ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH EN 15804+A2 & ISO 14025 / ISO 21930

REACT V, Swegon Group AB

EPD of multiple products, based on the results of a representative product

Included products: REACT V BBAC size Ø100-630, REACT V BMB size Ø100-630, REACT V BMP size Ø100-630, REACT V GMB size Ø100-630, and REACT V SKNX size Ø100-500.

EPD HUB, EPD number HUB-3082

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Created with One Click LCA

GENERAL INFORMATION

MANUFACTURER

Manufacturer	Swegon Group AB
Address	JA Wettergrens gata 7, 421 30, Västra Frölunda, Sweden
Contact details	info@swegon.se
Website	www.swegon.com

EPD STANDARDS, SCOPE AND VERIFICATION

Program operator	EPD Hub, hub@epdhub.com
Reference standard	EN 15804+A2:2019 and ISO 14025
PCR	EPD Hub Core PCR Version 1.1, 5 Dec 2023
Sector	Construction product
Category of EPD	Third party verified EPD
Scope of the EPD	Cradle to gate with options, A4-B7, and modules C1-C4, D
EPD author	Heloise Hedbom
EPD verification	Independent verification of this EPD and data, according to ISO 14025: ☐ Internal verification ☑ External verification
EPD verifier	Imane Uald Lamkaddam as an authorized verifier for EPD Hub

The manufacturer has the sole ownership, liability, and responsibility for the EPD. EPDs within the same product category but from different programs may not be comparable. EPDs of construction products may not be comparable if they do not comply with EN 15804 and if they are not compared in a building context.

PRODUCT

Product name	REACT V
Additional labels	See Annex 1
Product reference	-
Place of production	Tomelilla, Sweden
Period for data	2023
Averaging in EPD	No averaging
Variation in GWP-fossil for A1-A3	-

ENVIRONMENTAL DATA SUMMARY

Declared unit	1 unit of REACT V GMB 250
Declared unit mass	3,6 kg
GWP-fossil, A1-A3 ($kgCO_2e$)	3,26E+01
GWP-total, A1-A3 ($kgCO_2e$)	3,14E+01
Secondary material, inputs (%)	5,63
Secondary material, outputs (%)	81
Total energy use, A1-A3 (kWh)	132
Net freshwater use, A1-A3 (m^3)	0,31

PRODUCT AND MANUFACTURER

ABOUT THE MANUFACTURER

People spend most of their time indoors, which is why we need a sound indoor climate for our health, well-being, and happiness. Swegon's ambition is to achieve the world's best indoor environment with the least possible impact on the external environment. Our business models, services, products, and systems are all designed to provide the right solution for each individual project.

Swegon Group AB is a market leading supplier in the field of indoor environment, offering solutions for ventilation, heating, cooling and climate optimization, as well as connected services and expert technical support. Swegon has subsidiaries in and distributors all over the world and production plants in Europe, North America and India. The company employs more than 3 300 people.

PRODUCT DESCRIPTION

REACT V is a component in ventilation systems for regulating the flow of ventilated air. It can regulate a variable or constant airflow independently of the duct pressure. REACT V is available in sizes Ø100-630 and in five different versions, depending on the type of actuator. REACT V consists mainly of sheet metal steel, actuator, rubber gasket for sealing when connected in the ventilation duct, and a rubber gasket for sealing the damper blade.

This EPD covers multiple REACT V products, GWP-GHG results for all included variations are provided in Annex 1.

Please visit https://www.swegon.com/products-and-services/air-distribution/dampers-and-measurement-units/react--vav/react-v/ for more information.
Further information can be found at https://www.swegon.com/.

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass %	Material origin
Metals	91	Europe, Asia
Minerals	0	-
Fossil materials	9	Europe, Asia
Bio-based materials	0	-

BIOGENIC CARBON CONTENT

Product's biogenic carbon content at the factory gate

Biogenic carbon content in product, kg C	0
Biogenic carbon content in packaging, kg C	0,35

FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	1 unit of REACT V GMB 250
Mass per declared unit	3,6 kg
Functional unit	Air volume control from one REACT V GMB 250 during 25 years, assuming operation 8760 hours a year.
Reference service life	25 years

SUBSTANCES, REACH - VERY HIGH CONCERN

The product does not contain any REACH SVHC substances in amounts greater than 0,1 % (1000 ppm).

