Environmental Product Declaration

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

Lindab panel

from

Lindab Profil AB

Programme:	The International EPD® System, www.environdec.com
Programme operator:	EPD International AB
Declaration owner	Lindab Profil AB, Svartöns Industriområde, 971 88 Luleå, Sweden
EPD registration number:	S-P-03682
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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

General information

Programme information

Programme:	The International EPD® System
Address:	EPD International AB Box 210 60 SE-100 31 Stockholm Sweden
Website:	www.environdec.com
E-mail:	info@environdec.com

CEN standard EN 15804 serves as the Core Product Category Rules (PCR)
Product category rules (PCR): *Product Category Rules (PCR) for construction products, PCR 2019:14, version 1.11*
PCR review was conducted by: *The Technical Committee of the International EPD® System. Chair: Claudia A. Peña Contact via info@environdec.com*
Independent third-party verification of the declaration and data, according to ISO 14025:2006: ☐ EPD process certification ☒ EPD verification
Third party verifier: *Martyna Mikusinska, Sweco Sverige AB* *In case of recognised individual verifiers:* Approved by: The International EPD® System
Procedure for follow-up of data during EPD validity involves third party verifier: ☐ Yes ☒ No

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

Owner of the EPD: Lindab Profil AB

Contact: Jan-Christer Mäki

Description of the organisation: Lindab Profil AB is an international Group that develops, manufactures, markets and distributes products and system solutions for simplified construction and improved indoor climate.

The products are characterised by their high quality, ease of assembly, energy efficiency, consideration towards the environment, and are delivered with high levels of service.

Lindab sandwich panels is produced in Luleå and are distributed to markets in Sweden, Norway and Denmark.

Product-related or management system-related certifications: Lindab Profil AB is ISO 9001 and 14001 certified.

Name and location of production site(s): Lindab Profil AB, Svartöns Industriområde, 971 88 Luleå, Sweden

Product information

Product name: Lindab panel

The EPD is a specific EPD for the Lindab panel. The Lindab panel is manufactured in 5 variations, where the difference lies in the rock wool cores of the sandwich panel. The Lindab panel 100mm BASE is declared in the main EPD document and the remaining 4 variations are included in Annex 1-4 (Lindab panel 200mm LIGHT, Lindab panel 200mm BASE, Lindab panel 200mm PLUS and Lindab panel 300mm BASE).

Product description: The Lindab panel is a sandwich panel with a thin steel plate surface and a core of rock wool. The product is used as facades, internal walls and ceilings in buildings such as commercial buildings, sports arenas, logistic centers and industrial buildings.

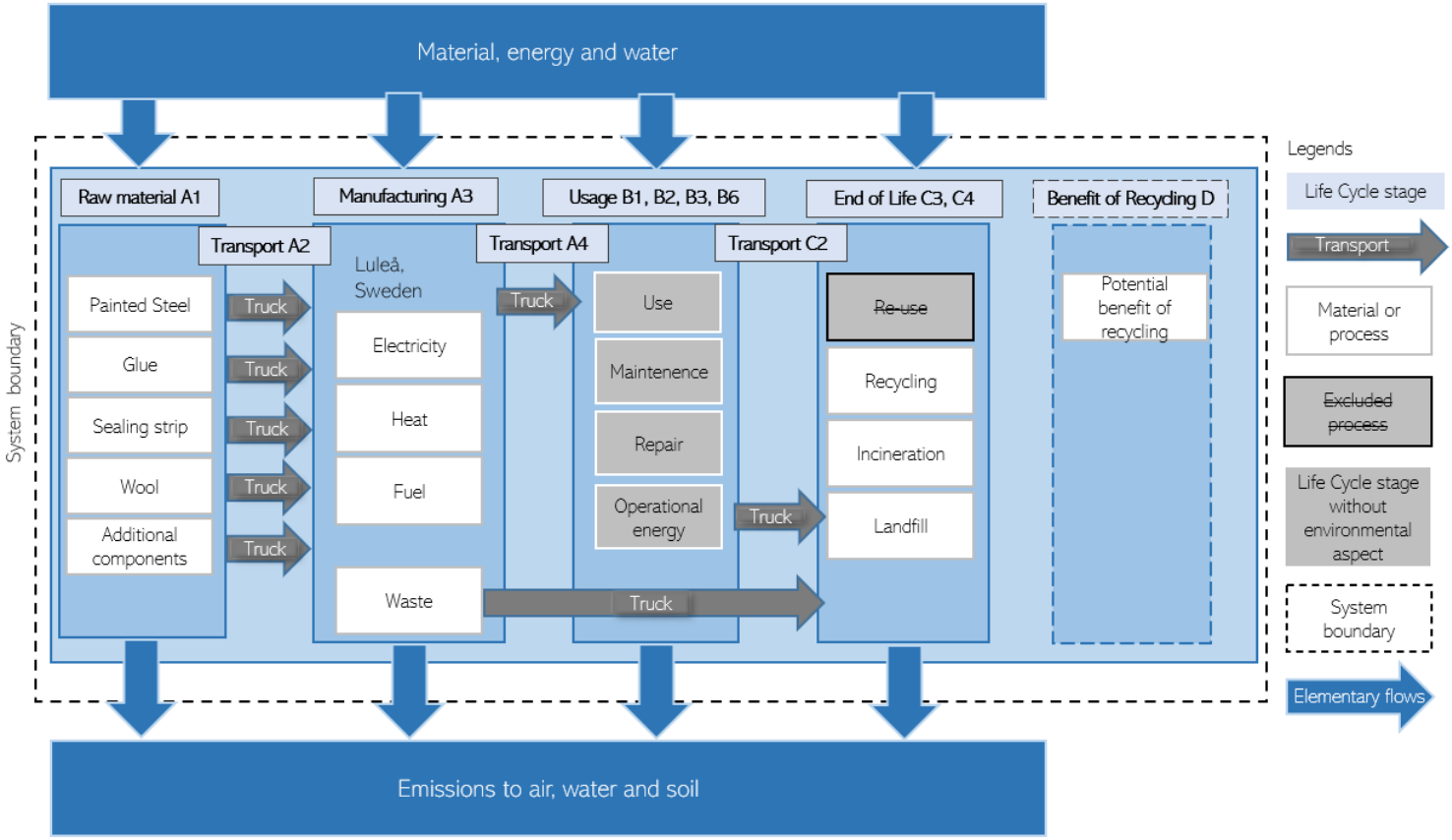
UN CPC code: 421 - Structural metal products and parts thereof

