

ENVIRONMENTAL PRODUCT DECLARATION

Multiple products based on worst case result
In accordance with ISO 14025 and EN 15804:2012+A2:2019/AC:2021 for:



Premixed mortars for construction PQT family:

PQT 30, PQT 30F, PQT AV, PQT AVF



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Programme:

The International EPD®
System;
www.environdec.com

Programme
operator:

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Geographical scope:

Global



1. GENERAL INFORMATION

Programme information

The address of the programme operator: EPD International AB, Box 210 60, SE-100 31 Stockholm, Sweden. E-mail: support@environdec.com
The Program operates in compliance with ISO 14025:2006 and the General Program Instructions (GPI) version 5.0.1, published on 02/27/2025.



PRODUCT CATEGORY RULES

PCR	CEN standard EN 15804 serves as the core Product Category Rules PCR 2019:14 construction products (EN 15804:A2), version 2.01, version date 2025-06-05, CPC code 37510: articles of concrete, cement and plaster.
PCR committee	IVL Swedish Environmental Research Institute – Segreteria dell'International EPD® System
PCR review was conducted by	The Technical Committee of the International EPD® System. See www.environdec.com/TC 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 .
Independent third-party verification of the declaration and data, according to ISO 14025:2006	☒ EPD Process Certification ☐ EPD Verification
Third party verifier:	IMQ S.p.a. – Number of accreditations: 00013
Accredited or approved by:	Accredia
Procedure for follow-up of data during EPD validity involves third-party verifier	☐ Sì ☒ No

The EPD owner has the sole ownership, liability, and responsibility for the EPD. EPDs within the same product category but published in different EPD programmes, may not be comparable. For two EPDs to be comparable, they shall be based on the same PCR (including the same first-digit 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 identical scope in terms of included life-cycle stages (unless the excluded life-cycle stage is demonstrated to be insignificant); apply identical impact assessment methods (including the same version of characterisation factors); and be valid at the time of comparison.

2. INFORMATION ABOUT EPD OWNER

In the 1970s, Mr. Guido Zugaro, after a career as a freight truck driver, decided to take over the Pescomaggiore quarry in the municipality of L'Aquila. His four children joined him from an early age in the daily mining operations, eventually taking over the company's financial management. In 2012, the desire to elevate the humble origins of calcium carbonate to a technical product marketable nationwide contributed to the creation of Aquilaprem. Passion, team spirit, and a constant focus on the future fuel the company's management: a formula that underpins the success of a great company. In the name of innovation, we are committed every day to increasingly technical and sustainable construction. The company holds ISO9001 and ISO14001 certification.



EPD Owner:

Aquilaprem Srl

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The manufacturing plant is dedicated to the production of mineral premixed products for construction, including the mortars of the PQT family (PQT 30, PQT 30F, PQT AV, PQT AVF).

3. PRODUCT INFORMATION

PQT 30, PQT 30F, PQT AV, PQT AVF are supplied in a dry premixed powder in respect of all contents but water that is added at the building site in the installation stage in a defined amount and technique.

They are used as a premixed screed with a damp earth consistency, normal and rapid setting. PQT offers excellent workability with both a malt maker and a bucket mixer. It is suitable for both interior and exterior use. The material is supplied in 25 kg bags on wooden pallets of 60 bags with weatherproof LDPE packaging or in bulk in silos.

The products are certified according to EN 13813.

For specific physical properties, we refer to the CE declaration or Declaration of Performance available on demand or to the technical datasheet on www.aquilaprem.it.



4. CONTENT DECLARATION

The Declared Unit (DU) is 1 kg of product. Packaging is included since it is proportioned to 1 kg of product. Allocation is based on mass. Raw materials with a dosage $\leq 0,1\%$ by mass are excluded, as their overall contribution to the environmental impact is estimated to be lower than 0,5% of the total.

Table 1: Main components of the involved products

Product component	Weight (%)	Post-consumer recycled material (%)	Biogenic material, weight - % and kg C/kg
Aggregates and fillers	<87%	0	0
Inorganic binders	<16%	0	0
Others (additives, etc.)	<1%	0	0

Product is free from substances of very high concern (SVHC) on the REACH Candidate List published by the European Chemicals Agency in a concentration more than 0,1% (by unit weight). Related to specific components, the table above shows only hazardous ones within the meaning of the CLP regulation and their related classification as stated into product Safety Data Sheet.

The primary packaging is a paper bag composed by 2 layers of paper and 1 layer of HDPE. The most representative one for the products in terms of market supply is the 25 kg format that is supplied on wood pallet wrapped in LDPE film.

