

Environmental Product Declaration



THE INTERNATIONAL EPD® SYSTEM



In accordance with ISO 14025:2006 and EN 15804:2012+A2:2019/AC:2021 for:

Extruded aluminium profiles (by 3000 ton press)

from

NEXT EXTRUSION SRL

next

nardò extrusion technology

Programme:	The International EPD® System, www.environdec.com
Programme operator:	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



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
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Accountabilities for PCR, LCA and independent, third-party verification

Product Category Rules (PCR)

CEN standard EN 15804 serves as the Core Product Category Rules (PCR)

Product Category Rules (PCR): *construction products, PCR 2019:14, VERSION 1.3.4*

PCR review was conducted by: Claudia A. Peña, University of Concepción, Chile. The review panel may be contacted via the Secretariat www.environdec.com/contact.

Life Cycle Assessment (LCA)

LCA accountability: *Forethinking Srl Società Benefit; info@forethinking.com; www.forethinking.com*



Third-party verification

Independent third-party verification of the declaration and data, according to ISO 14025:2006, via:

EPD verification by accredited certification body

Third-party verification: <DNV Business Assurance Italy S.r.l., Via Energy Park, 14, 20871 VEMERCATE MB, Italia> is an approved certification body accountable for the third-party verification

Accredited by: Accredia

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 registered in different EPD programmes, or not compliant with EN 15804, may not be comparable. For two EPDs to be comparable, they must be based on the same PCR (including the same version number) or be based on fully-aligned PCRs or versions of PCRs; cover products with identical functions, technical performances and use (e.g. identical declared/functional units); have equivalent system boundaries and descriptions of data; apply equivalent data quality requirements, methods of data collection, and allocation methods; apply identical cut-off rules and impact assessment methods (including the same version of characterisation factors); have equivalent content declarations; and be valid at the time of comparison. For further information about comparability, see EN 15804 and ISO 14025.

Company information

Owner of the EPD: Next Extrusion s.r.l.

Contact: Luciano Barbetta, lbarbetta@nextextrusion.it

Description of the organisation: Next Extrusion was born in 2017, from the idea of its founder Luciano Barbetta, who, with the support of a leading partner in the sector, created the fourth extrusion plant in Southern Italy.

Commercial division

The installation of a 3000-ton press enables the extrusion of aluminium profiles used in various market sectors: building and construction, as well as automotive and transportation, and general engineering.

Logistic division

Next Extrusion ensures quality, precision in the delivery of finished products based on fixed weekly dates, favouring a capillary and efficient distribution network.

Name and location of production site(s): The Next Extrusion production site under consideration is located in Puglia, at Via Paolo di Nella 3/7, in Nardò (Lecce, Italy).

Product-related or management system-related certifications: Next Extrusion pursues its high standard production internal goals for the testing, inspection, and certification of its own quality management system in compliance with UNI EN ISO 9001/UNI EN ISO 14001 and UNI EN 45001.

Product information

Product name: Extruded aluminium profiles, manufactured in Next plant located in 3/7 Paolo di Nella street, Nardò.

Product identification: The aluminium profiles produced by Next Extrusion are manufactured starting from billets of aluminium (externally purchased). The production phase includes the extrusion of the profiles by presses (3000 ton). Extruded profiles undergo a manufacturing process, cutting and assembly processes. The extrusion process to produce aluminium profiles takes place at the production site of Next Extrusion. The production processes include the phase of preheating matrices, washing matrices and packaging.

Product description: The profiles manufactured by Next Extrusion are used in different market sectors: building and construction, but also automotive and transport, general engineering.

UN CPC code: The reference CPC code is 41532 "Bars, rods and profiles, of aluminium".

Geographical scope: A1, A2, A4, C1-C4, D modules have been modelled within a worldwide scope, while A3 module has been modelled within an Italian scope.

LCA information

Declared unit: 1 kg of aluminium profile, plus its packaging.

Time representativeness: the reference year for the LCA calculation is 2025.

Database(s) and LCA software used: Ecoinvent 3.9, SimaPro 9.3.0.3

Description of system boundaries:

The system boundaries are cradle to gate with options, modules C1–C4, module D and with A4 as optional module (A1–A4 + C + D and additional modules). Modules A5 and B1 to B7 are excluded as they are strongly dependent on the specific application case.

The following stages are included in the study:

Product stage

Module A1: The extraction and processing of raw materials, such as paper and board, polyethylene, raw materials used in the products (billets) as well as the production of energy carriers used in the production process;

Module A2: The transport of the raw materials and packaging to the gate of the Next Extrusion production site;

Module A3: Includes the extrusion phase, the production of primary packaging, auxiliary materials; the treatment of waste generated by production processes and the production of packaging for finished products;

Module A4: Transport to the relevant market for the finished product and recycling and disposal of the packaging.