LCA information

Functional Unit	The functional unit is 1 m2 of Lindab panel. (1m2 Lindab panel 100mm BASE weighs 17,2kg)
Reference Service Life	The reference service life is set to 50 years.
Goal and Scope	The result will be used to understand where the environmental burden for the products occurs during the life cycle. The result will be communicated by the International EPD system. The audience is resellers and end-clients.
Manufacturing Site	Lindab Profil AB, Svartöns Industriområde, 971 88 Luleå, Sweden
Geographical Area	Sweden
Compliant with	This EPD follow the “Book-keeping“ LCA approach which is defined as attributional LCA in the ISO 14040 standard. In accordance with ISO 14025, ISO 14040 – ISO 140 44. This EPD follow the Product Category Rules Construction Products PCR 2019:14 version 1.11 valid until: 2024-12-20
Cut-Off Rules	The following procedure is followed for the exclusion of inputs and output: - In the case of insufficient input data or data gaps for a unit process, the cut-off criterion is 1 % of renewable and non-renewable primary energy usage and 1 % of the total mass input to that unit process. - The maximum neglected input flows per declared module (A1- A3) is 5 % of energy usage and mass. No cut-offs have been made concerning specific data in this study.
Background Data	The data quality is considered good. All site-specific data for raw materials, auxiliary materials as well as energy and emissions in the manufacturing process is from 2019 and have been represented with ecoinvent datasets. All other relevant environmental aspects have been represented by generic ecoinvent data. ecoinvent is the world’s biggest LCI (Life cycle inventory) data library and the latest and most updates version was used. ecoinvent contain data for the specific geographical regions relevant for this study. The background data is from ecoinvent 3.6.
Electricity data	The electricity consumption in the A3 module comes from the Swedish national grid.
Allocations	Polluter Pays / Allocation by Classification Two allocation rules are applied: 1) the raw material necessary for the manufacture is allocated by mass of the declared unit 2) the energy necessary for the manufacture is allocated in MJ by production of the declared unit
Impact Assessment methods	Potential environmental impacts are calculated with the Environmental Footprint 3.0 method and the IPCC 2013 GWP 100a method as implemented in SimaPro 9.1. Resource use values are calculated with the method Cumulative Energy Demand v1.11.
Based on LCA Report	Miljögiraff LCA Report 753 Life cycle assessment of Lindab panel.
LCA Practitioner	Annie Johansson, Miljögiraff AB
Software	SimaPro 9.1

Description of system boundaries: The system boundary used in the EPD is cradle-to-grave and module D (A + B + C + D).

System diagram: A system diagram is presented in the figure below.



Assumptions in modules after A3:

A4 - The distribution to clients is represented by an estimated average sized truck (16–32 ton payload) and an estimated average distance to client of 1126 km.

A5 - The sandwich panel is assumed to be installed in Sweden. To install the sandwich panel electrical cranes are used with the assumed installation time 5 seconds/kg panel for the scissor lift and 5 seconds/kg panel for the crane. The packaging material is estimated to be transported 80 km to a waste management facility where it is sorted and recycled or incinerated.

C1 – It is assumed that the same need for scissor lifts and cranes as for the installation can be applied to the deconstruction of the Lindab panel.

C2 - The distance to the sites for waste disposal and processing is estimated to 80 km.

C3 - The waste processing of steel is assumed to have a loss of 3%.

C4 – The materials final disposal are different waste treatment to material recycling.

Modules declared, geographical scope, share of specific data (in GWP-GHG indicator) and data variation:

	Product stage		Construction process stage			Use stage							End of life stage				Resource recovery stage
	Raw material supply	Transport	Manufacturing	Transport	Construction installation	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Reuse-Recovery-Recycling-potential
Module	**A1**	**A2**	**A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
Modules declared	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Geography	GLO	Euro	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE
Specific data used	>90%					-	-	-	-	-	-	-	-	-	-	-	-

The B-module is included, but there are no environmental impacts associated with this life cycle phase.

Description of manufacturing process:
The manufacturing process includes attaching the rock wool to the steel panel and cutting it to specific dimensions. The raw materials are received and loaded on to the production lines. Then the materials go through separation, sawing and the rock wool goes through a milling process. The corners of the steel are shaped. Glue is added to the steel and wool and the two components are assembled. The assembled steel and wool go through a pressing process where pressure and heat are added. Then sealing tapes are added and the panels are cut to the specified lengths. After that they go through stapling and packaging processes.

Presentation of RSL:
The expected aesthetic lifetime of the product is over 30 years and Lindab Profil AB guarantees an aesthetic lifetime of 20 years (Mäki, 2020). In the business a technical lifetime of 50 years is used since:

- There are many traditional steel panels used for facades as reference.
- Sandwich panels do not have any sensitive, exposed edges that regular steel panel facades have.
- The colour systems used today are better than previous systems.
- If there is a need the panels are repainted rather than replaced.

The reference service life is therefore set to 50 years.

Content information

Product components	Weight, kg per m2 panel	Post-consumer material, weight-%	Renewable material, weight-%
Painted steel	8,04	18,3	0
Glue	0,522	0	0
Sealing strip	0,0133	0	0
Rock wool (100mmBASE)	8,64	17,5%	0
TOTAL	17,2	17%	0
Packaging materials	**Weight, kg / kg panel**	**Weight-% (versus the product)**	
OSB	0,057	5,7%	
Polyethylene and polystyrene	0,0109	1,1%	
Corrugated cardboard	0,0033	0,3%	
Steel (secondary steel)	0,062	6,2%	
TOTAL	0,133	13,3%	
Additional components	**Weight, kg / kg panel**	**Weight-% (versus the product)**	
PVC	0,0006	0,1%	
EPDM	0,0011	0,1%	
Steel	0,0537	5,4%	
Rock wool caulk	0,0028	0,3%	
PMMA	0,0003	0%	
TOTAL	0,0585	5,9%	

Dangerous substances from the candidate list of SVHC for Authorisation	EC No.	CAS No.	Weight-% per functional or declared unit
N/A			

Annex 1 to 4 contains the results for the products Lindab panel 200mm BASE, Lindab panel 200mm LIGHT, Lindab panel 200mm PLUS and Lindab panel 300mm BASE. It is the component rock wool that differs from the components presented for Lindab panel 100mm BASE. The weight of the rock wool component for the 4 additional panels are presented below.