Table 2: Main characteristics of primary and secondary packaging

Primary packaging	Weight (kg)	Weight (% versus the product)	Weight biogenic carbon, kg C/kg
Paper	0,08	0,32%	$1,33 \cdot 10^{-3}$
LDPE	0,62	0,04%	0
Wood	11,28	0,75 %	$1,92 \cdot 10^{-3}$

5. LCA INFORMATION

The choice of the declared unit of 1 kg is in accordance with the applicable sector PCR. Packaging is included since it is proportioned to 1 kg of product.

Scope of application

The CEN has developed the standard EN 15804:2012+A2:2019/AC:2021, which defines a set of core rules for the development of Environmental Product Declarations (EPDs) applicable to construction products. This standard is developed according to a modular structure, as described below.

Reference Service Life (RSL)

No specific Reference Service Life (RSL) is defined for the present product, as the premixed plaster is an integral component of the building element to which it is applied and its durability depends on the application conditions, the exposure environment, building maintenance, and the service life of the substrate. Therefore, the technical service life of the product is considered to coincide with the service life of the building or of the construction element in which it is installed, in accordance with the provisions of EN 15804.

LCA software and tools used

The LCA study was carried out using a pre-verified LCA software, in accordance with Section 7.4.2.3 of the General Programme Instructions (GPI), as detailed below:

- LCA software: SimaPro 10.2.
- Background database: Ecoinvent 3.11 and EPD of suppliers. The most relevant considered data are European or specific from supplier. Generic and producer specific data are not more than 10 and 5 years old respectively (according to EN 15804 6.3.8.2. "Data quality requirements").

Description of system boundaries

The approach adopted is "cradle to gate with options" (A1–A3), including modules C1–C4 and module D.

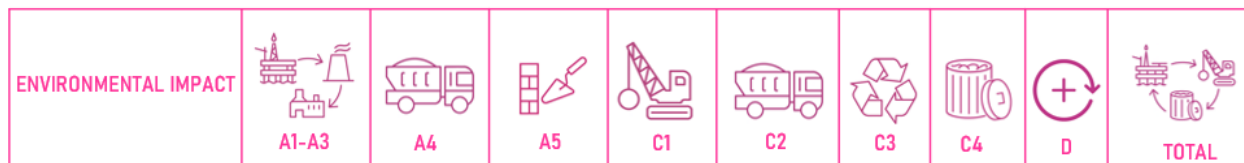


Table 3: System boundaries and processes included in the LCA

	Production			Construction		Life cycle							End of life				Reuse
	Raw material supply	Transport	Manufacturing	Transport	Installation in the building	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport to landfill	Waste treatment	Disposal	Reuse-Recovery Recycling potential
Module	A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Declared modules	X	X	X	X	X	ND	ND	ND	ND	ND	ND	ND	X	X	X	X	X
Geography	GLO	GLO	IT	EU27	EU27	-	-	-	-	-	-	-	EU27	EU27	EU27	EU27	EU27
Share of primary data	14,06%			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation – products	3,20%			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation – sites	0%			-	-	-	-	-	-	-	-	-	-	-	-	-	-

ND: Not Declared

The EPD is a multiple products type based on worst case result. Therefore, a sensitivity analysis has been performed between PQT30, PQT30F, PQT30 AV and PQT30 AVF and the results show that a variation of GWP-GHG indicator for A1-A3 is not larger than 3,20% between them. The EPD is therefore representative for all the products. A worst-case approach has been followed when required, like for transports. The EPD is based on single manufacturing site, therefore 0% is reported in the above table.

Product stage – Modules A1-A3: raw material supply, transport and production

- A1-A2 – Raw material supply and transport. Includes the extraction, production, supply and transport of raw materials and packaging materials to the Aquilaprem Srl manufacturing plant, as well as the energy consumption associated with the supply processes.
- A3 – Manufacturing. Includes the manufacturing process of the product, covering the dosing and mixing of raw materials and additives, the packaging of the finished product, process-related energy consumption, and the management of waste generated within the production plant.

The packaging materials considered in module A3 include wooden pallets, paper/cardboard packaging, and LDPE film used for load stabilisation and protection. These materials include both distribution packaging and packaging intended for the end user and are fully included within the system boundaries of module A3.

The product is packed in 25 kg bags made of paper + HDPE + paper and arranged in multiple layers on a wooden pallet with a capacity of 60 bags. The pallet is then packaged with an LDPE hood and wrapping and they include both distribution and consumer packaging, as follows.

Table 4: Packaging

Material	Distribution packaging	Consumer packaging
Wooden pallet	X	-
Plastic and LDPE film (e.g. for wrapping material)		X
Paper bag	-	X

Transport to the construction site – Module A4

Module A4 considers the transport of the finished product from the manufacturing plant to the destination construction site. The adopted scenario is representative of national distribution (800 km) and assumes transport by Euro 6 heavy-duty road vehicles, with average load factors consistent with standard logistics practices in the sector.