End of life stage

Module C1: Demolition/deconstruction;

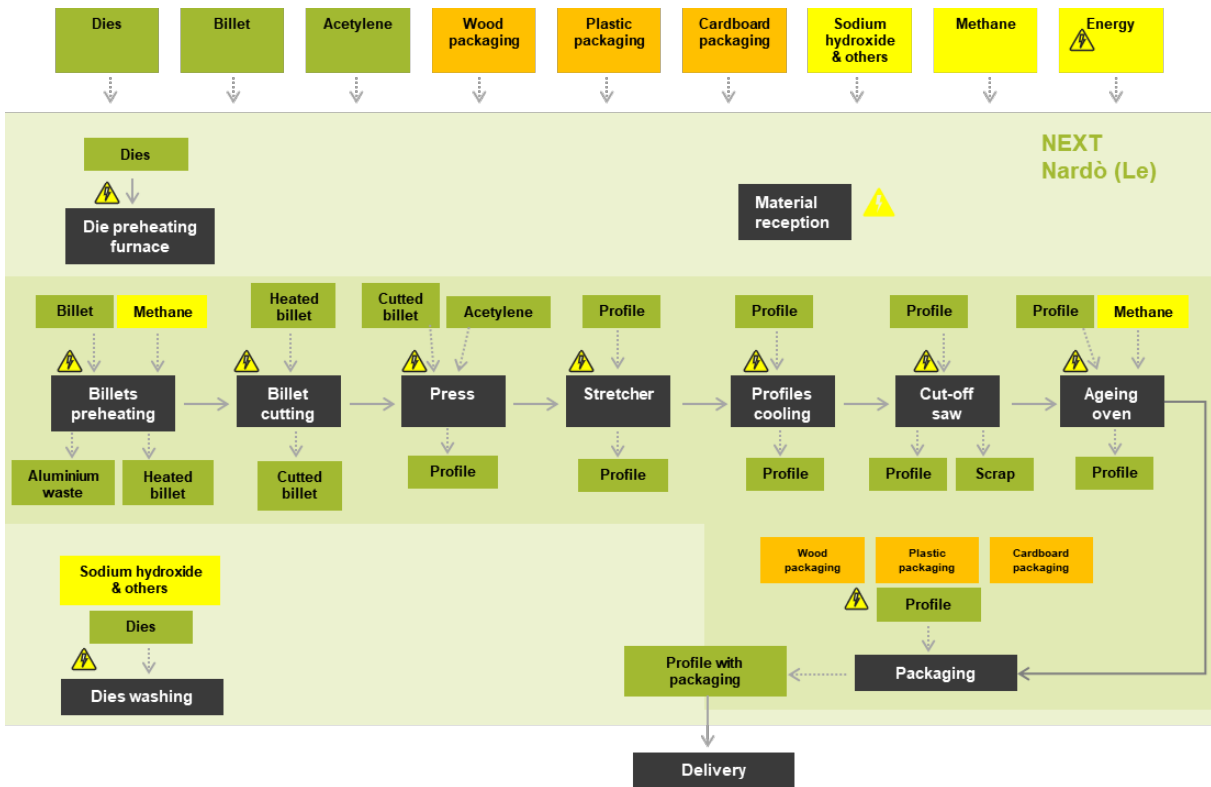
Module C2: Transport from collection to waste processing and disposal site;

Module C3: Waste processing for reuse, recovery and/or recycling;

Module C4: Disposal (landfill) of unrecovered material fractions of waste (not sent for recycling/re-use).

Module D: Load and benefit due to recycling of aluminum (95% of the product mass).

System diagram:



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

	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	ND	ND	ND	ND	ND	ND	ND	ND	X	X	X	X	X
Geography	EU, extra-EU, GLO	EU, extra-EU, GLO	ITA	EU, extra-EU, GLO	ND	ND	ND	ND	ND	ND	ND	ND	EU, extra-EU, GLO	EU, extra-EU, GLO	EU, extra-EU, GLO	EU, extra-EU, GLO	EU, extra-EU, GLO
Specific data used	>90%			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation - products	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation - sites	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Data quality

Data used for the manufacturing phase are based on the 2025 production year. The recycled aluminium content of the input billets was modelled using information declared by the relevant suppliers, as well as the environmental impact results reported in their respective EPDs.

Based on the information provided by the company, raw materials were assumed to be transported with lorries, trucks and vans. The real distances were considered for the transport of raw materials to the factory (module A2).