Rock wool core	Weight, kg per m2 panel	Post-consumer material, weight-%	Renewable material, weight-%
Rock wool (200mmBASE)	14,70	17,5%	0
Rock wool (200mm LIGHT)	17,64	17,5%	0
Rock wool (200mmPLUS)	24,50	17,5%	0
Rock wool (300mmBASE)	26,64	17,5%	0

Environmental Information – Lindab 100mmBASE

Potential environmental impact – mandatory indicators according to EN 15804

Results per functional or declared unit												
Indicator	**Unit**	**A1**	**A2**	**A3**	**Tot.A1 -A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-fossil	kg CO_2 eq.	3,12E+01	2,79E+00	3,89E+00	3,79E+01	3,79E+00	1,34E-01	1,34E-01	2,74E-01	8,08E-01	2,99E-01	-1,07E+01
GWP-biogenic	kg CO_2 eq.	-4,17E-02	1,46E-03	-1,78E+00	-1,82E+00	1,52E-03	3,30E-03	3,30E-03	1,46E-04	-1,92E-02	1,44E+00	1,22E-02
GWP-luluc	kg CO_2 eq.	3,33E-02	9,77E-04	3,24E-02	6,67E-02	1,36E-03	5,52E-03	5,52E-03	9,56E-05	4,75E-03	1,07E-05	-1,51E-02
GWP-total	kg CO_2 eq.	3,12E+01	2,79E+00	2,15E+00	3,61E+01	3,80E+00	1,43E-01	1,43E-01	2,74E-01	7,94E-01	1,74E+00	-1,07E+01
ODP	kg CFC 11 eq.	1,91E-06	6,31E-07	4,64E-07	3,01E-06	8,28E-07	4,73E-08	4,73E-08	6,21E-08	1,00E-07	2,08E-08	-5,89E-07
AP	mol H^+ eq.	2,07E-01	1,15E-02	4,46E-02	2,63E-01	1,57E-02	6,09E-04	6,09E-04	1,12E-03	9,30E-03	5,96E-04	-5,47E-02
EP-freshwater	kg PO_4^{3-} eq.	4,72E-02	6,24E-04	1,37E-02	6,16E-02	9,52E-04	1,89E-04	1,89E-04	6,07E-05	2,08E-03	2,51E-05	-2,24E-02
EP-freshwater	kg P eq	1,56E-02	2,06E-04	4,54E-03	2,03E-02	3,14E-04	6,23E-05	6,23E-05	2,00E-05	6,88E-04	8,28E-06	-7,39E-03
EP-marine	kg N eq.	3,35E-02	3,43E-03	5,97E-03	4,29E-02	4,64E-03	1,59E-04	1,59E-04	3,35E-04	1,23E-03	2,59E-04	-1,20E-02
EP-terrestrial	mol N eq.	4,04E-01	3,75E-02	6,43E-02	5,06E-01	5,07E-02	1,57E-03	1,57E-03	3,67E-03	1,58E-02	2,65E-03	-1,20E-01
POCP	kg NMVOC eq.	1,56E-01	1,15E-02	1,95E-02	1,87E-01	1,55E-02	5,33E-04	5,33E-04	1,12E-03	4,07E-03	7,14E-04	-5,00E-02
ADP-minerals&metals*	kg Sb eq.	4,65E-02	7,53E-05	3,22E-04	4,69E-02	1,00E-04	2,06E-06	2,06E-06	7,40E-06	4,61E-05	4,29E-07	-1,68E-04
ADP-fossil*	MJ	3,51E+02	4,20E+01	9,75E+01	4,90E+02	5,61E+01	1,07E+01	1,07E+01	4,13E+00	1,42E+01	1,41E+00	-1,35E+02
WDP	m^3	8,88E+00	1,18E-01	2,24E+00	1,12E+01	1,78E-01	1,34E-01	1,34E-01	1,15E-02	2,23E-01	7,92E-03	-2,26E+00
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											

** Disclaimer: The results of this environmental impact indicator shall be used with care as the uncertainties of these results are high or as there is limited experience with the indicator.*

Potential environmental impact – additional mandatory and voluntary indicators

Results per functional or declared unit												
Indicator	**Unit**	**A1**	**A2**	**A3**	**Tot.A1 -A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-GHG[1]	kg CO_2 eq.	3,00E+01	2,76E+00	3,83E+00	3,66E+01	3,76E+00	1,37E-01	1,37E-01	2,71E-01	8,05E-01	2,97E-01	-1,03E+01
Additional voluntary indicators e.g. the voluntary indicators from EN 15804 or the global indicators according to ISO 21930:2017												

Use of resources

Results per functional or declared unit												
Indicator	**Unit**	**A1**	**A2**	**A3**	**Tot.A1 -A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
PERE	MJ	2,99E+01	5,85E-01	3,82E+01	6,87E+01	6,45E-01	4,78E+00	4,78E+00	5,82E-02	1,32E+01	2,51E-02	-2,46E+01
PERM	MJ	0,00E+00	0,00E+00	1,86E+01	1,86E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PERT	MJ	2,99E+01	5,85E-01	5,68E+01	8,73E+01	6,45E-01	4,78E+00	4,78E+00	5,82E-02	1,32E+01	2,51E-02	-2,46E+01
PENRE	MJ	3,43E+02	4,46E+01	9,18E+01	4,80E+02	5,95E+01	1,08E+01	1,08E+01	4,38E+00	1,47E+01	1,50E+00	-1,42E+02
PENRM	MJ.	2,97E+01	0,00E+00	9,77E+00	3,94E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PENRT	MJ	3,73E+02	4,46E+01	1,02E+02	5,19E+02	5,95E+01	1,08E+01	1,08E+01	4,38E+00	1,47E+01	1,50E+00	-1,42E+02
SM	kg	3,30E+00	0,00E+00	1,07E+00	4,37E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
RSF	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	0,00E+00	0,00E+00	0,00E+00
NRSF	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	0,00E+00	0,00E+00	0,00E+00
FW	m^3	1,55E-01	2,20E-03	4,73E-02	2,05E-01	3,10E-03	2,58E-03	2,58E-03	2,15E-04	4,95E-03	6,44E-04	-3,42E-02
Acronyms	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; 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 re-sources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water											

[1] 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 equal to the GWP indicator originally defined in EN 15804:2012+A1:2013.