PRODUCT LIFE-CYCLE

SYSTEM BOUNDARY

This EPD covers the life-cycle modules listed in the following table.

Product stage			Assembly stage		Use stage							End of life stage				Beyond the system boundaries		
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D		
×	×	×	×	×	MND	MND	MND	MND	MND	×	MND	×	×	×	×	×		
Raw materials	Transport	Manufacturing	Transport	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	Deconstruction/ demolition	Transport	Waste processing	Disposal	Reuse	Recovery	Recycling

Modules not declared = MND. Modules not relevant = MNR

MANUFACTURING AND PACKAGING (A1-A3)

The environmental impacts considered for the product stage cover the manufacturing of raw materials used in the production as well as packaging materials and other ancillary materials. Also, fuels used by machines, and handling of waste formed in the production processes at the manufacturing facilities are included in this stage. The study also considers the material losses occurring during the manufacturing processes as well as losses during electricity transmission.

The REACT V is primarily composed of European steel, an actuator, rubber gaskets and plastics. The steel is delivered as rolled sheets and undergoes processing at Swegon's facility in Tomelilla, Sweden. Then the electronics, other metal components, plastic parts, and sealing materials are added to form the final product before being packaged. The attached actuator primarily consists of steel, plastic, and a printed circuit board.

The electricity demand in the facility is modelled using a renewable electricity mix that is supplied to Swegon consisting of 100 % hydropower. Waste from the manufacturing process include steel scrap and copper welding wire, both of which are sent for material recycling.

TRANSPORT AND INSTALLATION (A4-A5)

Transportation impacts occurred from final product's delivery to construction site (A4) cover fuel direct exhaust emissions, environmental impacts of fuel production, as well as related infrastructure emissions. The transportation to the construction site is calculated based on a weighted average of sales.

The product is sold ready to be installed and no raw material waste is generated from installation (A5). The end of life treatment of product packaging is declared and average EU scenario per packaging material has been applied with different ratios of recycling, incineration, and disposal in landfill.

PRODUCT USE AND MAINTENANCE (B1-B7)

Electricity consumption during the use phase is calculated over a 25-year period, based on measured data from the REACT V GMB 250. The electricity mix used is a weighted average of sales from the Tomelilla factory. Replacement of components or parts is not included.

