

# Environmental Product Declaration

In accordance with ISO 14025 and EN 15804:2012+A2:2019 for:



## Altech brass deaerators

from

***Saint-Gobain Building Distribution (SGDS)***



**SGDS GRUPPEN**

DAHL// OPTIMERA/

Program:

Program operator:

EPD registration  
number:

Publication date:

Valid until:

The International EPD<sup>®</sup> System, [www.environdec.com](http://www.environdec.com)

EPD International AB

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*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](http://www.environdec.com)*



## General information

### Programme information

<b>Programme:</b>	The International EPD® System
<b>Address:</b>	EPD International AB Box 210 60 SE-100 31 Stockholm Sweden
<b>Website:</b>	<a href="http://www.environdec.com">www.environdec.com</a>
<b>E-mail:</b>	<a href="mailto:info@environdec.com">info@environdec.com</a>

<b>Accountabilities for PCR, LCA and independent, third-party verification</b>
<b>Product Category Rules (PCR):</b> Construction Products PCR 2019:14 version 1.2.5
CEN standard EN 15804 serves as the Core Product Category Rules (PCR)
PCR review was conducted by: The Technical Committee of the International EPD System.
<b>Life Cycle Assessment (LCA)</b>
LCA accountability: Fanni Végvári, CarbonZero AB
<b>Third-party verification</b>
Independent third-party verification of the declaration and data, according to ISO 14025:2006, via:  <input checked="" type="checkbox"/> EPD verification by the individual verifier  Third-party verifier: Vladimír Kočí, LCA Studio s.r.o, Czech Republic  Approved by: The International EPD® System  Procedure for follow-up of data during EPD validity involves third party verifier:  <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

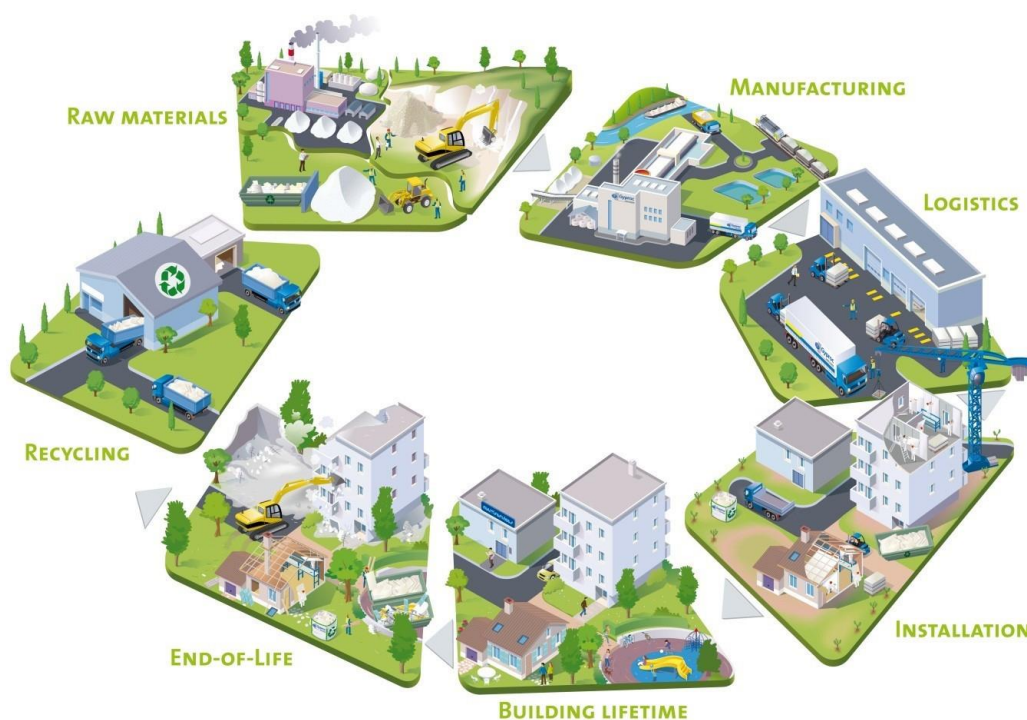


The EPD owner has the sole ownership, liability, and responsibility for the EPD.