With specific reference to the energy purchased from the grid, the residual mix for the year 2024 (AIB) was used for energy production.

All background data used in the study are from LCI database and are not older than 5 years.

Allocation

The allocation is made in accordance with the provisions of EN 15804. Energy, resources (water and ancillary) and packaging in input and waste and emissions in output are allocated to the profile production and to the aluminium scrap production (due to profile cutting) based on the economic allocation.

Cut-offs criteria and main assumption

Raw and packaging materials are basically fully included as well as the energy for manufacturing. In the same way, all auxiliaries, and chemical products such as soda, nitrogen, ammonia, manufacturing waste (including hazardous waste) and air emissions are accounted for.

In modelling the energy mix used in the manufacturing processes, the contribution of energy purchased from the grid and the contribution of self-consumption energy from photovoltaic panels were considered for the reference period. The energy source is composed of 75% of grid energy and 25% of photovoltaic energy. Its climate impact is 0,589 kg CO₂ eq./kWh.

As far as cut-offs of life cycle stages, process units and data are concerned, they were not considered:

- some packaging materials used to transport components to the main production service, facility;
- the construction of the production site (capital goods);
- plant maintenance as it is negligible.

Scenarios for optional modules

For module A4, specific distance to Next Extrusion's clients referred to 2025 have been used (99% to Italy, 1% to other countries), considering a weighted average distance of 621 km by lorry. The module A4 considers also the treatment and disposal process of the finished product packaging.

For the definition of the end-of-life scenario:

- for phase C1: consumption was not considered as it was carried out manually;
- for phase C2: a distance of 50 km from the waste treatment and disposal plant was assumed;
- for phase C3 and C4: the considered percentages of aluminium sent for recycling (C3) and landfill (C4), are 95% and 5 %, respectively.

Module D reports loads and benefit from net output flows leaving the product system, i.e. from flows leaving the product system, lowered of the recycled content of aluminium initially included in the product.

LCA practitioners

This EPD and the supporting LCA study has been performed by:
Forethinking Srl Società Benefit; info@forethinking.com; www.forethinking.com

Content information

Product components	Weight, kg	Pre-consumer material, weight-%	Post-consumer material, weight-%	Biogenic material, weight-% and kg C/kg
Aluminium	1	31	16	-
TOTAL	1	31	16	-

Packaging materials	Weight, kg	Weight-% (versus the product)	Weight biogenic carbon, kg C/kg
Wood	0,02	2,0	0,01
Cardboard	0,01	1,0	0,005
Plastic	0,01	1,0	0,00
TOTAL	0,04	4,0	0,015

Information on the environmental and hazardous/toxic properties of a substances contained in the product: No substances included in the Candidate List of Substances of Very High Concern (SVHC) for authorization under the REACH regulations are present in the products either above the threshold for registration with the European Chemicals Agency or above 0.1% (wt/wt).

Results of the environmental performance indicators

Mandatory impact category indicators according to EN 15804

Results per declared unit (1 kg)								
Indicator	Unit	A1-A3	A4	C1	C2	C3	C4	D
GWP-fossil	kg CO ₂ eq.	8,57E+00	6,70E-02	0,00E+00	6,59E-03	2,98E-01	1,95E-03	-3,00E+00
GWP-biogenic	kg CO ₂ eq.	3,94E-02	7,80E-05	0,00E+00	2,44E-06	2,15E-03	7,09E-06	-1,69E-02
GWP-luluc	kg CO ₂ eq.	1,13E-01	2,12E-05	0,00E+00	2,37E-06	3,92E-04	2,18E-06	-7,18E-02
GWP-total	kg CO ₂ eq.	8,72E+00	6,71E-02	0,00E+00	6,59E-03	3,01E-01	1,96E-03	-3,09E+00
ODP	kg CFC 11 eq.	7,89E-07	1,40E-08	0,00E+00	1,57E-09	1,49E-08	2,13E-10	-3,18E-07
AP	mol H ⁺ eq.	6,99E-02	2,52E-04	0,00E+00	2,75E-05	1,32E-03	1,30E-05	-1,98E-02
EP-freshwater	kg P eq.	2,50E-03	3,68E-06	0,00E+00	4,10E-07	7,31E-05	5,75E-07	-1,75E-03
EP-marine	kg N eq.	1,12E-02	1,04E-04	0,00E+00	8,38E-06	2,39E-04	3,21E-06	-2,67E-03
EP-terrestrial	mol N eq.	1,18E-01	9,34E-04	0,00E+00	9,17E-05	2,62E-03	3,45E-05	-2,44E-02
POCP	kg NMVOC eq.	3,59E-02	3,37E-04	0,00E+00	2,95E-05	7,45E-04	1,02E-05	-9,11E-03
ADP-minerals&metals*	kg Sb eq.	2,52E-05	1,35E-07	0,00E+00	1,51E-08	1,17E-05	4,32E-09	-6,88E-06
ADP-fossil*	MJ	1,12E+02	9,16E-01	0,00E+00	1,03E-01	2,00E+00	2,78E-02	-4,65E+01
WDP*	m ³	2,71E+00	4,17E-03	0,00E+00	3,53E-04	3,00E-02	7,25E-04	-2,20E-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							

* 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.