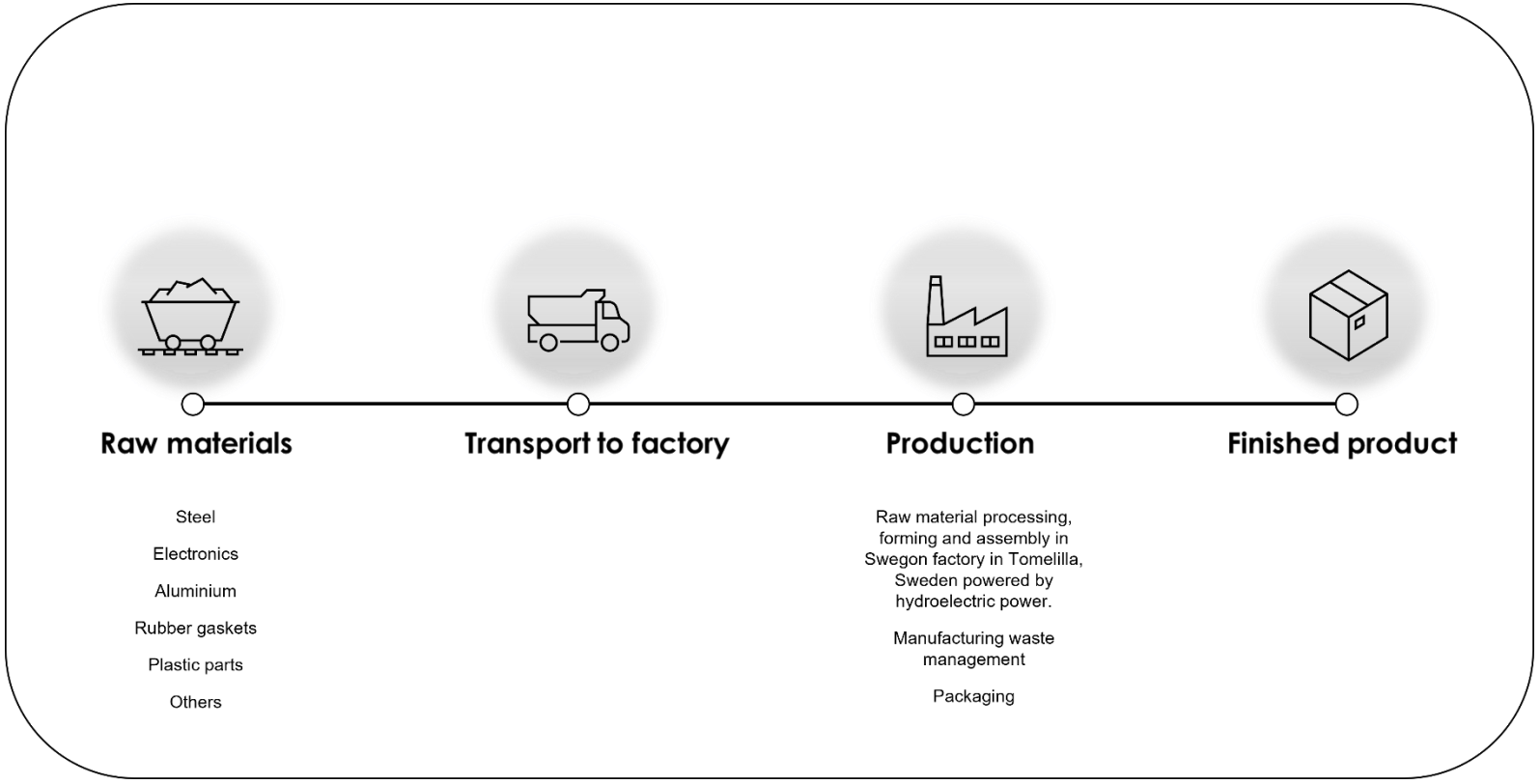
Please note that the environmental impact during the use phase varies according to individual usage patterns and geographic location. The results presented for module B6 in this EPD are scenario-based only. Therefore, the

environmental impact from the use phase should be examined separately for individual projects.
Air, soil, and water impacts during the use phase have not been studied.

PRODUCT END OF LIFE (C1-C4, D)

At the end of product life, the REACT V damper is assumed to be demolished. The impact of deconstruction (C1) is modelled based on literature data for energy use in demolition. Waste processing (C3) and disposal (C4) is modelled with consideration to the markets the REACT V is sold. The applied scenarios, which are based on literature data, include different ratios of material recycling, incineration, and landfill for the included materials.

MANUFACTURING PROCESS



LIFE-CYCLE ASSESSMENT

CUT-OFF CRITERIA

The study does not exclude any modules or processes which are stated mandatory in the reference standard and the applied PCR. The study does not exclude any hazardous materials or substances. The study includes all major raw material and energy consumption. All inputs and outputs of the unit processes, for which data is available for, are included in the calculation. There is no neglected unit process more than 1% of total mass or energy flows. The module specific total neglected input and output flows also do not exceed 5% of energy usage or mass.

ALLOCATION, ESTIMATES AND ASSUMPTIONS

Allocation is required if some material, energy, and waste data cannot be measured separately for the product under investigation. All allocations are done as per the reference standards and the applied PCR. In this study, allocation has been done in the following ways:

Data type	Allocation
Raw materials	No allocation
Packaging material	Allocated by mass or volume
Ancillary materials	No allocation
Manufacturing energy and waste	Allocated by mass or volume

AVERAGES AND VARIABILITY

Type of average	No averaging
Averaging method	Not applicable
Variation in GWP-fossil for A1-A3	-

This EPD is product and factory specific and does not contain average calculations. The environmental impact data presented are specific for the product REACT V GMB 250 damper. The calculated GWP-GHG for all included sizes is shown for modules A1-A3 in Annex 1. The products included in this EPD are:

- REACT V BBAC size Ø100-630
- REACT BMB size Ø100-630
- REACT V BMP size Ø100-630
- REACT V GMB size Ø100-630
- REACT V SKNX size Ø100-500

LCA SOFTWARE AND BIBLIOGRAPHY

This EPD has been created using One Click LCA EPD Generator. The LCA and EPD have been prepared according to the reference standards and ISO 14040/14044. The EPD Generator uses Ecoinvent v3.8, Plastics Europe, Federal LCA Commons and One Click LCA databases as sources of environmental data.