Waste production and output flows

Waste production

Results per functional or declared unit												
Indicator	**Unit**	**A1**	**A2**	**A3**	**Tot.A1 -A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
Hazardous waste disposed	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	0,00E+00	0,00E+00	0,00E+00
Non-hazardous waste disposed	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	0,00E+00	0,00E+00	0,00E+00
Radioactive waste disposed	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	0,00E+00	0,00E+00	0,00E+00

Output flows

Results per functional or declared unit												
Indicator	**Unit**	**A1**	**A2**	**A3**	**Tot.A1 -A3**	**A4**	**A5**	**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	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Material for recycling	kg	0,00E+00	0,00E+00	6,86E-01	6,86E-01	0,00E+00	1,17E+00	0,00E+00	0,00E+00	0,00E+00	8,63E+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	0,00E+00	0,00E+00	0,00E+00
Exported energy, electricity	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	0,00E+00	0,00E+00	0,00E+00
Exported energy, thermal	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	0,00E+00	0,00E+00	0,00E+00

Information on biogenic carbon content

Results per functional or declared unit		
BIOGENIC CARBON CONTENT	**Unit**	**QUANTITY**
Biogenic carbon content in product	kg C	0,00E+00
Biogenic carbon content in packaging	kg C	4,16E-01

Note: 1 kg biogenic carbon is equivalent to 44/12 kg CO_2.

Annex 1 – Lindab 200mmLIGHT

Environmental Information – Lindab 200mmLIGHT

Potential environmental impact – mandatory indicators according to EN 15804

Results per functional or declared unit

Indicator	Unit	A1	A2	A3	Tot.A1-A3	A4	A5	C1	C2	C3	C4	D
GWP-fossil	kg CO_2 eq.	3,85E+01	3,71E+00	5,27E+00	4,75E+01	5,13E+00	1,81E-01	1,81E-01	3,70E-01	1,09E+00	4,05E-01	-1,13E+01
GWP-biogenic	kg CO_2 eq.	-8,59E-02	1,94E-03	-2,41E+00	-2,49E+00	2,06E-03	4,46E-03	4,46E-03	1,97E-04	-2,60E-02	1,95E+00	2,18E-02
GWP-luluc	kg CO_2 eq.	3,57E-02	1,30E-03	4,38E-02	8,08E-02	1,84E-03	7,47E-03	7,47E-03	1,29E-04	6,42E-03	1,68E-05	-1,83E-02
GWP-total	kg CO_2 eq.	3,85E+01	3,71E+00	2,90E+00	4,51E+01	5,13E+00	1,93E-01	1,93E-01	3,70E-01	1,07E+00	2,35E+00	-1,13E+01
ODP	kg CFC 11 eq.	2,39E-06	8,40E-07	6,28E-07	3,86E-06	1,12E-06	6,40E-08	6,40E-08	8,40E-08	1,36E-07	3,41E-08	-6,31E-07
AP	mol H^+ eq.	2,78E-01	1,53E-02	6,04E-02	3,53E-01	2,13E-02	8,23E-04	8,23E-04	1,51E-03	1,26E-02	9,22E-04	-5,77E-02
EP-freshwater	kg PO_4^{3-} eq.	5,47E-02	8,30E-04	1,86E-02	7,42E-02	1,29E-03	2,55E-04	2,55E-04	8,21E-05	2,82E-03	3,64E-05	-2,33E-02
EP-freshwater	kg P eq	1,81E-02	2,74E-04	6,13E-03	2,45E-02	4,25E-04	8,42E-05	8,42E-05	2,71E-05	9,30E-04	1,20E-05	-7,69E-03
EP-marine	kg N eq.	4,04E-02	4,56E-03	8,08E-03	5,30E-02	6,27E-03	2,15E-04	2,15E-04	4,53E-04	1,66E-03	3,94E-04	-1,27E-02
EP-terrestrial	mol N eq.	5,24E-01	4,99E-02	8,70E-02	6,61E-01	6,85E-02	2,12E-03	2,12E-03	4,96E-03	2,13E-02	4,06E-03	-1,28E-01
POCP	kg NMVOC eq.	1,93E-01	1,53E-02	2,64E-02	2,35E-01	2,09E-02	7,20E-04	7,20E-04	1,52E-03	5,51E-03	1,10E-03	-5,27E-02
ADP-minerals&metals*	kg Sb eq.	4,71E-02	1,00E-04	4,35E-04	4,76E-02	1,35E-04	2,79E-06	2,79E-06	1,00E-05	6,24E-05	6,87E-07	-1,74E-04
ADP-fossil*	MJ	4,34E+02	5,58E+01	1,32E+02	6,22E+02	7,58E+01	1,44E+01	1,44E+01	5,58E+00	1,92E+01	2,30E+00	-1,48E+02
WDP	m^3	1,05E+01	1,57E-01	3,02E+00	1,36E+01	2,41E-01	1,82E-01	1,82E-01	1,55E-02	3,01E-01	1,18E-02	-2,50E+00
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											

** Disclaimer: The results of this environmental impact indicator shall be used with care as the uncertainties of these results are high or as there is limited experience with the indicator.*

Potential environmental impact – additional mandatory and voluntary indicators

Results per functional or declared unit												
Indicator	**Unit**	**A1**	**A2**	**A3**	**Tot.A1 -A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-GHG[2]	kg CO_2 eq.	3,72E+01	3,68E+00	5,18E+00	4,60E+01	5,09E+00	1,85E-01	1,85E-01	3,67E-01	1,09E+00	4,03E-01	-1,09E+01
Additional voluntary indicators e.g. the voluntary indicators from EN 15804 or the global indicators according to ISO 21930:2017												