EPDs within the same product category but from different programmes may not be comparable. EPDs of construction products may not be comparable if they do not comply with EN 15804. For further information about comparability, see EN 15804 and ISO 14025.

## Company information

<b>Owner of the EPD</b>	Saint-Gobain Distribution Sweden
<b>Contact</b>	SGDS - Beriar Maroof ( <a href="mailto:beriar.maroof@sgdsgruppen.se">beriar.maroof@sgdsgruppen.se</a> )
<b>Description of the organisation</b>	<p>SGDS Gruppen - specialists in collaboration for more efficient business in construction and installation. SGDS Gruppen AB is the head company of some of Sweden's leading trading companies in construction, sheet metal, tiles and installation. All the companies have long and solid industry experience and provide most of Sweden's craftsmen with materials for various projects. Customers in different companies can also buy support items from the sister companies in the group, and in selected cases, we take joint projects to facilitate the logistics of the supply of goods, which is then often critical for a smooth construction project.</p> <ul style="list-style-type: none"> <li>• Optimera - construction trade for professional carpenters</li> <li>• Dahl – heat, plumbing and sanitary specialist</li> <li>• Bevego - building sheet metal, ventilation and technical insulation</li> <li>• Kakelspecialisten and Konradsson's Tiles - tiles, tiling and bathroom fittings</li> </ul> <p>The company's focus is on sales and services with direct contact to about 150,000 customers regularly.</p> <p>Saint-Gobain Distribution Sweden group (SGDS) is owned by Saint-Gobain with a presence in 64 countries and over 190 000 employees worldwide.</p>
<b>Name and location of production site</b>	Gnosjö, Sweden