ENVIRONMENTAL IMPACT DATA

CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, PEF

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP – total[1)]	kg CO_2e	3,18E+01	4,84E-01	-8,92E-01	3,14E+01	4,68E-01	1,36E+00	MND	MND	MND	MND	MND	3,18E+01	MND	1,20E-02	1,93E-02	5,95E-01	1,78E-02	-5,84E+00
GWP – fossil	kg CO_2e	3,18E+01	4,83E-01	3,96E-01	3,26E+01	4,68E-01	6,46E-02	MND	MND	MND	MND	MND	3,09E+01	MND	1,20E-02	1,93E-02	5,95E-01	1,78E-02	-5,84E+00
GWP – biogenic	kg CO_2e	0,00E+00	0,00E+00	-1,29E+00	-1,29E+00	0,00E+00	1,29E+00	MND	MND	MND	MND	MND	-2,78E-17	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
GWP – LULUC	kg CO_2e	4,56E-02	2,10E-04	2,34E-03	4,82E-02	1,97E-04	1,34E-05	MND	MND	MND	MND	MND	8,52E-01	MND	1,19E-06	7,53E-06	1,49E-04	5,05E-06	-1,29E-03
Ozone depletion pot.	kg $CFC\text{-}_{11}$e	1,70E-06	1,08E-07	3,61E-08	1,85E-06	1,01E-07	2,31E-09	MND	MND	MND	MND	MND	1,44E-06	MND	2,55E-09	4,52E-09	3,63E-08	1,76E-09	-2,24E-07
Acidification potential	mol H^+e	1,87E-01	2,89E-03	3,26E-03	1,93E-01	1,45E-03	1,09E-04	MND	MND	MND	MND	MND	1,65E-01	MND	1,24E-04	6,20E-05	4,84E-03	4,43E-05	-3,33E-02
EP-freshwater[2)]	kg Pe	3,31E-03	3,86E-06	1,79E-05	3,33E-03	3,96E-06	4,58E-07	MND	MND	MND	MND	MND	1,72E-03	MND	3,96E-08	1,59E-07	1,06E-05	7,18E-08	-4,34E-04
EP-marine	kg Ne	3,15E-02	6,63E-04	1,89E-03	3,40E-02	2,92E-04	7,85E-05	MND	MND	MND	MND	MND	2,79E-02	MND	5,50E-05	1,36E-05	8,68E-04	2,10E-05	-6,38E-03
EP-terrestrial	mol Ne	3,63E-01	7,37E-03	7,22E-03	3,77E-01	3,25E-03	4,04E-04	MND	MND	MND	MND	MND	3,50E-01	MND	6,03E-04	1,51E-04	9,83E-03	1,63E-04	-7,87E-02
POCP ("smog")[3)]	kg NMVOCe	1,05E-01	2,30E-03	2,12E-03	1,09E-01	1,20E-03	1,22E-04	MND	MND	MND	MND	MND	8,50E-02	MND	1,66E-04	5,79E-05	2,75E-03	5,04E-05	-2,96E-02
ADP-minerals & metals[4)]	kg Sbe	6,88E-03	1,35E-06	4,67E-05	6,93E-03	1,65E-06	9,72E-08	MND	MND	MND	MND	MND	1,20E-03	MND	6,06E-09	5,13E-08	7,45E-05	1,37E-08	-7,94E-05
ADP-fossil resources	MJ	3,86E+02	7,19E+00	7,06E+00	4,00E+02	6,79E+00	2,28E-01	MND	MND	MND	MND	MND	1,90E+03	MND	1,61E-01	2,99E-01	2,98E+00	1,27E-01	-5,70E+01
Water use[5)]	m^3e depr.	1,19E+01	3,11E-02	2,33E-01	1,22E+01	2,99E-02	1,83E-02	MND	MND	MND	MND	MND	1,67E+02	MND	4,32E-04	1,35E-03	5,79E-02	5,68E-04	-1,01E+00

1) GWP = Global Warming Potential; 2) EP = Eutrophication potential. Required characterisation method and data are in kg P-eq. Multiply by 3,07 to get PO4e; 3) POCP = Photochemical ozone formation; 4) ADP = Abiotic depletion potential; 5) EN 15804+A2 disclaimer for Abiotic depletion and Water use and optional indicators except Particulate matter and Ionizing radiation, human health. The results of these environmental impact indicators shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.