Table 5: Transport vehicle data

Scenario information	Unit	Value / specifications
Vehicle type / emission category	-	Heavy-duty truck 16–32 t, diesel, EURO 6
LCA process used (Ecoinvent 3.11)	-	Trasport, freight, lorry, 16–32 metric ton, diesel, EURO 6 {RER}
Specific vehicle consumption	l/100 km	Integrated in the Ecoinvent dataset
Transport distance	km	800
Apparent bulk density of the transported material	kg/m ³	1600
Volume capacity utilisation factor	-	Not applicable

Installation on site – Module A5

Module A5 includes the on-site installation operations of the product. The installation scenario assumes:

- the use of concrete mixer or equivalent electric equipment;
- water consumption according to the technical data sheet;
- an average material loss of 5% by weight during application.

Table 6: Installation into the building

Inputs from the technosphere – materials	Unit	Quantity	Comment
Complementary materials for installation	kg	0	Only water
Water use	kg	According to the technical data sheet	Mixing water
Electricity low voltage {IT}	kWh	$1,02 \cdot 10^{-3}$	Malt maker
Waste materials generated on site (by type)	kg	C&D waste: 0.05 kg (5% material loss by weight) Wood: $8,56 \cdot 10^{-3}$ LDPE: $0,41 \cdot 10^{-3}$ Paper: $3,16 \cdot 10^{-3}$	
Outgoing material flows (disposal and recycling)	%	C&D waste: 30% disposal – 70% recycling Wood: 10% incineration – 90% recycling LDPE: 45% incineration – 55% recycling Paper: 15% incineration – 85% recycling	

End-of-life – Modules C1-C4

The end-of-life modules consider the demolition phase of the building element containing the product and the subsequent management of construction and demolition (C&D) waste. The declared unit of 1 kg is considered, plus an additional 5% of water used for dust suppression.

The reference scenario assumes:

- conventional mechanical demolition (C1);
- transport of the waste to treatment facilities located at an average distance of 100 km (C2);
- treatment of the mineral waste resulting from demolition, with the recovery of a significant share of material intended for recycling as secondary aggregate (C3);
- landfill disposal of the non-recyclable fraction of C&D waste, in accordance with standard inert waste management practices (C4).

Table 7: Demolition

Inputs from the technosphere – materials	Unit	Quantity	Comment
Electricity low voltage {IT}	kWh	0,02	Demolition drill, 1200 W, operated for 1 minute
Transport to recycling	kg-km	73,5	70% recycling to a distance of 100 km
Transport to landfill	kg-km	31,5	30% landfill to a distance of 100 km

Module D: reuse, recovery, recycling potential

Module D includes the potential environmental benefits arising from the recycling of mineral waste at the end of life, used as a substitute for virgin aggregates, and from the energy recovery of a share of packaging waste (paper, wood, plastic).

The recovery and recycling scenarios are modelled in accordance with EN 15804 +A2 and the assumptions defined in the LCA datasets used, avoiding any double counting of biogenic content.

Pre-consumer recycled material

The product contains a share of pre-consumer recycled material, consisting of mineral components of industrial origin recovered from waste streams generated in upstream production processes and reintroduced into the production cycle prior to final use.

The presence of pre-consumer recycled material contributes to the reduction of virgin resource consumption and is accounted for in the LCA model in accordance with EN 15804.

Life cycle stages not considered

The use stage modules (B1–B7) are not considered in the present study, as the premixed plaster, once applied and hardened, does not entail any consumption of energy, water, or materials, nor any operational emissions during the use phase of the building. The water consumption required for the preparation and application of the product is entirely attributed to module A5 (installation) and is modelled within the construction process stage, in accordance with EN 15804 and the applicable PCR.

Any maintenance, repair, or replacement activities depend on specific project conditions, environmental exposure, and building management practices and therefore cannot be uniquely attributed to the product. For these reasons, modules B1–B7 are not modelled.

The exclusion of the use stage is considered consistent with the function of the product and compliant with the requirements of EN 15804:2012+A2:2019/AC:2021.

Data quality

This EPD covers products manufactured at the L'Aquila (Italy) plant during the reference year 2024. Manufacturing is a discontinuous (batch) process in which all components are mechanically mixed. The LCA model is based on a combination of primary (site-specific) data for the foreground system and secondary data for background processes.

Primary data were collected from the L'Aquila site and are representative of the 2024 production. They include, as applicable, annual totals and/or batch records for: raw material inputs, electricity and fuels, packaging, internal waste and waste treatment routes, and other site-specific operational data used to model modules A1–A3.

Data checks were performed for completeness and background datasets were sourced from Ecoinvent v3.11 and supplier-specific information, including EPDs provided by suppliers where available. Secondary datasets were selected to best match the required geographical, technological and temporal representativeness.