Use of resources

Results per functional or declared unit												
Indicator	**Unit**	**A1**	**A2**	**A3**	**Tot.A1 -A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
PERE	MJ	4,06E+01	7,77E-01	5,16E+01	9,30E+01	8,72E-01	6,46E+00	6,46E+00	7,87E-02	1,78E+01	3,99E-02	-3,00E+01
PERM	MJ	0,00E+00	0,00E+00	2,52E+01	2,52E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PERT	MJ	4,06E+01	7,77E-01	7,68E+01	1,18E+02	8,72E-01	6,46E+00	6,46E+00	7,87E-02	1,78E+01	3,99E-02	-3,00E+01
PENRE	MJ	4,31E+02	5,93E+01	1,24E+02	6,15E+02	8,05E+01	1,46E+01	1,46E+01	5,92E+00	1,99E+01	2,44E+00	-1,56E+02
PENRM	MJ.	3,02E+01	0,00E+00	1,32E+01	4,34E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PENRT	MJ	4,62E+02	5,93E+01	1,37E+02	6,58E+02	8,05E+01	1,46E+01	1,46E+01	5,92E+00	1,99E+01	2,44E+00	-1,56E+02
SM	kg	4,48E+00	0,00E+00	1,44E+00	5,92E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
RSF	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	0,00E+00	0,00E+00	0,00E+00
NRSF	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	0,00E+00	0,00E+00	0,00E+00
FW	m^3	2,04E-01	2,92E-03	6,39E-02	2,70E-01	4,20E-03	3,49E-03	3,49E-03	2,91E-04	6,69E-03	8,67E-04	-3,69E-02
Acronyms	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; 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 re-sources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water											

[2] 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 equal to the GWP indicator originally defined in EN 15804:2012+A1:2013.

Waste production and output flows

Waste production

Results per functional or declared unit												
Indicator	**Unit**	**A1**	**A2**	**A3**	**Tot.A1 -A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
Hazardous waste disposed	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	0,00E+00	0,00E+00	0,00E+00
Non-hazardous waste disposed	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	0,00E+00	0,00E+00	0,00E+00
Radioactive waste disposed	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	0,00E+00	0,00E+00	0,00E+00

Output flows

Results per functional or declared unit												
Indicator	**Unit**	**A1**	**A2**	**A3**	**Tot.A1 -A3**	**A4**	**A5**	**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	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Material for recycling	kg	0,00E+00	0,00E+00	8,22E-01	8,22E-01	0,00E+00	1,58E+00	0,00E+00	0,00E+00	0,00E+00	8,94E+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	0,00E+00	0,00E+00	0,00E+00
Exported energy, electricity	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	0,00E+00	0,00E+00	0,00E+00
Exported energy, thermal	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	0,00E+00	0,00E+00	0,00E+00

Information on biogenic carbon content

Results per functional or declared unit		
BIOGENIC CARBON CONTENT	**Unit**	**QUANTITY**
Biogenic carbon content in product	kg C	0,00E+00
Biogenic carbon content in packaging	kg C	5,63E-01

Note: 1 kg biogenic carbon is equivalent to 44/12 kg CO_2.

Annex 2 – Lindab 200mmBASE

Environmental Information – Lindab 200mmBASE

Potential environmental impact – mandatory indicators according to EN 15804

Results per functional or declared unit												
Indicator	**Unit**	**A1**	**A2**	**A3**	**Tot.A1 -A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-fossil	kg CO_2 eq.	4,21E+01	4,15E+00	5,93E+00	5,22E+01	5,78E+00	2,04E-01	2,04E-01	4,17E-01	1,23E+00	4,56E-01	-1,16E+01
GWP-biogenic	kg CO_2 eq.	-1,07E-01	2,17E-03	-2,71E+00	-2,82E+00	2,32E-03	5,03E-03	5,03E-03	2,22E-04	-2,93E-02	2,19E+00	2,65E-02
GWP-luluc	kg CO_2 eq.	3,68E-02	1,46E-03	4,94E-02	8,76E-02	2,07E-03	8,41E-03	8,41E-03	1,46E-04	7,23E-03	1,98E-05	-1,98E-02
GWP-total	kg CO_2 eq.	4,20E+01	4,16E+00	3,27E+00	4,94E+01	5,78E+00	2,17E-01	2,17E-01	4,17E-01	1,21E+00	2,65E+00	-1,16E+01
ODP	kg CFC 11 eq.	2,62E-06	9,41E-07	7,07E-07	4,27E-06	1,26E-06	7,20E-08	7,20E-08	9,46E-08	1,53E-07	4,05E-08	-6,52E-07
AP	mol H^+ eq.	3,12E-01	1,71E-02	6,80E-02	3,97E-01	2,40E-02	9,27E-04	9,27E-04	1,70E-03	1,42E-02	1,08E-03	-5,91E-02
EP-freshwater	kg PO_4^{3-} eq.	5,84E-02	9,30E-04	2,09E-02	8,03E-02	1,45E-03	2,87E-04	2,87E-04	9,25E-05	3,17E-03	4,19E-05	-2,37E-02
EP-freshwater	kg P eq	1,93E-02	3,07E-04	6,91E-03	2,65E-02	4,78E-04	9,48E-05	9,48E-05	3,05E-05	1,05E-03	1,38E-05	-7,83E-03
EP-marine	kg N eq.	4,37E-02	5,11E-03	9,10E-03	5,79E-02	7,06E-03	2,42E-04	2,42E-04	5,11E-04	1,87E-03	4,59E-04	-1,30E-02
EP-terrestrial	mol N eq.	5,82E-01	5,59E-02	9,80E-02	7,36E-01	7,72E-02	2,39E-03	2,39E-03	5,59E-03	2,40E-02	4,75E-03	-1,31E-01
POCP	kg NMVOC eq.	2,11E-01	1,71E-02	2,97E-02	2,58E-01	2,35E-02	8,11E-04	8,11E-04	1,71E-03	6,20E-03	1,29E-03	-5,40E-02
ADP-minerals&metals*	kg Sb eq.	4,74E-02	1,12E-04	4,90E-04	4,80E-02	1,52E-04	3,14E-06	3,14E-06	1,13E-05	7,02E-05	8,12E-07	-1,78E-04
ADP-fossil*	MJ	4,74E+02	6,25E+01	1,48E+02	6,85E+02	8,54E+01	1,62E+01	1,62E+01	6,28E+00	2,16E+01	2,73E+00	-1,54E+02
WDP	m^3	1,12E+01	1,76E-01	3,41E+00	1,48E+01	2,72E-01	2,04E-01	2,04E-01	1,75E-02	3,39E-01	1,37E-02	-2,62E+00
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											