ADDITIONAL (OPTIONAL) ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, PEF

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Particulate matter	Incidence	1,48E-06	4,41E-08	2,55E-08	1,55E-06	3,72E-08	1,66E-09	MND	MND	MND	MND	MND	1,46E-06	MND	3,33E-09	2,07E-09	5,46E-08	8,65E-10	-4,25E-07
Ionizing radiation[6)]	kBq U235e	2,56E+00	3,40E-02	3,13E-02	2,62E+00	3,17E-02	2,03E-03	MND	MND	MND	MND	MND	1,21E+02	MND	7,39E-04	1,46E-03	1,58E-02	5,90E-04	3,31E-03
Ecotoxicity (freshwater)	CTUe	2,22E+03	6,32E+00	1,14E+01	2,24E+03	6,21E+00	4,87E-01	MND	MND	MND	MND	MND	1,23E+03	MND	9,67E-02	2,63E-01	2,45E+01	5,49E+00	-4,81E+02
Human toxicity, cancer	CTUh	3,76E-08	1,84E-10	1,67E-01	1,67E-01	1,76E-10	2,70E-11	MND	MND	MND	MND	MND	4,13E-08	MND	3,70E-12	6,72E-12	7,37E-10	1,02E-09	3,36E-08
Human tox. non-cancer	CTUh	1,28E-06	5,81E-09	4,39E-01	4,39E-01	5,63E-09	8,32E-10	MND	MND	MND	MND	MND	1,01E-06	MND	6,99E-11	2,54E-10	5,13E-08	6,61E-08	-8,48E-08
SQP[7)]	-	1,28E+02	6,34E+00	1,53E+01	1,49E+02	4,74E+00	2,77E-01	MND	MND	MND	MND	MND	5,98E+02	MND	2,09E-02	3,20E-01	1,70E+00	3,05E-01	-2,10E+01

6) EN 15804+A2 disclaimer for Ionizing radiation, human health. 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 nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator; 7) SQP = Land use related impacts/soil quality.

USE OF NATURAL RESOURCES

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Renew. PER as energy[8)]	MJ	3,60E+01	8,03E-02	4,15E+01	7,76E+01	8,05E-02	1,27E-02	MND	MND	MND	MND	MND	1,09E+03	MND	9,19E-04	3,55E-03	1,82E-01	1,78E-03	-5,16E+00
Renew. PER as material	MJ	9,60E-04	0,00E+00	1,12E+01	1,13E+01	0,00E+00	-1,12E+01	MND	MND	MND	MND	MND	0,00E+00	MND	0,00E+00	0,00E+00	-7,01E-04	-2,59E-04	0,00E+00
Total use of renew. PER	MJ	3,60E+01	8,03E-02	5,28E+01	8,88E+01	8,05E-02	-1,12E+01	MND	MND	MND	MND	MND	1,09E+03	MND	9,19E-04	3,55E-03	1,81E-01	1,52E-03	-5,16E+00
Non-re. PER as energy	MJ	3,83E+02	7,19E+00	5,68E+00	3,96E+02	6,79E+00	2,28E-01	MND	MND	MND	MND	MND	1,90E+03	MND	1,61E-01	2,99E-01	2,98E+00	1,27E-01	-5,47E+01
Non-re. PER as material	MJ	3,58E+00	0,00E+00	1,50E+00	5,08E+00	0,00E+00	-1,50E+00	MND	MND	MND	MND	MND	0,00E+00	MND	0,00E+00	0,00E+00	-2,63E+00	-9,45E-01	0,00E+00
Total use of non-re. PER	MJ	3,87E+02	7,19E+00	7,19E+00	4,01E+02	6,79E+00	-1,28E+00	MND	MND	MND	MND	MND	1,90E+03	MND	1,61E-01	2,99E-01	3,49E-01	-8,18E-01	-5,47E+01
Secondary materials	kg	2,03E-01	2,27E-03	1,75E-01	3,80E-01	2,27E-03	2,41E-04	MND	MND	MND	MND	MND	2,23E-01	MND	6,29E-05	8,64E-05	4,22E-02	3,24E-05	2,49E+00
Renew. secondary fuels	MJ	1,18E-02	2,37E-05	1,35E-02	2,53E-02	2,93E-05	1,95E-06	MND	MND	MND	MND	MND	1,03E-03	MND	2,06E-07	8,89E-07	5,14E-05	1,12E-06	-1,20E-03
Non-ren. secondary fuels	MJ	0,00E+00	0,00E+00	7,12E-04	7,12E-04	0,00E+00	0,00E+00	MND	MND	MND	MND	MND	0,00E+00	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Use of net fresh water	m^3	3,00E-01	8,60E-04	5,68E-03	3,07E-01	8,07E-04	1,02E-04	MND	MND	MND	MND	MND	4,25E+00	MND	9,76E-06	3,85E-05	4,15E-03	1,38E-04	-1,71E-02