A data quality assessment was performed and reported according to EN 15804:2012+A2:2019 Annex E (E2).

The DQA covers those datasets that, together, account for at least 80% of the results of each declared environmental impact indicator, focusing on geographical, technical and temporal representativeness, and considering precision, completeness, consistency and data sources.

Overall, the quality of the relevant datasets is rated mostly "very good" and "good". The share of primary data is calculated based on the GWP-GHG results (excluding biogenic CO₂ uptake/emissions and biogenic carbon stored in the product; i.e., equivalent to GWP-total with biogenic CO₂ characterised as zero).

This is a simplified indicator that does not capture all aspects of data quality and is not comparable across product categories. The calculated share of primary data for modules A1–A3 is: 14,06% (GWP-GHG based). The EPD represents a group of products manufactured at the same site with the same major core processes.

For modules A1–A3, the GWP-GHG results of the included products do not differ by more than 10%; therefore, a single set of declared results is considered representative for the product group.

The reported variation in the EPD for GWP-GHG (A1–A3) is "<10%".

Table 8: Data quality

Process	Source type	Source	Reference year	Data category	Dataset quality	Share of primary GWP-GHG data for A1-A3
Inorganic binders in the product	EPD	Cement G 52.5 II/A-LL: EPD supplier Cement 42.5 IV/A: EPD supplier	2024 2023	Primary data	Very good	0% 0%
Water consumption	Database	EPD owner	2024	Primary data	Very good	0%
Additives and packaging	Database	Ecoinvent v. 3.11	2024	Secondary data	Good	0%
Electricity consumption in manufacturing of product	Collected data	EPD owner	2024	Primary data	Very good	8,46%
LPG consumption in manufacturing of product	Collected data	EPD owner	2024	Primary data	Very good	5,35%
Diesel consumption in manufacturing of product	Collected data	EPD owner	2024	Primary data	Very good	0,25%
Supply of raw material and packaging	Database	Ecoinvent v. 3.11	2024	Secondary data	Good	0%
Total share of primary data, of GWP- GHG results for A1-A3						14,06%

Infrastructure and capital goods

Infrastructure and capital goods are not included in the LCA model, in accordance with Section A.3.1.2 of the General Programme Instructions (GPI) and EN 15804, as their contribution is considered not relevant in relation to the overall environmental impacts of the product.

Allocation rules

The applied allocation rules are mass-based allocation. The Company sources raw materials from different locations across Europe and other parts of the world and by different means of transport. For this reason, transport is allocated according to raw material quantities.

6. ENVIRONMENTAL INDICATORS

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. The results of the end-of-life stage (modules C1-C4) should be considered when using the results of the product stage (modules A1-A3). The results are referred to the declared unit of 1 kg of product, including 0,4% w/w of packaging in the 25 kg format.



GWP

Climate change

GWP total – Global Warming Potential refers to the emission/presence of GHGs (greenhouse gases) in the atmosphere (mainly CO₂, N₂O, CH₄) that contribute to the increase in global temperature. GWP total includes: GWP-fossil, GWP-biogenic, GWP-luluc (land use and land-use change)



POCP

Photochemical ozone formation

The photochemical ozone formation potential refers to the formation of ozone in the lower atmosphere. This phenomenon is common in urban areas, where large quantities of pollutants (such as VOCs and NO_x) are emitted daily from industrial sources and vehicles. It occurs mainly during the summer period.



ODP

Ozone layer depletion

The ozone depletion potential refers to the degradation of the stratospheric ozone layer, which is responsible for blocking the ultraviolet (UV) component of solar radiation. Ozone depletion is caused by particularly reactive substances originating from chlorofluorocarbons (CFCs) or chlorofluoromethanes (CFMs).



ADP Minerali e metalli

Abiotic resource depletion – minerals and metals

Abiotic depletion potential refers to the depletion of mineral and metal resources.



AP

Acidification

The acidification potential refers to the emission of specific acidifying substances (e.g. NO_x, SO_x) into the air. These substances lower the pH of precipitation, leading to predictable damage to ecosystems.



ADP
Combustibili fossili

Abiotic resource depletion – fossil fuels

Abiotic depletion potential for fossil fuels refers to the depletion of fossil fuel resources.



EP

Eutrophication

The eutrophication potential refers to the enrichment of nutrients, which leads to imbalances in ecosystems and causes the death of fauna and a reduction in plant biodiversity. It includes: EP-freshwater, EP-marine, EP-terrestrial



WDP

Water consumption

This indicator expresses the potential water deprivation, which consists of the inability to meet water demand.

