

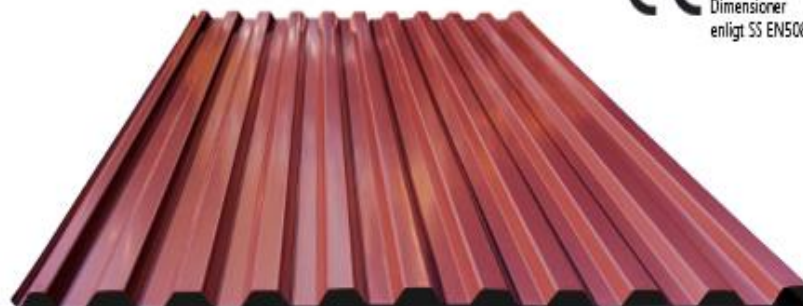
ENVIRONMENTAL PRODUCT DECLARATION

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

Areco Low Profile

Areco Profiles AB

CE SS EN 1090-1
SS EN 14782
Dimensioner
enligt SS EN508-1



EPD HUB, EPDHUB-0094

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Created with One Click LCA

GENERAL INFORMATION

MANUFACTURER

Manufacturer	Areco Profiles AB
Address	Vinkelgatan 13, SE 211 24 Malmö
Contact details	info@areco.se
Website	https://www.arecoprofiles.se/en/

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 1.0, 1 Feb 2022
Sector	Construction product
Category of EPD	Third party verified EPD
Scope of the EPD	Cradle to gate with options A4, A5 & modules C1-C4, D
EPD author	Eva Strandberg, Areco Profiles AB
EPD verification	Independent verification of this EPD and data, according to ISO 14025: <input type="checkbox"/> Internal certification <input checked="" type="checkbox"/> External verification
EPD verifier	H.U as an authorized verifier acting 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	Areco Low Profile
Additional labels	TP 18, TP 19, TP 20, TP 35, TP 45, Sinus 18, Sinus 45, Stratos, Cirrus, VP18, VP 19, VP 20, VP 35 and VP 45. TP 20/35, TP 20/65, VP 20/65, TP 20/100, VP 20/100, TP 20/220, VP 20/220, TP 35/115, VP 35/115, Sinus 18/76, Sinus 35/143, Sinus Variant, Sinus Variant 35/143, Prestige, Exclusive, Tagstensplade, Tagstensplade Unik 1070
Product reference	
Place of production	Malmö, Sweden Terndrup and Slagelse, Denmark
Period for data	Calendar year 2020
Averaging in EPD	Multiple products and multiple factories
Variation in GWP-fossil for A1-A3	Variability for materials: +14%, -19%. Variability for factories: +1,2%, -0,2%

ENVIRONMENTAL DATA SUMMARY

Declared unit	1 kg
Declared unit mass	1 kg
GWP-fossil, A1-A3 (kgCO _{2e})	3,35
GWP-total, A1-A3 (kgCO _{2e})	3,26
Secondary material, inputs (%)	3,98E ¹
Secondary material, outputs (%)	9,5E ¹
Total energy use, A1-A3 (kWh)	1,19E ¹
Total water use, A1-A3 (m ³ e)	5,05E ⁻²

PRODUCT AND MANUFACTURER

ABOUT THE MANUFACTURER

Areco Profiles is today one of the leading players in the sheet metal industry. Areco's business activities are mainly aimed at the construction industry with a comprehensive range of building components in sheet metal for residential and commercial properties.

PRODUCT DESCRIPTION

Areco Low Profiles is available in the classic low-profile as well as the trendy intermediate profiles that have a very good bearing capacity and an attractive design. The profiles are available in different sheet metal thicknesses, colors and coatings. The profiles can be produced in lengths up to 11.5 m.

Further information can be found at <https://www.arecoprofiles.se/en/>.