8) PER = Primary energy resources.

END OF LIFE – WASTE

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Hazardous waste	kg	2,27E+00	9,86E-03	1,96E-02	2,30E+00	9,82E-03	1,25E-03	MND	MND	MND	MND	MND	2,97E+00	MND	2,15E-04	3,84E-04	2,60E-02	6,30E-02	-1,58E+00
Non-hazardous waste	kg	5,10E+01	1,53E-01	5,37E-01	5,17E+01	1,56E-01	4,94E-01	MND	MND	MND	MND	MND	8,31E+01	MND	1,51E-03	6,39E-03	1,14E+00	6,28E-01	-1,02E+01
Radioactive waste	kg	8,11E-04	4,84E-05	4,04E-05	9,00E-04	4,51E-05	8,28E-07	MND	MND	MND	MND	MND	2,62E-02	MND	1,13E-06	2,02E-06	1,63E-05	0,00E+00	-4,33E-05

END OF LIFE – OUTPUT FLOWS

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Components for re-use	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	MND	MND	MND	MND	0,00E+00	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Materials for recycling	kg	0,00E+00	0,00E+00	4,54E+00	4,54E+00	0,00E+00	3,52E-01	MND	MND	MND	MND	MND	0,00E+00	MND	0,00E+00	0,00E+00	2,77E+00	0,00E+00	0,00E+00
Materials for energy rec	kg	0,00E+00	0,00E+00	2,66E-03	2,66E-03	0,00E+00	2,30E-01	MND	MND	MND	MND	MND	0,00E+00	MND	0,00E+00	0,00E+00	1,49E-01	0,00E+00	0,00E+00
Exported energy	MJ	0,00E+00	0,00E+00	3,42E-02	3,42E-02	0,00E+00	1,39E+00	MND	MND	MND	MND	MND	0,00E+00	MND	0,00E+00	0,00E+00	3,28E+00	0,00E+00	0,00E+00

ENVIRONMENTAL IMPACTS – EN 15804+A1, CML / ISO 21930

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Global Warming Pot.	kg CO_2e	3,09E+01	4,79E-01	3,94E-01	3,18E+01	4,64E-01	9,69E-02	MND	MND	MND	MND	MND	3,13E+01	MND	1,18E-02	1,91E-02	5,92E-01	1,51E-02	-5,58E+00
Ozone depletion Pot.	kg CFC_{-11}e	1,70E-06	8,56E-08	2,65E-08	1,81E-06	8,01E-08	1,87E-09	MND	MND	MND	MND	MND	1,28E-06	MND	2,02E-09	3,58E-09	2,91E-08	1,39E-09	-2,31E-07
Acidification	kg SO_2e	1,54E-01	2,33E-03	2,47E-03	1,59E-01	1,19E-03	8,20E-05	MND	MND	MND	MND	MND	1,33E-01	MND	8,85E-05	5,03E-05	4,01E-03	3,37E-05	-2,67E-02
Eutrophication	kg PO_4^3e	9,20E-02	3,79E-04	9,48E-04	9,33E-02	2,55E-04	9,62E-04	MND	MND	MND	MND	MND	7,53E-02	MND	2,05E-05	1,10E-05	9,29E-04	6,08E-04	-2,14E-02
POCP (“smog”)	kg C_2H_4e	1,15E-02	8,42E-05	1,78E-04	1,17E-02	5,74E-05	1,11E-05	MND	MND	MND	MND	MND	6,30E-03	MND	1,94E-06	2,34E-06	1,42E-04	3,28E-06	-2,89E-03
ADP-elements	kg Sbe	6,88E-03	1,32E-06	4,54E-05	6,93E-03	1,62E-06	9,46E-08	MND	MND	MND	MND	MND	1,20E-03	MND	5,96E-09	4,99E-08	7,44E-05	1,34E-08	-7,89E-05
ADP-fossil	MJ	3,86E+02	7,19E+00	6,59E+00	4,00E+02	6,79E+00	2,28E-01	MND	MND	MND	MND	MND	1,89E+03	MND	1,61E-01	2,99E-01	2,98E+00	1,27E-01	-5,70E+01