7. ENVIRONMENTAL PERFORMANCE

This EPD, developed using a cradle-to-gate approach with options, represents the Aquilaprem PQT product family (premixed plasters). For each indicator and module A-C, it's declared the highest result of the included products, and for module D, it's declared the lowest benefit of avoided processes (or highest drawback of compensating processes) and the highest load of included processes. This option thus corresponds to the results of a "worst-case product", which may consist of results from one or several of the included products. In this option, the content declaration includes the lowest amounts of recycled and biogenic content of the included products and their packaging, respectively. The results show for these indicators a variation larger than 10% have been obtained.

The results presented are therefore considered representative of the entire Aquilaprem PQT product family.

Table 9: Environmental impact potential PQT 30, PQT 30F, PQT AV, PQT AVF— mandatory indicators according to EN 15804

Core Environmental Impacts	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
GWP - TOTAL	kg CO ₂ eq	1,56E-01	6,48E-02	1,43E-02	1,23E-02	8,41E-03	1,52E-02	8,19E-04	-3,41E-03
GWP - Fossil	kg CO ₂ eq	1,67E-01	6,48E-02	2,36E-03	1,23E-02	8,41E-03	1,52E-02	8,19E-04	-3,41E-03
GWP - Biogenic	kg CO ₂ eq	-1,18E-02	4,52E-06	1,19E-02	3,91E-06	5,86E-07	1,14E-05	7,60E-08	-1,07E-06
GWP - LULUC	kg CO ₂ eq	8,31E-05	3,62E-06	1,13E-06	4,88E-07	4,70E-07	3,55E-06	4,22E-08	-2,05E-06
ODP	kg CFC11 eq	3,67E-09	8,61E-10	2,96E-11	2,58E-10	1,12E-10	3,88E-10	1,18E-11	-7,73E-11
AP	mol H ⁺ eq	5,65E-04	1,02E-04	6,98E-06	3,34E-05	1,33E-05	1,23E-04	7,37E-06	-4,27E-05
EP - freshwater	kg P eq	2,12E-05	3,75E-06	3,98E-07	3,28E-06	4,87E-07	1,11E-05	2,30E-08	-3,15E-07
EP - marine	kg N eq	7,89E-05	2,11E-05	3,00E-06	7,24E-06	2,74E-06	4,15E-05	3,36E-06	-1,52E-05
EP - terrestrial	mol N eq	1,45E-03	2,26E-04	2,48E-05	7,30E-05	2,94E-05	4,49E-04	3,68E-05	-2,08E-04
POCP	kg NMVOC eq	4,31E-04	1,51E-04	8,56E-06	2,76E-05	1,95E-05	1,49E-04	1,12E-05	-4,89E-05
ADP - minerals and metals	kg Sb eq	8,48E-08	5,38E-09	1,97E-10	1,04E-10	6,98E-10	1,77E-09	2,72E-11	-3,54E-10
ADP - fossil	MJ	6,41E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
WDP	m ³ depriv.	7,05E-03	7,29E-04	4,63E-03	-3,41E-04	9,46E-05	3,93E-04	6,22E-06	-2,35E-05

GWP-TOTAL: Global Warming Potential total; **GWP-FOSSIL:** Global Warming Potential fossil fuels; **GWP-BIOGENIC:** Global Warming Potential biogenic; **GWP-LULUC:** Global Warming Potential land use and land use change; **ODP:** Depletion Potential of the stratospheric Ozone layer; **AP:** Acidification Potential; **EP-FRESHWATER:** Eutrophication Potential, freshwater; **EP-MARINE:** Eutrophication Potential, marine; **EP-TERRESTRIAL:** Eutrophication Potential, terrestrial; **POCP:** Formation potential of tropospheric ozone; **ADP-MINERALS&METALS:** Abiotic Depletion Potential for non-fossil resources; **ADP-FOSSIL:** Abiotic Depletion Potential for fossil resources; **WDP:** Water Deprivation Potential.

Table 10: Environmental impact potential PQT 30, PQT 30F, PQT AV, PQT AVF – additional mandatory and voluntary indicators

Core Environmental Impacts	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
GWP – GHG	kg CO ₂ eq	1,68E-01	6,48E-02	2,39E-03	1,23E-02	8,41E-03	1,52E-02	8,19E-04	-3,41E-03

GWP-GHG: This indicator accounts for all greenhouse gases except biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product. As such, the indicator is identical to GWP-total except that the CF for biogenic CO₂ is set to zero.