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass- %	Material origin
Metals	99-100	Global
Minerals	0	-
Fossil materials	0-1	Global
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	0.046

FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	kg
Mass per declared unit	1 kg
Reference service life	>50 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		
x	x	x	x	x	MND	MND	MND	MND	MND	MND	MND	x	x	x	x	x		
Raw materials	Transport	Manufacturing	Transport	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	Deconstr./demol.	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 products are cold formed at our production facilities in Malmö, Terndrup and Slagelse. The raw material is hot dip coated steel with or without an additional organic coating in various colours. Raw material is generally transported by ship and lorry. The Danish plants are heated with oil and natural gas while the Malmö facility is both powered and heated by electricity. Production generates no other emissions neither to air nor water.

The products are packaged either with wood bedding or on pallets, covered and wrapped in plastic.

TRANSPORT AND INSTALLATION (A4-A5)

Transportation impacts occurred from final products delivery to construction site (A4) cover fuel direct exhaust emissions, environmental impacts of fuel production, as well as related infrastructure emissions.

Transportation impacts occurred from final products delivery to construction site (A4) cover fuel direct exhaust emissions, environmental impacts of fuel production as well as related infrastructure emissions.

Average distance of transportation from production plant to building site is assumed as 600 km which is the distance from the Malmö production site to Stockholm, and the transportation method is assumed to be lorry. Vehicle capacity utilization volume factor is assumed to be 1 which means full load. In reality, it may vary but as role of transportation emissions in total results is small, the variety in load is assumed to be negligible. Empty returns are not taken into account as it is assumed that return trip is used by the transportation company to serve the needs of other clients. Transportation does not cause losses as product are packaged properly.

Density of the product is 7850 kg/m³, however bulk density varies depending on order size and thickness. Therefore, the average loss due to the nested products is assumed as 10%; accordingly, bulk density is calculated as an approximate 7000 kg/m³.

PRODUCT USE AND MAINTENANCE (B1-B7)

This EPD does not cover the use phase.

Air, soil, and water impacts during the use phase have not been studied.

PRODUCT END OF LIFE (C1-C4, D)

Demolition is assumed to consume 0,01 kWh/kg of product. The source of energy is diesel fuel used by construction machines (C1). It is assumed that 100% of the waste is collected and transported to the waste treatment centre. Transportation distance to treatment is assumed as 50 km and the transportation method is assumed to be lorry (C2). Approximately 95% of steel is assumed to be recycled based on World Steel Association, 2020 (C3). It is assumed that the remaining 5% of steel is taken to landfill for final disposal (C4). Due to the recycling process, the end-of-life product is converted into recycled steel, while the used packaging material goes to incineration (D)

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 materials	No allocation
Ancillary materials	Allocated by mass or volume
Manufacturing energy and waste	Allocated by mass or volume

AVERAGES AND VARIABILITY

Type of average	Multiple products and multiple factories
Averaging method	Averaged by shares of total mass
Variation in GWP-fossil for A1-A3	Variability for materials: +14%, -19%. Variability for factories: +1,2%, -0,2%

All averaging is calculated as weighted averages based on actual distribution between factories and materials in 2020.