ENVIRONMENTAL IMPACTS – ISO 21930

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Radioactive waste, high	kg	1,62E-04	3,75E-07	1,66E-06	1,64E-04	3,54E-07	8,81E-08	MND	MND	MND	MND	MND	4,55E-03	MND	4,16E-09	1,78E-08	6,18E-07	8,01E-09	-7,63E-08
Radioactive waste, int/low	kg	6,45E-04	4,80E-05	1,12E-05	7,04E-04	4,48E-05	1,18E-06	MND	MND	MND	MND	MND	2,17E-02	MND	1,13E-06	2,00E-06	1,59E-05	7,96E-07	-4,32E-05

ENVIRONMENTAL IMPACTS – GWP-GHG - THE INTERNATIONAL EPD SYSTEM

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-GHG[9)]	kg CO_2e	3,18E+01	4,84E-01	3,99E-01	3,27E+01	4,68E-01	6,46E-02	MND	MND	MND	MND	MND	3,18E+01	MND	1,20E-02	1,93E-02	5,95E-01	1,78E-02	-5,84E+00

9) This indicator includes all greenhouse gases excluding biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product as defined by IPCC AR 5 (IPCC 2013). In addition, the characterisation factors for the flows - CH4 fossil, CH4 biogenic and Dinitrogen monoxide - were updated in line with the guidance of IES PCR 1.2.5 Annex 1. This indicator is identical to the GWP-total of EN 15804:2012+A2:2019 except that the characterization factor for biogenic CO2 is set to zero.

VERIFICATION STATEMENT

VERIFICATION PROCESS FOR THIS EPD

This EPD has been verified in accordance with ISO 14025 by an independent, third-party verifier by reviewing results, documents and compliancy with reference standard, ISO 14025 and ISO 14040/14044, following the process and checklists of the program operator for:

- This Environmental Product Declaration
- The Life-Cycle Assessment used in this EPD
- The digital background data for this EPD

Why does verification transparency matter? Read more online
This EPD has been generated by One Click LCA EPD generator, which has been verified and approved by the EPD Hub.

THIRD-PARTY VERIFICATION STATEMENT

I hereby confirm that, following detailed examination, I have not established any relevant deviations by the studied Environmental Product Declaration (EPD), its LCA and project report, in terms of the data collected and used in the LCA calculations, the way the LCA-based calculations have been carried out, the presentation of environmental data in the EPD, and other additional environmental information, as present with respect to the procedural and methodological requirements in ISO 14025:2010 and reference standard.

I confirm that the company-specific data has been examined as regards plausibility and consistency; the declaration owner is responsible for its factual integrity and legal compliance.

I confirm that I have sufficient knowledge and experience of construction products, this specific product category, the construction industry, relevant standards, and the geographical area of the EPD to carry out this verification.

I confirm my independence in my role as verifier; I have not been involved in the execution of the LCA or in the development of the declaration and have no conflicts of interest regarding this verification.

Imane Uald Lamkaddam as an authorized verifier for EPD Hub Limited
21.03.2025

ANNEX 1

This is an EPD of multiple REACT V products, based on the results of a representative product, with the REACT V GMB 250 being the declared unit.

The following table presents the calculated GWP-GHG results for the climate impact from modules A1-A3 (Cradle-to-gate) for all included sizes and variations.