** Disclaimer: The results of this environmental impact indicator shall be used with care as the uncertainties of these results are high or as there is limited experience with the indicator.*

Potential environmental impact – additional mandatory and voluntary indicators

Results per functional or declared unit												
Indicator	**Unit**	**A1**	**A2**	**A3**	**Tot.A1 -A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-GHG[3]	kg CO_2 eq.	4,06E+01	4,12E+00	5,83E+00	5,06E+01	5,73E+00	2,09E-01	2,09E-01	4,13E-01	1,23E+00	4,54E-01	-1,11E+01
Additional voluntary indicators e.g. the voluntary indicators from EN 15804 or the global indicators according to ISO 21930:2017												

Use of resources

Results per functional or declared unit												
Indicator	**Unit**	**A1**	**A2**	**A3**	**Tot.A1 -A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
PERE	MJ	4,58E+01	8,71E-01	5,81E+01	1,05E+02	9,83E-01	7,28E+00	7,28E+00	8,86E-02	2,01E+01	4,70E-02	-3,27E+01
PERM	MJ	0,00E+00	0,00E+00	2,84E+01	2,84E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PERT	MJ	4,58E+01	8,71E-01	8,65E+01	1,33E+02	9,83E-01	7,28E+00	7,28E+00	8,86E-02	2,01E+01	4,70E-02	-3,27E+01
PENRE	MJ	4,74E+02	6,64E+01	1,40E+02	6,80E+02	9,07E+01	1,64E+01	1,64E+01	6,67E+00	2,25E+01	2,90E+00	-1,62E+02
PENRM	MJ.	3,04E+01	0,00E+00	1,49E+01	4,53E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PENRT	MJ	5,05E+02	6,64E+01	1,55E+02	7,26E+02	9,07E+01	1,64E+01	1,64E+01	6,67E+00	2,25E+01	2,90E+00	-1,62E+02
SM	kg	5,05E+00	0,00E+00	1,62E+00	6,67E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
RSF	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	0,00E+00	0,00E+00	0,00E+00
NRSF	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	0,00E+00	0,00E+00	0,00E+00
FW	m^3	2,27E-01	3,27E-03	7,20E-02	3,02E-01	4,73E-03	3,93E-03	3,93E-03	3,28E-04	7,54E-03	9,74E-04	-3,82E-02
Acronyms	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; 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 re-sources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water											

[3] 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 equal to the GWP indicator originally defined in EN 15804:2012+A1:2013.

Waste production and output flows

Waste production

Results per functional or declared unit												
Indicator	**Unit**	**A1**	**A2**	**A3**	**Tot.A1 -A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
Hazardous waste disposed	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	0,00E+00	0,00E+00	0,00E+00
Non-hazardous waste disposed	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	0,00E+00	0,00E+00	0,00E+00
Radioactive waste disposed	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	0,00E+00	0,00E+00	0,00E+00

Output flows

Results per functional or declared unit												
Indicator	**Unit**	**A1**	**A2**	**A3**	**Tot.A1 -A3**	**A4**	**A5**	**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	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Material for recycling	kg	0,00E+00	0,00E+00	8,87E-01	8,87E-01	0,00E+00	1,78E+00	0,00E+00	0,00E+00	0,00E+00	9,08E+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	0,00E+00	0,00E+00	0,00E+00
Exported energy, electricity	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	0,00E+00	0,00E+00	0,00E+00
Exported energy, thermal	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	0,00E+00	0,00E+00	0,00E+00

Information on biogenic carbon content

Results per functional or declared unit		
BIOGENIC CARBON CONTENT	**Unit**	**QUANTITY**
Biogenic carbon content in product	kg C	0,00E+00
Biogenic carbon content in packaging	kg C	6,34E-01

Note: 1 kg biogenic carbon is equivalent to 44/12 kg CO_2.

Annex 3 – Lindab 200mmPLUS

Environmental Information – Lindab 200mmPLUS

Potential environmental impact – mandatory indicators according to EN 15804

Results per functional or declared unit												
Indicator	**Unit**	**A1**	**A2**	**A3**	**Tot.A1-A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-fossil	kg CO_2 eq.	5,04E+01	5,20E+00	7,48E+00	6,31E+01	7,29E+00	2,57E-01	2,57E-01	5,26E-01	1,55E+00	5,77E-01	-1,23E+01
GWP-biogenic	kg CO_2 eq.	-1,57E-01	2,72E-03	-3,42E+00	-3,58E+00	2,93E-03	6,34E-03	6,34E-03	2,80E-04	-3,70E-02	2,77E+00	3,74E-02
GWP-luluc	kg CO_2 eq.	3,95E-02	1,82E-03	6,23E-02	1,04E-01	2,61E-03	1,06E-02	1,06E-02	1,84E-04	9,12E-03	2,67E-05	-2,34E-02
GWP-total	kg CO_2 eq.	5,03E+01	5,20E+00	4,12E+00	5,96E+01	7,30E+00	2,74E-01	2,74E-01	5,26E-01	1,52E+00	3,34E+00	-1,22E+01
ODP	kg CFC 11 eq.	3,16E-06	1,18E-06	8,92E-07	5,23E-06	1,59E-06	9,09E-08	9,09E-08	1,19E-07	1,93E-07	5,55E-08	-7,00E-07
AP	mol H^+ eq.	3,92E-01	2,14E-02	8,58E-02	4,99E-01	3,02E-02	1,17E-03	1,17E-03	2,15E-03	1,79E-02	1,45E-03	-6,25E-02
EP-freshwater	kg PO_4^{3-} eq.	6,69E-02	1,16E-03	2,64E-02	9,45E-02	1,83E-03	3,63E-04	3,63E-04	1,17E-04	4,00E-03	5,48E-05	-2,48E-02
EP-freshwater	kg P eq	2,21E-02	3,84E-04	8,72E-03	3,12E-02	6,03E-04	1,20E-04	1,20E-04	3,85E-05	1,32E-03	1,81E-05	-8,17E-03
EP-marine	kg N eq.	5,15E-02	6,40E-03	1,15E-02	6,94E-02	8,91E-03	3,06E-04	3,06E-04	6,44E-04	2,36E-03	6,12E-04	-1,37E-02
EP-terrestrial	mol N eq.	7,19E-01	7,00E-02	1,24E-01	9,12E-01	9,74E-02	3,01E-03	3,01E-03	7,05E-03	3,03E-02	6,35E-03	-1,39E-01
POCP	kg NMVOC eq.	2,53E-01	2,14E-02	3,75E-02	3,12E-01	2,97E-02	1,02E-03	1,02E-03	2,16E-03	7,83E-03	1,73E-03	-5,70E-02
ADP-minerals&metals*	kg Sb eq.	4,81E-02	1,40E-04	6,18E-04	4,89E-02	1,92E-04	3,97E-06	3,97E-06	1,42E-05	8,86E-05	1,10E-06	-1,86E-04
ADP-fossil*	MJ	5,68E+02	7,82E+01	1,87E+02	8,33E+02	1,08E+02	2,05E+01	2,05E+01	7,93E+00	2,73E+01	3,74E+00	-1,68E+02
WDP	m^3	1,30E+01	2,20E-01	4,30E+00	1,75E+01	3,43E-01	2,58E-01	2,58E-01	2,21E-02	4,28E-01	1,82E-02	-2,90E+00
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											