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. Ecoinvent and One Click LCA databases were used 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 ₂ e	3,14E0	1,94E-1	-8,15E-2	3,26E0	1,01E-1	6,97E-2	MND	MND	MND	MND	MND	MND	MND	3,3E-3	8,17E-3	2,21E-2	2,64E-4	-1,08E0
GWP – fossil	kg CO ₂ e	3,13E0	1,94E-1	3,28E-2	3,35E0	1,02E-1	1,09E-2	MND	MND	MND	MND	MND	MND	MND	3,3E-3	8,17E-3	2,34E-2	2,63E-4	-1,09E0
GWP – biogenic	kg CO ₂ e	1,35E-2	-2,98E-5	-1,14E-1	-1,01E-1	5,5E-5	5,88E-2	MND	MND	MND	MND	MND	MND	MND	9,17E-7	4,39E-6	-1,34E-3	5,22E-7	8,04E-3
GWP – LULUC	kg CO ₂ e	3,94E-3	1,22E-4	9,17E-5	4,15E-3	3,69E-5	5,58E-7	MND	MND	MND	MND	MND	MND	MND	2,79E-7	2,95E-6	2,66E-5	7,82E-8	2,98E-5
Ozone depletion pot.	kg CFC ₁₁ e	2,12E-7	3,99E-8	4,26E-9	2,56E-7	2,33E-8	8,55E-10	MND	MND	MND	MND	MND	MND	MND	7,12E-10	1,86E-9	3,37E-9	1,08E-10	-2,95E-8
Acidification potential	mol H ⁺ e	7,12E-2	5,29E-3	1,67E-4	7,66E-2	2,94E-4	4,36E-5	MND	MND	MND	MND	MND	MND	MND	3,45E-5	2,34E-5	2,84E-4	2,5E-6	-4,2E-3
EP-freshwater ²⁾	kg Pe	1,85E-4	1,01E-6	1,27E-6	1,88E-4	8,7E-7	2,59E-8	MND	MND	MND	MND	MND	MND	MND	1,33E-8	6,95E-8	1,62E-6	3,18E-9	-4,35E-5
EP-marine	kg Ne	5,2E-3	1,3E-3	3,99E-5	6,53E-3	5,83E-5	1,93E-5	MND	MND	MND	MND	MND	MND	MND	1,52E-5	4,66E-6	6,27E-5	8,61E-7	-8,26E-4
EP-terrestrial	mol Ne	2,78E-1	1,44E-2	4,44E-4	2,93E-1	6,51E-4	2,1E-4	MND	MND	MND	MND	MND	MND	MND	1,67E-4	5,2E-5	7,28E-4	9,48E-6	-8,74E-3
POCP (“smog”) ³⁾	kg NMVOCe	1,43E-2	3,76E-3	1,44E-4	1,82E-2	2,49E-4	5,67E-5	MND	MND	MND	MND	MND	MND	MND	4,59E-5	1,99E-5	1,99E-4	2,75E-6	-5,69E-3
ADP-minerals & metals ⁴⁾	kg Sbe	6,62E-3	2,15E-6	2,84E-7	6,63E-3	2,82E-6	2,48E-8	MND	MND	MND	MND	MND	MND	MND	5,03E-9	2,25E-7	1,3E-6	2,41E-9	-1,08E-6
ADP-fossil resources	MJ	3,59E1	2,57E0	6,78E-1	3,91E1	1,55E0	5,7E-2	MND	MND	MND	MND	MND	MND	MND	4,54E-2	1,23E-1	3,25E-1	7,36E-3	-8,04E0
Water use ⁵⁾	m ³ e depr.	1,88E0	6,01E-3	1,06E-2	1,9E0	5,06E-3	-2,73E-5	MND	MND	MND	MND	MND	MND	MND	8,46E-5	4,04E-4	4,61E-3	3,4E-4	-1,55E-1

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	2,88E0	2,13E-2	4,35E-1	3,33E0	2,21E-2	4,85E-4	MND	MND	MND	MND	MND	MND	MND	2,45E-4	1,77E-3	5,1E-2	5,95E-5	1,06E-1
Renew. PER as material	MJ	5,02E-3	0E0	1,01E0	1,02E0	0E0	-4,88E-1	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	0E0	0E0	0E0
Total use of renew. PER	MJ	2,88E0	2,13E-2	1,45E0	4,35E0	2,21E-2	-4,87E-1	MND	MND	MND	MND	MND	MND	MND	2,45E-4	1,77E-3	5,1E-2	5,95E-5	1,06E-1
Non-re. PER as energy	MJ	3,66E1	2,57E0	5,17E-1	3,96E1	1,55E0	5,7E-2	MND	MND	MND	MND	MND	MND	MND	4,54E-2	1,23E-1	3,25E-1	7,36E-3	-8,04E0
Non-re. PER as material	MJ	4,55E-1	0E0	1,61E-1	6,16E-1	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	0E0	0E0	0E0
Total use of non-re. PER	MJ	3,7E1	2,57E0	6,78E-1	4,03E1	1,55E0	5,7E-2	MND	MND	MND	MND	MND	MND	MND	4,54E-2	1,23E-1	3,25E-1	7,36E-3	-8,04E0
Secondary materials	kg	3,98E-1	0E0	5,31E-5	3,98E-1	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	0E0	0E0	5,07E-1
Renew. secondary fuels	MJ	3,04E-6	0E0	0E0	3,04E-6	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	0E0	0E0	0E0
Non-ren. secondary fuels	MJ	-2,3E-3	0E0	0E0	-2,3E-3	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	0E0	0E0	0E0
Use of net fresh water	m ³	5,01E-2	2,84E-4	1,16E-4	5,05E-2	2,67E-4	2,63E-5	MND	MND	MND	MND	MND	MND	MND	4,01E-6	2,13E-5	1,33E-4	8,05E-6	-7,19E-3