Table 11: Environmental impact potential PQT 30, PQT 30F, PQT AV, PQT AVF – use of resources

Core Environmental Impacts	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
PERE	MJ (LHM)	3,35E-01	1,76E-03	1,77E-02	1,13E-02	2,29E-04	7,77E-03	4,92E-05	-8,06E-04
PERM	MJ (LHM)	1,46E-01	0,00E+00	-1,64E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PERT	MJ (LHM)	4,81E-01	1,76E-03	1,32E-03	1,13E-02	2,29E-04	7,77E-03	4,92E-05	-8,06E-04
PENRE	MJ (LHM)	5,00E-01	2,26E-06	9,10E-03	1,08E-04	2,93E-07	2,52E-05	6,35E-08	-1,69E-05
PENRM	MJ (LHM)	1,96E-01	0,00E+00	-9,09E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PENRT	MJ (LHM)	6,73E-01	2,26E-06	1,24E-05	1,08E-04	2,93E-07	2,52E-05	6,35E-08	-1,69E-05
SM	kg	8,81E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
RSF	MJ (LHM)	2,39E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
NRSF	MJ (LHM)	3,93E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
FW	m ³	3,15E-04	2,96E-05	1,04E-04	1,22E-06	3,85E-06	1,57E-04	2,52E-07	7,61E-06

PERE: Use of renewable primary energy excluding renewable primary energy resources used as raw materials; **PERM:** Use of renewable primary energy resources used as raw materials; **PERT:** Total use of renewable primary energy resources (primary energy and primary energy resources used as raw materials); **PENRE:** Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials; **PENRM:** Use of non-renewable primary energy resources used as raw materials; **PENRT:** Total use of non-renewable primary energy resources (primary energy and primary energy resources used as raw materials); **SM:** Use of secondary material; **RSF:** Use of renewable secondary fuels; **NRSF:** Use of non-renewable secondary fuels; **FW:** Net use of fresh water.

Table 12: Environmental impact potential PQT 30, PQT 30F, PQT AV, PQT AVF – waste output flows and waste generation

Core Environmental Impacts	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
HWD	kg	7,23E-04	6,95E-04	4,53E-05	6,88E-05	9,02E-05	8,60E-05	1,80E-06	-3,00E-05
NHWD	kg	3,05E-02	1,11E-03	3,62E-02	9,27E-04	1,44E-04	2,03E+00	1,06E-05	-1,10E-02
RWD	kg	1,98E-06	3,73E-08	2,73E-08	1,80E-07	4,84E-09	1,90E-07	5,93E-10	-2,40E-08
Components for re-use	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Materials for recycling	kg	1,05E-04	0,00E+00	2,46E-02	0,00E+00	0,00E+00	7,35E-01	0,00E+00	0,00E+00
Materials for energy recovery	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Exported energy – electricity	MJ	0,00E+00	0,00E+00	2,92E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-2,92E-03
Exported energy – heat	MJ	0,00E+00	0,00E+00	5,83E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-5,83E-03
Recovered energy	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

HWD: Hazardous waste disposed; **NHWD:** Non-Hazardous waste disposed; **RWD:** Radioactive waste disposed

The indicator reported below is for satisfying what asked by EN 15804:2012+A2:2019/AC:2021. 1 kg biogenic carbon is equivalent to 44/12 kg CO₂. It's reported the lowest amount of biogenic carbon content between the four products, according to the worst-case approach.

Table 13: Biogenic carbon content

Core Environmental Impacts	Unit	A1-A3
Biogenic carbon content – product	kg C	0,00E+00
Biogenic carbon content – packaging	kg C	-3,25E-03

8. ADDITIONAL ENVIRONMENTAL INFORMATION

End-of-life scenarios

In compliance with PCR 2019:14 when the declared scenario is a mix of end-of-life alternatives (e.g. reuse, recycling, incineration with energy recovery, landfill), the corresponding 100% scenarios shall also be declared.

Therefore, in addition to the reference scenario with 70% recycling and the 30% disposal, the following 100% scenarios are reported per declared unit (1 kg of product):

- 100% Recycling: 1 kg of material at EoL is recovered, with corresponding benefits declared in module D.
- 100% Landfill: 1 kg of material at EoL is disposed in landfill without recovery.

These scenarios are provided in accordance with the PCR requirements, to ensure full comparability with other EPDs.

Table 14: End-of-life scenario with 100% recycled

Core Environmental Impacts	Unit	C1	C2	C3	C4	D
GWP - TOTAL	kg CO2 eq	1,23E-02	8,41E-03	2,17E-02	0,00E+00	-3,41E-03
GWP - Fossil	kg CO2 eq	3,91E-06	5,86E-07	1,62E-05	0,00E+00	-1,07E-06
GWP - Biogenic	kg CO2 eq	4,88E-07	4,70E-07	5,07E-06	0,00E+00	-2,05E-06
GWP - LULUC	kg CO2 eq	2,58E-10	1,12E-10	5,54E-10	0,00E+00	-7,73E-11
ODP	kg CFC11 eq	3,34E-05	1,33E-05	1,76E-04	0,00E+00	-4,27E-05
AP	mol H+ eq	3,28E-06	4,87E-07	1,58E-05	0,00E+00	-3,15E-07
EP - freshwater	kg P eq	7,24E-06	2,74E-06	5,93E-05	0,00E+00	-1,52E-05
EP - marine	kg Neq	7,30E-05	2,94E-05	6,42E-04	0,00E+00	-2,08E-04
EP - terrestrial	mol Neq	2,76E-05	1,95E-05	2,12E-04	0,00E+00	-4,89E-05
POCP	kg NMVOC eq	1,04E-10	6,98E-10	2,53E-09	0,00E+00	-3,54E-10
ADP - minerals and metals	kg Sb eq	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
ADP - fossil	MJ	-3,41E-04	9,46E-05	5,61E-04	0,00E+00	-2,35E-05
WDP	m3 depriv.	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