** Disclaimer: The results of this environmental impact indicator shall be used with care as the uncertainties of these results are high or as there is limited experience with the indicator.*

Potential environmental impact – additional mandatory and voluntary indicators

Results per functional or declared unit												
Indicator	**Unit**	**A1**	**A2**	**A3**	**Tot.A1 -A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-GHG[4]	kg CO_2 eq.	4,87E +01	5,15E +00	7,36E +00	6,13E +01	7,23E +00	2,63E -01	2,63E -01	5,21E -01	1,55E +00	5,73E -01	-1,18E +01
Additional voluntary indicators e.g. the voluntary indicators from EN 15804 or the global indicators according to ISO 21930:2017												

Use of resources

Results per functional or declared unit												
Indicator	**Unit**	**A1**	**A2**	**A3**	**Tot.A1 -A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
PERE	MJ	5,79E+01	1,09E+00	7,33E+01	1,32E+02	1,24E+00	9,18E+00	9,18E+00	1,12E-01	2,53E+01	6,38E-02	-3,88E+01
PERM	MJ	0,00E+00	0,00E+00	3,58E+01	3,58E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PERT	MJ	5,79E+01	1,09E+00	1,09E+02	1,68E+02	1,24E+00	9,18E+00	9,18E+00	1,12E-01	2,53E+01	6,38E-02	-3,88E+01
PENRE	MJ	5,74E+02	8,30E+01	1,76E+02	8,33E+02	1,14E+02	2,07E+01	2,07E+01	8,41E+00	2,83E+01	3,97E+00	-1,77E+02
PENRM	MJ.	3,09E+01	0,00E+00	1,88E+01	4,97E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PENRT	MJ	6,05E+02	8,30E+01	1,95E+02	8,83E+02	1,14E+02	2,07E+01	2,07E+01	8,41E+00	2,83E+01	3,97E+00	-1,77E+02
SM	kg	6,38E+00	0,00E+00	2,05E+00	8,43E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
RSF	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	0,00E+00	0,00E+00	0,00E+00
NRSF	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	0,00E+00	0,00E+00	0,00E+00
FW	m^3	2,82E-01	4,09E-03	9,08E-02	3,77E-01	5,96E-03	4,96E-03	4,96E-03	4,13E-04	9,51E-03	1,23E-03	-4,13E-02
Acronyms	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; 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 re-sources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water											

[4] 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 equal to the GWP indicator originally defined in EN 15804:2012+A1:2013.

Waste production and output flows

Waste production

Results per functional or declared unit												
Indicator	**Unit**	**A1**	**A2**	**A3**	**Tot.A1 -A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
Hazardous waste disposed	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	0,00E+00	0,00E+00	0,00E+00
Non-hazardous waste disposed	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	0,00E+00	0,00E+00	0,00E+00
Radioactive waste disposed	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	0,00E+00	0,00E+00	0,00E+00

Output flows

Results per functional or declared unit												
Indicator	**Unit**	**A1**	**A2**	**A3**	**Tot.A1 -A3**	**A4**	**A5**	**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	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Material for recycling	kg	0,00E+00	0,00E+00	1,04E+00	1,04E+00	0,00E+00	2,24E+00	0,00E+00	0,00E+00	0,00E+00	9,43E+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	0,00E+00	0,00E+00	0,00E+00
Exported energy, electricity	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	0,00E+00	0,00E+00	0,00E+00
Exported energy, thermal	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	0,00E+00	0,00E+00	0,00E+00

Information on biogenic carbon content

Results per functional or declared unit		
BIOGENIC CARBON CONTENT	**Unit**	**QUANTITY**
Biogenic carbon content in product	kg C	0,00E+00
Biogenic carbon content in packaging	kg C	7,99E-01

Note: 1 kg biogenic carbon is equivalent to 44/12 kg CO_2.