Additional mandatory and voluntary impact category indicators

Results per declared unit (1 kg)								
Indicator	Unit	A1-A3	A4	C1	C2	C3	C4	D
GWP-GHG ¹	kg CO ₂ eq.	8,70E+00	6,71E-02	0,00E+00	6,59E-03	3,01E-01	1,96E-03	-3,09E+00

Resource use indicators

Results per declared unit (1 kg)								
Indicator	Unit	A1-A3	A4	C1	C2	C3	C4	D
PERE	MJ	3,08E+01	2,45E-01	0,00E+00	1,31E-03	2,13E-01	1,79E-03	-1,88E+01
PERM	MJ	2,34E-01	-2,34E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PERT	MJ	3,11E+01	1,17E-02	0,00E+00	1,31E-03	2,13E-01	1,79E-03	-1,88E+01
PENRE	MJ	1,11E+02	1,27E+00	0,00E+00	1,03E-01	2,00E+00	2,78E-02	-4,65E+01
PENRM	MJ	3,55E-01	-3,55E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PENRT	MJ	1,12E+02	9,16E-01	0,00E+00	1,03E-01	2,00E+00	2,78E-02	-4,65E+01
SM	kg	4,70E-01	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
NRSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
FW	m ³	2,01E+00	1,27E-04	1,13E-05	9,18E-04	1,96E-05	-1,31E-01	2,01E+00
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 This indicator accounts for all greenhouse gases except biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product. As such, the indicator is identical to GWP-total except that the CF for biogenic CO₂ is set to zero.

Waste indicators

Results per declared unit (1 kg)								
Indicator	Unit	A1-A3	A4	C1	C2	C3	C4	D
Hazardous waste disposed	kg	3,49E-02	2,22E-06	0,00E+00	2,48E-07	6,27E-03	2,77E-08	-2,93E-05
Non-hazardous waste disposed	kg	2,19E+00	1,03E-01	0,00E+00	9,61E-03	1,12E+00	5,27E-02	-9,29E-01
Radioactive waste disposed	kg	1,32E-03	6,19E-06	0,00E+00	6,95E-07	6,72E-06	1,10E-07	-2,96E-04

Output flow indicators

Results per declared unit (1 kg)								
Indicator	Unit	A1-A3	A4	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
Material for recycling	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	9,50E-01	0,00E+00	0,00E+00
Materials for energy recovery	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
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
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

Additional environmental information

The average recycled content, which includes pre- and post-consumer recycled scrap in the product is not below 45%. This value is based on supplier declarations regarding the actual recycled content of aluminium (47%, of which 31% pre-consumer and 16% post-consumer). The recycled content of the aluminium indicated above is based on supplier declarations. Recycled materials are allocated in accordance with the rules of EN 15804, distinguishing between virgin and recycled inputs.

This EPD and the PCR 2019:14 "Construction products" are available on the website of The International EPD[®] System (www.environdec.com).

The verifier and the Programme Operator do not make any claim nor have any responsibility of the legality of the products included in the present EPD. The LCA study and the present EPD have been issued with the technical scientific support of Forethinking Srl Società Benefit, www.forethinking.com.



References

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DIFFERENCES COMPARED TO THE PREVIOUS VERSION

The 2025 version differs from the 2024 version due to the use of more specific and detailed primary data, particularly regarding the recycled content of aluminium billets (pre- and post-consumer), as well as the refinement of the modelling approach based on the environmental impact results reported in supplier-specific EPD.

As a result, the Climate Change – total indicator for modules A1–A3 increased by approximately 40%. This variation reflects not only the improved characterisation of recycled content, but also a more accurate representation of aluminium supply chains, including production mix (primary vs. recycled material), process yields, and associated environmental burdens derived from EPD results.

Overall, these updates lead to a more representative and robust modelling framework, enhancing the reliability, transparency, and methodological consistency of the LCA results and the Environmental Product Declaration (EPD), despite the increase in absolute impact values.



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