2.90E-04**	**1.04E-06**	**2.98E-08**	-	**3,91E-10**	**3,48E-07**	**5,04E-08**	-
Abiotic depletion potential for fossil resources (ADP-fossil fuels) *MJ/DU*	**2.58E+01**	**4.70E-01**	**4.24E-02**	-	**3,12E-03**	**1,57E-01**	**1,45E-01**	-
Global Warming Potential (GWP) *kg CO2 equiv/DU*	**1.42E+00**	**3.22E-02**	**3.23E-03**	-	**2,32E-04**	**1,07E-02**	**5,16E-03**	-
Ozone Depletion (ODP) *kg CFC 11 equiv/DU*	**5.15E-06**	**5.73E-09**	**1.59E-10**	-	**3,97E-11**	**1,91E-09**	**1,72E-09**	-
Photochemical ozone creation (POPC) *Ethene equiv/DU*	**1.76E-03**	**4.33E-06**	**4.51E-07**	-	**5,36E-08**	**1,44E-06**	**1,57E-06**	-
Eutrophication potential (EP) *kg (PO4)3-equiv/DU*	**3.29E-03**	**2.44E-05**	**1.68E-05**	-	**2,47E-07**	**8,12E-06**	**8,26E-06**	-
Acidification potential (AP) *kg SO2equiv/DU*	**1.43E-02**	**1.01E-04**	**1.23E-05**	-	**1,06E-06**	**3,37E-05**	**3,78E-05**	-

RESOURCE USE

Parameters	Product stage	Construction process stage		Use stage	End-of-life stage			Beyond the building life cycle
	A1 / A2 / A3	A4 Transport	A5 Installation	B1 – B7	C1 Demolition	C2 Transport	C4 Disposal	D Reuse, recovery, recycling
Use of renewable primary energy excluding renewable primary energy resources used as raw materials - MJ/FU	1.71E+00	8.73E-03	2.91E-03	-	1,79E-05	2,91E-03	1,26E-03	-
Use of renewable primary energy used as raw materials *MJ/DU*	0.00E+00	0.00E+00	0.00E+00	-	0,00E+00	0,00E+00	0,00E+00	-
Total use of renewable primary energy resources (primary energy and primary energy resources used as raw materials) MJ/FU	1.71E+00	8.73E-03	2.91E-03	-	1,79E-05	2,91E-03	1,26E-03	-
Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials - MJ/FU	2.71E+01	5.10E-01	4.60E-02	-	3,38E-03	1,70E-01	1,56E-01	-
Use of non-renewable primary energy used as raw materials MJ/FU	0.00E+00	0.00E+00	0.00E+00	-	0,00E+00	0,00E+00	0,00E+00	-
Total use of non-renewable primary energy resources (primary energy and primary energy resources used as raw materials) - MJ/FU	2.71E+01	5.10E-01	4.60E-02	-	3,38E-03	1,70E-01	1,56E-01	-
Use of secondary material *kg/FU*	1.03E-01	0.00E+00	0.00E+00	-	0,00E+00	0,00E+00	0,00E+00	-
Use of renewable secondary fuels- MJ/FU	0.00E+00	0.00E+00	0.00E+00	-	0,00E+00	0,00E+00	0,00E+00	-
Use of non-renewable secondary fuels - MJ/FU	0.00E+00	0.00E+00	0.00E+00	-	0,00E+00	0,00E+00	0,00E+00	-
Use of net fresh water - m3/FU	1.31E+00	1.62E-03	5.96E-04	-	4,57E-06	5,40E-04	6,62E-03	-

WASTE CATEGORIES

Parameters	Product stage	Construction process stage		Use stage	End-of-life stage			Beyond the building life cycle
	A1 / A2 / A3	A4 Transport	A5 Installation	B1 – B7	C1 Demolition	C2 Transport	C4 Disposal	D Reuse, recovery, recycling
Hazardous waste disposed *kg/DU*	5.08E-05	1.26E-06	2.09E-08	-	8,64E-09	4,20E-07	2,18E-07	-
Non-hazardous (excluding inert) waste disposed *kg/DU*	5.32E-01	1.90E-02	7.58E-02	-	3,98E-06	6,33E-03	1,00E+00	-
Inert waste disposed *kg/DU*	6.60E-03	3.23E-05	8.91E-06	-	9,67E-08	1,08E-05	1,18E-05	-
Radioactive waste disposed *kg/DU*	5.53E-05	3.25E-06	2.01E-07	-	2,22E-08	1,08E-06	9,68E-07	-

OUTPUT FLOWS

Parameters	Product stage	Construction process stage		Use stage	End-of-life stage			Beyond the building life cycle
	A1 / A2 / A3	A4 Transport	A5 Installation	B1 – B7	C1 Demolition	C2 Transport	C4 Disposal	D Reuse, recovery, recycling
Components for re-use *kg/DU*	0	0	0	-	0	0	0	-
Materials for recycling *kg/DU*	0	0	0	-	0	0	0	-
Materials for energy recovery *kg/DU*	0	0	0	-	0	0	0	-
Exported energy, detailed by energy carrier *MJ/DU*	0	0	0	-	0	0	0	-

weberton akrylát – NFAKR

ENVIRONMENTAL IMPACTS

Parameters	Product stage	Construction process stage		Use stage	End-of-life stage			Beyond the building life cycle
	A1 / A2 / A3	A4 Transport	A5 Installation	B1 – B7	C1 Demolition	C2 Transport	C4 Disposal	D Reuse, recovery, recycling
Abiotic depletion potential for non-fossil resources (ADP-elements) *kg Sb equiv/DU*	1.74E-04	1.04E-06	2.98E-08	-	3,91E-10	3,48E-07	5,04E-08	-
Abiotic depletion potential for fossil resources (ADP-fossil fuels) *MJ/DU*	2.17E+01	4.70E-01	4.24E-02	-	3,12E-03	1,57E-01	1,45E-01	-
Global Warming Potential (GWP) *kg CO2 equiv/DU*	1.34E+00	3.22E-02	3.23E-03	-	2,32E-04	1,07E-02	5,16E-03	-
Ozone Depletion (ODP) *kg CFC 11 equiv/DU*	1.39E-07	5.73E-09	1.59E-10	-	3,97E-11	1,91E-09	1,72E-09	-
Photochemical ozone creation (POPC) *Ethene equiv/DU*	1.81E-03	4.33E-06	4.51E-07	-	5,36E-08	1,44E-06	1,57E-06	-
Eutrophication potential (EP) *kg (PO4)3-equiv/DU*	3.12E-03	2.44E-05	1.68E-05	-	2,47E-07	8,12E-06	8,26E-06	-
Acidification potential (AP) *kg SO2equiv/DU*	1.68E-02	1.01E-04	1.23E-05	-	1,06E-06	3,37E-05	3,78E-05	