Annex 4 – Lindab 300mmBASE

Environmental Information – Lindab 300mmBASE

Potential environmental impact – mandatory indicators according to EN 15804

Results per functional or declared unit												
Indicator	**Unit**	**A1**	**A2**	**A3**	**Tot.A1-A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-fossil	kg CO_2 eq.	5,30E+01	5,52E+00	7,97E+00	6,65E+01	7,76E+00	2,74E-01	2,74E-01	5,60E-01	1,65E+00	6,14E-01	-1,25E+01
GWP-biogenic	kg CO_2 eq.	-1,73E-01	2,89E-03	-3,64E+00	-3,81E+00	3,12E-03	6,75E-03	6,75E-03	2,99E-04	-3,93E-02	2,95E+00	4,08E-02
GWP-luluc	kg CO_2 eq.	4,04E-02	1,93E-03	6,63E-02	1,09E-01	2,78E-03	1,13E-02	1,13E-02	1,96E-04	9,71E-03	2,89E-05	-2,46E-02
GWP-total	kg CO_2 eq.	5,28E+01	5,53E+00	4,39E+00	6,28E+01	7,77E+00	2,92E-01	2,92E-01	5,60E-01	1,62E+00	3,56E+00	-1,24E+01
ODP	kg CFC 11 eq.	3,33E-06	1,25E-06	9,50E-07	5,53E-06	1,69E-06	9,68E-08	9,68E-08	1,27E-07	2,05E-07	6,02E-08	-7,15E-07
AP	mol H^+ eq.	4,17E-01	2,27E-02	9,13E-02	5,31E-01	3,22E-02	1,25E-03	1,25E-03	2,29E-03	1,90E-02	1,57E-03	-6,36E-02
EP-freshwater	kg PO_4^{3-} eq.	6,96E-02	1,24E-03	2,81E-02	9,89E-02	1,95E-03	3,86E-04	3,86E-04	1,24E-04	4,26E-03	5,88E-05	-2,51E-02
EP-freshwater	kg P eq	2,30E-02	4,08E-04	9,28E-03	3,27E-02	6,42E-04	1,27E-04	1,27E-04	4,10E-05	1,41E-03	1,94E-05	-8,28E-03
EP-marine	kg N eq.	5,40E-02	6,80E-03	1,22E-02	7,30E-02	9,49E-03	3,26E-04	3,26E-04	6,86E-04	2,51E-03	6,59E-04	-1,40E-02
EP-terrestrial	mol N eq.	7,61E-01	7,44E-02	1,32E-01	9,67E-01	1,04E-01	3,21E-03	3,21E-03	7,50E-03	3,23E-02	6,85E-03	-1,42E-01
POCP	kg NMVOC eq.	2,66E-01	2,27E-02	3,99E-02	3,29E-01	3,16E-02	1,09E-03	1,09E-03	2,30E-03	8,33E-03	1,87E-03	-5,79E-02
ADP-minerals&metals*	kg Sb eq.	4,84E-02	1,49E-04	6,58E-04	4,92E-02	2,05E-04	4,22E-06	4,22E-06	1,51E-05	9,44E-05	1,19E-06	-1,88E-04
ADP-fossil*	MJ	5,97E+02	8,31E+01	1,99E+02	8,80E+02	1,15E+02	2,18E+01	2,18E+01	8,44E+00	2,91E+01	4,05E+00	-1,73E+02
WDP	m^3	1,35E+01	2,34E-01	4,58E+00	1,84E+01	3,65E-01	2,75E-01	2,75E-01	2,35E-02	4,55E-01	1,95E-02	-2,99E+00
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											

** Disclaimer: The results of this environmental impact indicator shall be used with care as the uncertainties of these results are high or as there is limited experience with the indicator.*

Potential environmental impact – additional mandatory and voluntary indicators

Results per functional or declared unit												
Indicator	**Unit**	**A1**	**A2**	**A3**	**Tot.A1 -A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-GHG[5]	kg CO_2 eq.	5,13E+01	5,47E+00	7,84E+00	6,46E+01	7,69E+00	2,81E-01	2,81E-01	5,55E-01	1,65E+00	6,10E-01	-1,20E+01
Additional voluntary indicators e.g. the voluntary indicators from EN 15804 or the global indicators according to ISO 21930:2017												

Use of resources

Results per functional or declared unit												
Indicator	**Unit**	**A1**	**A2**	**A3**	**Tot.A1 -A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
PERE	MJ	6,17E+01	1,16E+00	7,81E+01	1,41E+02	1,32E+00	9,78E+00	9,78E+00	1,19E-01	2,69E+01	6,90E-02	-4,07E+01
PERM	MJ	0,00E+00	0,00E+00	3,81E+01	3,81E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PERT	MJ	6,17E+01	1,16E+00	1,16E+02	1,79E+02	1,32E+00	9,78E+00	9,78E+00	1,19E-01	2,69E+01	6,90E-02	-4,07E+01
PENRE	MJ	6,05E+02	8,82E+01	1,88E+02	8,81E+02	1,22E+02	2,20E+01	2,20E+01	8,96E+00	3,02E+01	4,31E+00	-1,82E+02
PENRM	MJ.	3,11E+01	0,00E+00	2,00E+01	5,11E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PENRT	MJ	6,36E+02	8,82E+01	2,08E+02	9,32E+02	1,22E+02	2,20E+01	2,20E+01	8,96E+00	3,02E+01	4,31E+00	-1,82E+02
SM	kg	6,79E+00	0,00E+00	2,18E+00	8,97E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
RSF	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	0,00E+00	0,00E+00	0,00E+00
NRSF	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	0,00E+00	0,00E+00	0,00E+00
FW	m^3	2,99E-01	4,35E-03	9,67E-02	4,00E-01	6,35E-03	5,28E-03	5,28E-03	4,40E-04	1,01E-02	1,30E-03	-4,23E-02
Acronyms	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; 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 re-sources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water											

[5] 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 equal to the GWP indicator originally defined in EN 15804:2012+A1:2013.

Waste production and output flows

Waste production

Results per functional or declared unit												
Indicator	**Unit**	**A1**	**A2**	**A3**	**Tot.A1 -A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
Hazardous waste disposed	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	0,00E+00	0,00E+00	0,00E+00
Non-hazardous waste disposed	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	0,00E+00	0,00E+00	0,00E+00
Radioactive waste disposed	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	0,00E+00	0,00E+00	0,00E+00

Output flows

Results per functional or declared unit												
Indicator	**Unit**	**A1**	**A2**	**A3**	**Tot.A1 -A3**	**A4**	**A5**	**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	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Material for recycling	kg	0,00E+00	0,00E+00	1,09E+00	1,09E+00	0,00E+00	2,39E+00	0,00E+00	0,00E+00	0,00E+00	9,53E+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	0,00E+00	0,00E+00	0,00E+00
Exported energy, electricity	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	0,00E+00	0,00E+00	0,00E+00
Exported energy, thermal	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	0,00E+00	0,00E+00	0,00E+00

Information on biogenic carbon content

Results per functional or declared unit		
BIOGENIC CARBON CONTENT	**Unit**	**QUANTITY**
Biogenic carbon content in product	kg C	0,00E+00
Biogenic carbon content in packaging	kg C	8,51E-01

Note: 1 kg biogenic carbon is equivalent to 44/12 kg CO_2.

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