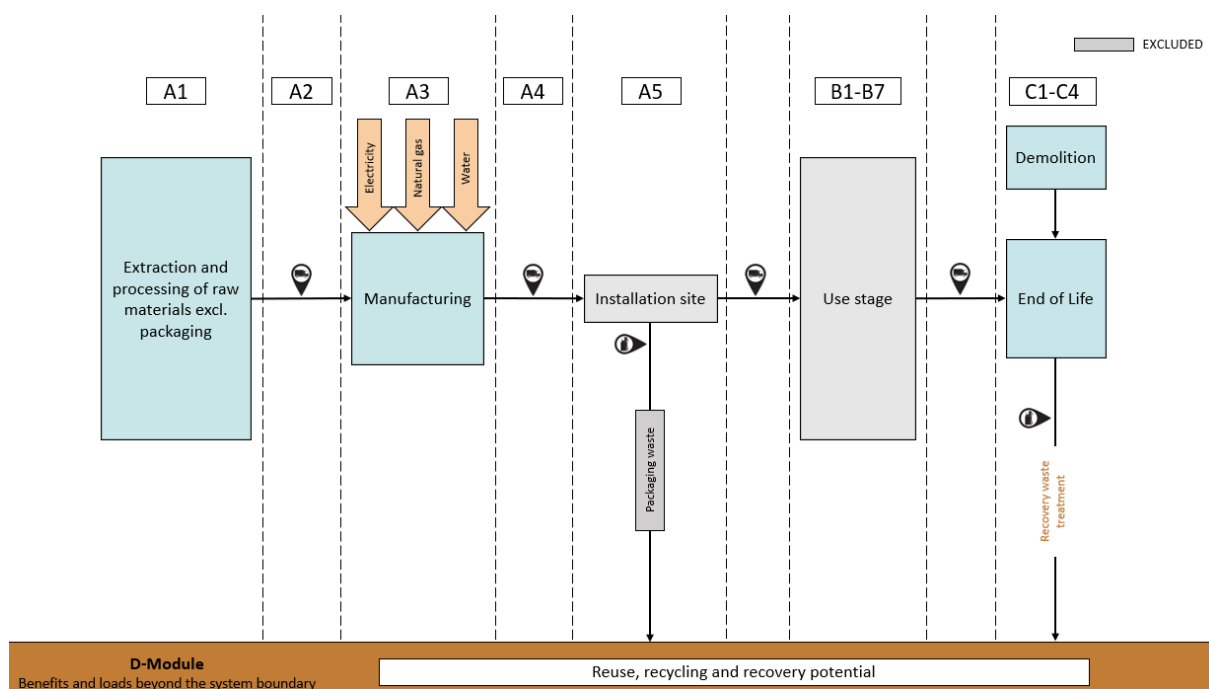


## Product information

<b>Product name</b>	Altech brass deaerators
<b>Product identification</b>	Deaerator
<b>Product description</b>	This product is made of brass and EPDM and is intended to use as a deaerator for heating- and cooling systems.
<b>Use</b>	Altech brass deaerators are installed on the highest points of the pipelines to prevent air bubbles to form in the water of the heating- and cooling system.

## LCA information

<b>Functional unit / declared unit</b>	1 kg of Altech brass deaerator
<b>Reference service life</b>	Not applicable
<b>Database(s) and LCA software used</b>	Calculation completed in LCA for Experts v10.7 with an integrated Ecoinvent database 3.8
<b>System boundaries</b>	Cradle to grave, with options. (A1-A3, A4, C1-C4, D)



### **More information**

The EPD covers the following range of products from Dahl:

- Altech brass deaerators

Article number	Specification/dimensions (mm)
4841235	R6
4841236	R8
4841237	R10
4841238	12 mm
4841239	15 mm
4841241	22 mm
4841242	28 mm

All products are produced in the same factory and have the same material composition with a slight difference in ratios. The worst-case product is represented in this EPD.

#### ***A1, Raw material supply***

This module considers the extraction and processing of all raw materials, energy, and transportation which occur upstream of the studied manufacturing process.

#### ***A2, transport to the manufacturer***

This module includes the transportation of raw materials to the manufacturing site.

#### ***A3, manufacturing***

This module includes all resources used during the production of Alterna towel dryer and waste produced. This also includes additives and packaging material.

#### ***A4, Transport***

Transportation from the manufacturing site in Sweden to SGDS Gruppen's distribution centre and then from the distribution centre to the building site is included.

#### ***A5, Construction installation***

This stage is partially included to balance the biogenic content in packaging.

#### ***B1-B7 Use stage***

This stage is not declared.

#### ***C1 Deconstruction/Demolition***

This module includes the de-construction and/or demolition of the building. This is not relevant as the product included in this study is not used in the construction process.

#### ***C2 Transport***

This module represents the transport distance to the waste processing facility.

#### ***C3 Waste processing***

This module includes any waste treatment needed.

#### ***C4 Final disposal***

This module includes any material that is landfilled.

#### ***D Benefits and loads beyond the system boundary***

This module includes emission credits obtained from energy recovery and/or recycling materials.

#### ***Cut-off criteria:***

All input and output flows in a unit process were considered i.e., taking into account the value of all flows in the unit process and the corresponding LCI where data was available. Data gaps were filled by conservative assumptions with average or generic data. Any assumptions in such case were documented. The use of cut-off criterion on mass inputs and primary energy at the unit process level (1%) and at the information module level (5%).

#### **Content declaration**

##### ***Content***

<b>Content declaration*</b>	<b>Amount (kg)</b>
Brass	0,9913
EPDM	0,0087
<b><i>Total</i></b>	<b><i>1</i></b>

\*Content declaration for Altech brass deaerators – representing the “Worst case” scenario.