Table 15: End-of-life scenario with 100% disposal

Core Environmental Impacts	Unit	C1	C2	C3	C4	D
GWP - TOTAL	kg CO2 eq	1,23E-02	8,41E-03	0,00E+00	2,73E-03	0,00E+00
GWP - Fossil	kg CO2 eq	3,91E-06	5,86E-07	0,00E+00	2,53E-07	0,00E+00
GWP - Biogenic	kg CO2 eq	4,88E-07	4,70E-07	0,00E+00	1,41E-07	0,00E+00
GWP - LULUC	kg CO2 eq	2,58E-10	1,12E-10	0,00E+00	3,92E-11	0,00E+00
ODP	kg CFC11 eq	3,34E-05	1,33E-05	0,00E+00	2,46E-05	0,00E+00
AP	mol H+ eq	3,28E-06	4,87E-07	0,00E+00	7,67E-08	0,00E+00
EP - freshwater	kg P eq	7,24E-06	2,74E-06	0,00E+00	1,12E-05	0,00E+00
EP - marine	kg Neq	7,30E-05	2,94E-05	0,00E+00	1,23E-04	0,00E+00
EP - terrestrial	mol Neq	2,76E-05	1,95E-05	0,00E+00	3,72E-05	0,00E+00
POCP	kg NMVOC eq	1,04E-10	6,98E-10	0,00E+00	9,08E-11	0,00E+00
ADP - minerals and metals	kg Sb eq	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
ADP - fossil	MJ	-3,41E-04	9,46E-05	0,00E+00	2,07E-05	0,00E+00
WDP	m3 depriv.	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

Recycled material content

The product contains a share of pre-consumer recycled material, consisting of mineral components of industrial origin recovered from waste streams generated in upstream production processes and reintroduced into the production cycle prior to the final use stage.

The content of pre-consumer recycled material varies depending on the specific product formulation.

The recycled material content has been accounted for in the LCA model in accordance with EN 15804:2012+A2:2019/AC:2021 and the General Programme Instructions of the EPD programme.

Table 14: Recycled material content (Pre-Consumer)

Product	Recycled material content (Pre-Consumer)
PQT 30	0,80%
PQT 30F	0,93%
PQT AV	0,86%
PQT AVF	0,91%

Quality and environmental management systems

Aquilaprem operates in accordance with structured quality management procedures aimed at controlling production processes and ensuring product compliance with applicable technical and regulatory requirements. Management activities and continuous improvement of production processes also include the consideration of relevant environmental aspects, in line with the objectives of product environmental communication.

9. ABBREVIATIONS

Below are the abbreviations used in this document.

Table 17: Abbreviations, name and definition

Abbreviation	Definition
EN	European Norm (Standard)
EF	Environmental Footprint
GPI	General Programme Instructions
ISO	International Organization for Standardization
CEN	European Committee for Standardization
CLC	Co-location centre
CPC	Central product classification

Abbreviation	Definition
ADPF - fossil	Abiotic depletion potential - fossil
WDP	Water deprivation potential
GWP - GHG	Global warming potential- accounts for all greenhouse gases except biogenic CO ₂ uptake and emissions and biogenic carbon stored in the product and/or the packaging.
ADPF - fossil	Abiotic depletion potential - fossil
PERE	Use of primary energy excluding renewable primary energy resources used as raw materials
PERM	Use of renewable primary energy resources used as raw Materials
PERT	Use of total use of renewable primary energy resources

GHS	Globally harmonized system of classification and labelling of chemicals
GRI	Global Reporting Initiative
SVHC	Substances of Very High Concern
ND	Not Declared
GWP - total	Global warming potential
GWP - biogenic	Global warming potential - biogenic
GWP - luluc	Global warming potential - land use and land use change
GWP - fossil	Global warming potential - fossil
ODP	Ozone depletion potential
AP	Acidification potential
EP - freshwater	Eutrophication potential - for freshwater compartment
EP - marine	Eutrophication potential - for marine compartment
EP - terrestrial	Eutrophication potential - for terrestrial compartment
POCP	Photochemical ozone creation potential
ADPE- materials & metals	Abiotic depletion potential