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	5,64E-1	2,93E-3	1,41E-3	5,68E-1	1,59E-3	3,66E-4	MND	MND	MND	MND	MND	MND	MND	4,88E-5	1,27E-4	0E0	6,87E-6	-1,3E-1
Non-hazardous waste	kg	7,56E0	6,76E-2	4,15E-2	7,67E0	1,1E-1	4,36E-2	MND	MND	MND	MND	MND	MND	MND	5,22E-4	8,75E-3	0E0	5E-2	-1,47E0
Radioactive waste	kg	2,6E-4	1,8E-5	3,09E-6	2,81E-4	1,06E-5	3,68E-7	MND	MND	MND	MND	MND	MND	MND	3,18E-7	8,46E-7	0E0	4,87E-8	5,56E-6

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	0E0	0E0	0E0	0E0	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	0E0	0E0	0E0
Materials for recycling	kg	2,34E-3	0E0	1,24E-2	1,48E-2	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	9,5E-1	0E0	0E0
Materials for energy rec	kg	4,66E-4	0E0	0E0	4,66E-4	0E0	8,6E-2	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	0E0	0E0	0E0
Exported energy	MJ	0E0	0E0	0E0	0E0	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	0E0	0E0	0E0

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 ₂ e	3,03E0	1,94E-1	3,19E-2	3,25E0	1,01E-1	1,09E-2	MND	MND	MND	MND	MND	MND	MND	3,27E-3	8,1E-3	2,31E-2	2,58E-4	-1,03E0
Ozone depletion Pot.	kg CFC ₁₁ e	1,5E-7	3,18E-8	3,84E-9	1,86E-7	1,85E-8	6,84E-10	MND	MND	MND	MND	MND	MND	MND	5,63E-10	1,48E-9	2,86E-9	8,59E-11	-2,6E-8
Acidification	kg SO ₂ e	4,1E-2	4,24E-3	1,24E-4	4,54E-2	2,06E-4	1,13E-5	MND	MND	MND	MND	MND	MND	MND	4,87E-6	1,65E-5	1,77E-4	1,04E-6	-3,29E-3
Eutrophication	kg PO ₄ ³ e	1,05E-2	4,78E-4	3,97E-5	1,1E-2	4,27E-5	6,85E-6	MND	MND	MND	MND	MND	MND	MND	8,57E-7	3,41E-6	7,21E-5	2,02E-7	-1,82E-3
POCP ("smog")	kg C ₂ H ₄ e	1,19E-3	1,13E-4	9,59E-6	1,31E-3	1,23E-5	6,62E-7	MND	MND	MND	MND	MND	MND	MND	5,01E-7	9,86E-7	8,28E-6	7,64E-8	-8,49E-4
ADP-elements	kg Sbe	6,62E-3	2,15E-6	2,84E-7	6,63E-3	2,82E-6	2,48E-8	MND	MND	MND	MND	MND	MND	MND	5,03E-9	2,25E-7	1,3E-6	2,41E-9	-1,08E-6
ADP-fossil	MJ	3,59E1	2,57E0	6,78E-1	3,91E1	1,55E0	5,7E-2	MND	MND	MND	MND	MND	MND	MND	4,54E-2	1,23E-1	3,25E-1	7,36E-3	-8,04E0

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.

Hetal Parekh Udas as an authorized verifier acting for EPD Hub Limited
02.08.2022