<b>Packaging materials</b>	<b>Weight, kg</b>	<b>Weight-% (versus the product)</b>
Polyethylene film	0,0087	0,087%
Cardboard box	0,157	15,7%
<b><i>Total</i></b>	<b><i>0,1657</i></b>	<b><i>16,57%</i></b>

<b>Dangerous substances from the candidate list of SVHC for Authorisation</b>	<b>EC No.</b>	<b>CAS No.</b>	<b>Weight-% per functional or declared unit</b>
Lead	231-100-4	7439-92-1	3,0

### Modules declared and geographical scope

	Product stage			Assembly stage		Use stage							End of life stage				Benefits & loads beyond system boundary
	Raw materials	Transport	Manufacturing	Transport	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Reuse-Recovery-Recycling-potential
Modules	A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Modules declared	X	X	X	X	ND	ND	ND	ND	ND	ND	ND	ND	X	X	X	X	X
Geography	EU	EU	SE	SE	-	-	-	-	-	-	-	-	SE	SE	SE	SE	SE
Specific data used	Specific data used in module A3				-	-	-	-	-	-	-	-	-	-	-	-	-
Variation products	0%				-	-	-	-	-	-	-	-	-	-	-	-	-
Variation sites	0%				-	-	-	-	-	-	-	-	-	-	-	-	-

## Environmental Information

### Potential environmental impact – indicators according to EN 15804+A2

Indicator	Unit	Results per functional or declared unit: 1 kg						
		A1-A3	A4	A5	C2	C3	C4	D
GWP-total	kg CO <sub>2</sub> eq	1,01E+00	5,06E-02	4,01E-02*	1,06E-04	0,00E+00	2,85E-03	-4,98E-01
GWP-fossil	kg CO <sub>2</sub> eq	1,26E+00	5,08E-02	0,00E+00	1,07E-04	0,00E+00	2,45E-03	-4,97E-01
GWP-biogenic	kg CO <sub>2</sub> eq	-2,46E-01	-7,08E-04	4,01E-02*	-1,02E-06	0,00E+00	3,97E-04	8,21E-05
GWP-luluc	kg CO <sub>2</sub> eq	1,71E-03	4,64E-04	0,00E+00	6,97E-07	0,00E+00	2,38E-06	-8,34E-04
ODP	kg CFC-11 eq	2,73E-12	4,41E-15	0,00E+00	3,03E-17	0,00E+00	3,86E-15	-2,34E-12
AP	mole H <sup>+</sup> eq	9,10E-03	9,48E-05	0,00E+00	1,19E-06	0,00E+00	7,55E-06	-6,25E-03
EP-freshwater	kg P eq	4,14E-06	1,83E-07	0,00E+00	3,06E-10	0,00E+00	1,12E-08	-1,08E-06
EP-marine	kg N eq	9,62E-04	3,92E-05	0,00E+00	3,13E-07	0,00E+00	1,97E-06	-4,35E-04
EP-terrestrial	mole N eq	1,01E-02	4,47E-04	0,00E+00	3,46E-06	0,00E+00	2,09E-05	-4,72E-03
POCP	kg NMVOC eq	2,94E-03	8,44E-05	0,00E+00	8,53E-07	0,00E+00	6,09E-06	-1,48E-03
ADP-minerals & metals	kg Sb eq	3,42E-04	3,23E-09	0,00E+00	5,79E-12	0,00E+00	6,40E-11	-3,29E-04
ADP-fossil	MJ	5,38E+01	6,82E-01	0,00E+00	1,50E-03	0,00E+00	3,50E-02	-6,94E+00
WDP	m <sup>3</sup>	3,23E-01	5,79E-04	0,00E+00	1,90E-06	0,00E+00	-2,99E-05	-2,12E-01
Acronyms	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, Accumulated Exceedance; EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption							

\*NOTE: The biogenic content in packaging contributing to the GWP-biogenic is balanced out in A5 as positive as the packaging leaves the system boundary.