PENRE	Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials
PENRM	Use of non-renewable primary energy resources used as raw
SQP	Index of soil quality potential.
SM	Use of secondary materials
RSF	Use of renewable secondary fuels
NRSF	Use of non-renewable secondary fuels
FW	Use of fresh water (net)
HWD	Hazardous waste disposed)
NHWD	Non-hazardous waste disposed
RWD	Radioactive waste disposed
CRU	Components for re-use
MFR	Materials for recycling
MER	Materials for energy recovery
EEE	Exported energy - electrical
EET	Exported energy - thermal

10. REFERENCES

Technical standards and reference standards

- EN 15804
Sustainability of construction works – Environmental product declarations – Core rules for the product category of construction products.
European framework standard establishing the core rules for the preparation of Environmental Product Declarations (EPDs) for construction products.
- EN 13813
Screeds and materials for screeds – Properties and requirements
- UNI 11743:2019
Paper and board – Determination of recyclability parameters of materials and products with a predominantly cellulosic composition.
Italian standard defining how to assess the recyclability of paper and cardboard, relevant for LCA/EPD studies related to packaging management.

European directives and regulations

- Directive 2008/98/EC
Waste Framework Directive.
Defines the European waste management hierarchy (prevention, reuse, recycling, recovery, disposal) and introduces the principles of extended producer responsibility.

International documents and guidelines

- European Residual Mixes – Version 1.1 (2020-09-08, AIB)
Document issued by the Association of Issuing Bodies defining European electricity residual mixes, used in LCA/EPD calculations when the specific origin of electricity is not known.
- General Programme Instructions (GPI) of the International EPD® System – Version 5.0.1
General rules of the International EPD® System programme, providing guidance on how to prepare, verify, and register an EPD.
- PCR 2019:14 Construction Products (EN 15804: A2), UN CPC Code 37510 – Version 2.01
Product Category Rules specific to construction products, aligned with EN 15804:2019+A2.
- HBEFA – Handbook Emission Factors for Road Transport
Handbook providing emission factors for road transport, used in LCA calculations to model transport stages.

ISO standards related to LCA and EPDs

- ISO 14025
Environmental labels and declarations – Type III environmental declarations – Principles and procedures.
Standard establishing the principles for Type III environmental declarations (EPDs).
- ISO 14044
Environmental management – Life cycle assessment – Requirements and guidelines.
Reference standard for conducting Life Cycle Assessment (LCA), defining methodological requirements and guidelines.

11. LIMITATIONS OF USE OF THE EPD AND RESPONSABILITIES

This EPD is intended for B2B (Business-to-Business) use in the phases of design, environmental assessment, procurement, and supply.

- It does not constitute a warranty of product performance.
- It does not replace technical, commercial, or safety documentation.
- It shall not be used for direct comparisons with other EPDs unless all conditions of EN 15804 are fully met (same PCR, same functional/declared unit, same system boundary, same LCIA method, same version).

EPDs belonging to the same product category but registered in different EPD programmes, or not compliant with EN 15804, may not be comparable. For two EPDs to be comparable, they shall:

- be based on the same PCR (including the same version), or on fully aligned PCRs or PCR versions.
- cover products with identical functions, technical performances, and use (e.g., identical declared/functional units);
- have equivalent system boundaries and consistent data descriptions.
- apply equivalent data quality requirements, as well as equivalent data collection and allocation methods.
- apply identical cut-off rules and identical impact assessment methods (including the same version of characterisation factors);
- present equivalent content declarations;
- be valid at the time of comparison.

For further information on comparability, reference is made to EN 15804 and ISO 14025.

Data ownership and responsibilities

Aquilaprem Srl holds:

- exclusive ownership of this EPD;
- responsibility for the data and their quality;
- responsibility for the accuracy of the declared information.

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12. VERIFICATION AND VALIDATION

Type of verification: EPD Process Certification

Verification body: IMQ S.p.A. – Istituto Italiano del Marchio di Qualità (Envrondec-accredited verifier).

The internal Aquilaprem process for the generation of EPDs is subject to annual verification by an independent, accredited third-party body.

EPD process certification involves an accredited certification body certifying and periodically auditing the EPD process and conducting external and independent verification of EPDs that are regularly published. More information can be found in the General Programme Instructions on www.envrondec.com

The verification is third-party verification, in compliance with ISO 14025:2006 and EN 15804 +A2.

Validity period: 5 years from the date of issue (2026-04-15÷2031-04-14).

The EPD may be updated in the event of substantial changes to the manufacturing process or to the life cycle inventory data.

13. VERSION HISTORY

Original version of the EPD, 2026-04-15.



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