The product with the lowest GWP-GHG impact differs by 37% from the representative product, while the product with the highest GWP-GHG impact differs by 153% from the representative product.

The scaling formula employed in this table is:

$$Scaling\ coefficent = \frac{GWP_{GHG}\ analyzed\ size}{GWP_{GHG}\ REACT\ V\ GMB\ 250}$$

Article number	GTIN	Product name	Total weight (kg)	GWP-GHG, A1-A3 (kg CO_2e/item)	A1-A3 Scaling coefficent
71201	7333395024751	REACT V BBAC 100	1,7	23,9	0,73
71202	7333395024768	REACT V BBAC 125	1,9	25,0	0,76
71203	7333395024775	REACT V BBAC 160	2,2	26,3	0,80
71204	7333395024782	REACT V BBAC 200	2,8	28,7	0,88
71205	7333395024799	REACT V BBAC 250	3,6	32,0	0,98
71206	7333395024805	REACT V BBAC 315	4,9	45,8	1,40
71207	7333395024812	REACT V BBAC 400	6,9	54,2	1,66
71208	7333395024829	REACT V BBAC 500	9,5	65,2	1,99
71209	7333395024836	REACT V BBAC 630	13,1	82,6	2,53
71001	7333395025284	REACT V BMB 100	1,7	23,9	0,73
71002	7333395025291	REACT V BMB 125	1,9	25,0	0,76
71003	7333395025307	REACT V BMB 160	2,2	26,3	0,80
71004	7333395025314	REACT V BMB 200	2,8	28,7	0,88
71005	7333395025321	REACT V BMB 250	3,6	32,0	0,98
71006	7333395025338	REACT V BMB 315	4,9	45,8	1,40
71007	7333395025345	REACT V BMB 400	6,9	54,2	1,66
71008	7333395025352	REACT V BMB 500	9,5	65,2	1,99
71009	7333395025369	REACT V BMB 630	13,1	82,6	2,53

Article number	GTIN	Product name	Total weight (kg)	GWP-GHG, A1-A3 (kg CO_2e/item)	A1-A3 Scaling coefficent
71101	7333395025819	REACT V BMP 100	1,6	20,6	0,63
71102	7333395025826	REACT V BMP 125	1,8	21,6	0,66
71103	7333395025833	REACT V BMP 160	2,1	22,9	0,70
71104	7333395025840	REACT V BMP 200	2,7	25,4	0,78
71105	7333395025857	REACT V BMP 250	3,5	28,6	0,87
71106	7333395025864	REACT V BMP 315	4,8	44,1	1,35
71107	7333395025871	REACT V BMP 400	6,8	52,5	1,61
71108	7333395025888	REACT V BMP 500	9,5	63,5	1,94
71109	7333395025895	REACT V BMP 630	13,1	82,6	2,53
70201	7333395026878	REACT V GMB 100	1,7	24,6	0,75
70202	7333395026885	REACT V GMB 125	2,0	25,7	0,79
70203	7333395026892	REACT V GMB 160	2,3	27,0	0,83
70204	7333395026908	REACT V GMB 200	2,8	29,4	0,90
70205	7333395026915	REACT V GMB 250	3,6	32,7	1,00
70206	7333395026922	REACT V GMB 315	4,7	39,3	1,20
70207	7333395026939	REACT V GMB 400	6,7	47,8	1,46
70208	7333395026946	REACT V GMB 500	9,3	58,8	1,80
70209	7333395026953	REACT V GMB 630	12,9	73,5	2,25

Article number	GTIN	Product name	Total weight (kg)	GWP-GHG, A1-A3 (kg CO_2e/item)	A1-A3 Scaling coefficient
70601	7333395026342	REACT V SKNX 100	1,7	25,3	0,77
70602	7333395026359	REACT V SKNX 125	2,0	26,4	0,81
70603	7333395026366	REACT V SKNX 160	2,3	27,7	0,85
70604	7333395026373	REACT V SKNX 200	2,9	30,1	0,92
70605	7333395026380	REACT V SKNX 250	3,6	33,4	1,02
70606	7333395026397	REACT V SKNX 315	4,6	37,7	1,15
70607	7333395026403	REACT V SKNX 400	6,7	46,2	1,41
70608	7333395026410	REACT V SKNX 500	9,3	57,1	1,75