**Results per functional or declared unit: 1 kg**[illegible]

## Additional voluntary indicators

		Results per functional or declared unit: 1 kg						
Indicator	Unit	A1-A3	A4	A5	C2	C3	C4	D
GWP-GHG <sup>2</sup>	kg CO2 eq	9,90E-01	4,92E-02	4,01E-02	1,04E-04	0,00E+00	2,59E-03	-4,88E-01
Acronyms	GWP-GHG global warming potential - greenhouse gases							

## Waste and output flows

### Waste

		Results per functional or declared unit: 1 kg						
Indicator	Unit	A1-A3	A4	A5	C2	C3	C4	D
HWD	kg	3,53E-08	2,50E-12	0,00E+00	-1,92E-14	0,00E+00	2,89E-12	-4,96E-11
NHWD	kg	1,52E-01	9,86E-05	0,00E+00	3,28E-07	0,00E+00	5,00E-02	-1,03E-01
RWD	kg	1,42E-02	9,27E-07	0,00E+00	4,49E-08	0,00E+00	4,07E-07	-2,88E-04
Acronyms	HW Hazardous waste disposed; NHW Non-hazardous waste disposed; RW Radioactive waste disposed							

<sup>2</sup> The indicator includes all greenhouse gases included in GWP-total but excludes biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product. This indicator is thus almost equal to the GWP indicator originally defined in EN 15804:2012+A1:2013.

### Output flows

		Results per functional or declared unit: 1 kg						
Indicator	Unit	A1-A3	A4	A5	C2	C3	C4	D
CRU	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
MFR	kg	8,23E-01	0,00E+00	0,00E+00	0,00E+00	9,50E-01	0,00E+00	0,00E+00
MER	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
EEE	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
EET	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Acronyms	CRU Components for reuse; MFR Materials for recycling; MER Materials for energy recovery; EEE Exported electric energy; ETE Exported thermal energy							

### Information on biogenic carbon content

Biogenic carbon content	Unit per DU	Amount
Biogenic carbon content in product	kg C	0
Biogenic carbon content in packaging	kg C	6,52E-02

1 kg biogenic carbon is equivalent to 44/12 kg CO<sub>2</sub>.

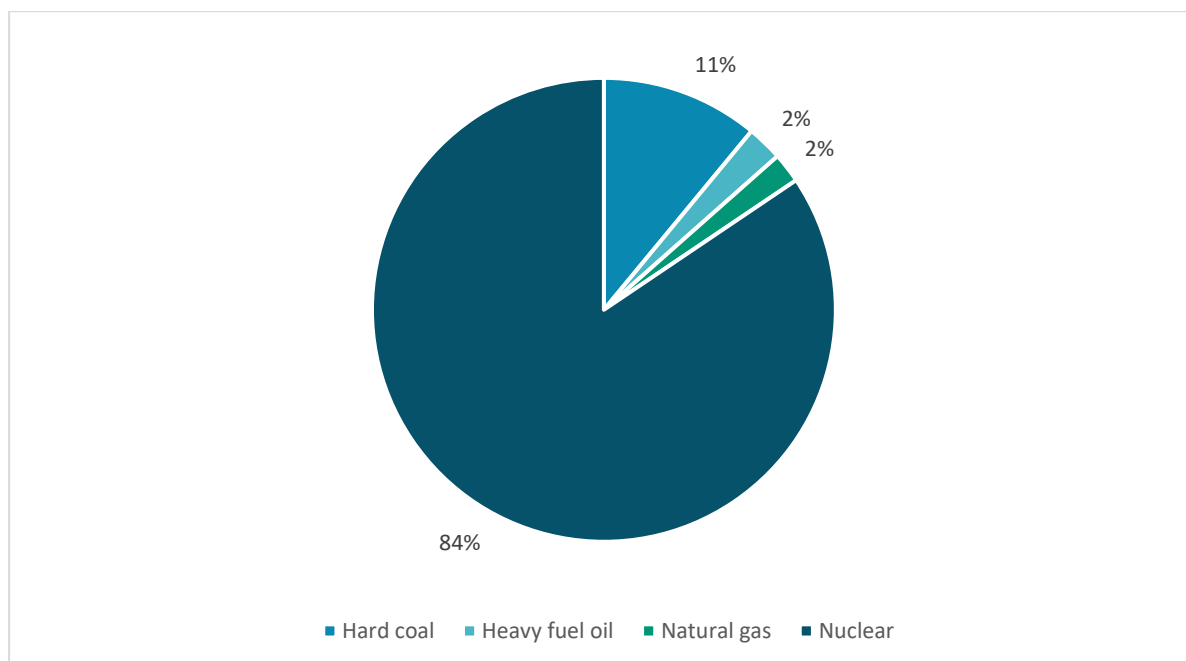
## Disclaimers

ILCD classification	Indicator	Disclaimer
ILCD Type 1	Global warming potential (GWP)	None
	Depletion potential of the stratospheric ozone layer (ODP)	None
	Potential incidence of disease due to PM emissions (PM)	None
ILCD Type 2	Acidification potential, Accumulated Exceedance (AP)	None
	Eutrophication potential, Fraction of nutrients reaching freshwater end compartment (EP-freshwater)	None
	Eutrophication potential, Fraction of nutrients reaching marine end compartment (EP-marine)	None
	Eutrophication potential, Accumulated Exceedance (EP-terrestrial)	None
	Formation potential of tropospheric ozone (POCP)	None
	Potential Human exposure efficiency relative to U235 (IRP)	1
	Abiotic depletion potential for non-fossil resources (ADP-minerals&metals)	2
	Abiotic depletion potential for fossil resources (ADP-fossil)	2
ILCD Type 3	Water (user) deprivation potential, deprivation-weighted water consumption (WDP)	2
	Potential Comparative Toxic Unit for ecosystems (ETP-fw)	2
	Potential Comparative Toxic Unit for humans (HTP-c)	2
	Potential Comparative Toxic Unit for humans (HTP-nc)	2
	Potential Soil quality index (SQP)	2
	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 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.	
	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 experience with the indicator.	

## Additional information

Greenhouse gas emission from the use of electricity in the manufacturing phase.

Residual mix	Unit	Value
<b>Location</b>		Sweden
<b>Electricity mix</b>		Nuclear: 84% Hard coal: 11% Heavy fuel oil: 2% Natural gas: 2%
<b>Reference year</b>		2021
<b>Source</b>		European Residual Mixes 2021 - Association of Issuing Bodies
<b>GWP excl. Biogenic</b>	kg CO <sub>2</sub> -eq. /kWh	0,037



## References

Association of Issuing Bodies	AIB (2023) European Residual Mixes 2022. Ver. 1.0.
Construction Products PCR 2019:14 version 1.2.5	EPD International (2021) PCR 2019:14 Construction products and construction services, version 1.2.5
EN 15804:2012+A2:2019	Sustainability of construction works - Environmental product declaration - Core rules for the product category of construction products
GPI	General Programme Instructions of the International EPD® System. Version 4.
ISO 14020:2000	Environmental labels and declarations — General principles
ISO 14025:2010	Environmental labels and declarations - Type III environmental declarations - Principles and procedures
ISO 14044:2006	Environmental management - Life cycle assessment - Requirements and guidelines
SCB – Swedish Statistics	(2020) Treated waste by treatment category and waste category. Every second year 2010 - 2020 <a href="https://www.statistikdatabasen.scb.se/pxweb/en/ssd/START_MI_MI0305/MI0305T003/">https://www.statistikdatabasen.scb.se/pxweb/en/ssd/START_MI_MI0305/MI0305T003/</a> Assessed 2023-06-19.