

Environmental Product Declaration



THE INTERNATIONAL EPD® SYSTEM



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

NOVA table legs

From

narbutas

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

Programme information

Programme:	The International EPD [®] System
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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):

PCR 2019:14, version 2.0.0

c-PCR-021 Furniture and components of furniture, version 2.0.0

This c-PCR under PCR 2019:14 is an adoption of the NPCR 026 Part B for Furniture and components of furniture of EPD Norway. The c-PCR is valid until 2027-10-08.

PCR review was conducted by: The Technical Committee of the International EPD System. See www.environdec.com for a list of members. Review chair: 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: NARBUTAS

Third-party verification

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

☒ EPD verification by individual verifier

Third-party verifier: Vladimir Koci



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: Narbutas International

Contact: sustainability@narbutas.lt

Description of the organisation: NARBUTAS is an international manufacturer of office furniture, offering a wide range of solutions that help to fulfil the concept of the modern office. Focusing on meaningful innovation, time-tested and easy-to-implement solutions as well as internationally relevant design. The design motto is "Nothing unnecessary". NARBUTAS produces furniture by using only the minimum number of raw materials necessary and increasing the amount of renewable and recycled materials in our products. Employee engagement, health and safety are also among the company's priorities.

Product-related or management system-related certifications: Narbutas International management system is certified against ISO 9001, ISO 14001, and ISO 45001.

Name and location of production site(s): Narbutas International, Ukmerge, Lithuania.

Product information

Product name: NOVA legs

Product identification: The set of metal legs (2 pcs.) in U form are made from metal tube 40x40 mm. Powder coated metal.

Product description: The universal design and the functional desking system allowing to choose from a range of different desk designs and to adapt them to any office space. NOVA desk legs come in three different designs: U, A and O shape. The table collection also has bench desks that can be used to increase the number of workplaces. This product is within the limits of less than 0.1% of product weight for declared SVHCs by the European Chemicals Agency.

Manufacturing location: Lithuania

Technical data: The product weight is 9.2 kg including packaging.

UN CPC code: 3811

Geographical scope: Europe

The geographical scope is Europe based on the actual sales data to different countries which is predominantly European (86%). Modules A1 covers geographical scopes of incoming raw materials specific to supplier-location. Modules A2 covers the distances to the manufacturing location. Module A3 pertains to manufacturing location (CZ). Modules C and D Europe-average data was utilised to representing European-wide disposal.

Market where the declared product is distributed: Europe

LCA information

Functional unit / declared unit: 1 kg of metal legs

Reference service life: The use phase is based on a reference service life of 15 years as dictated by the PCR.

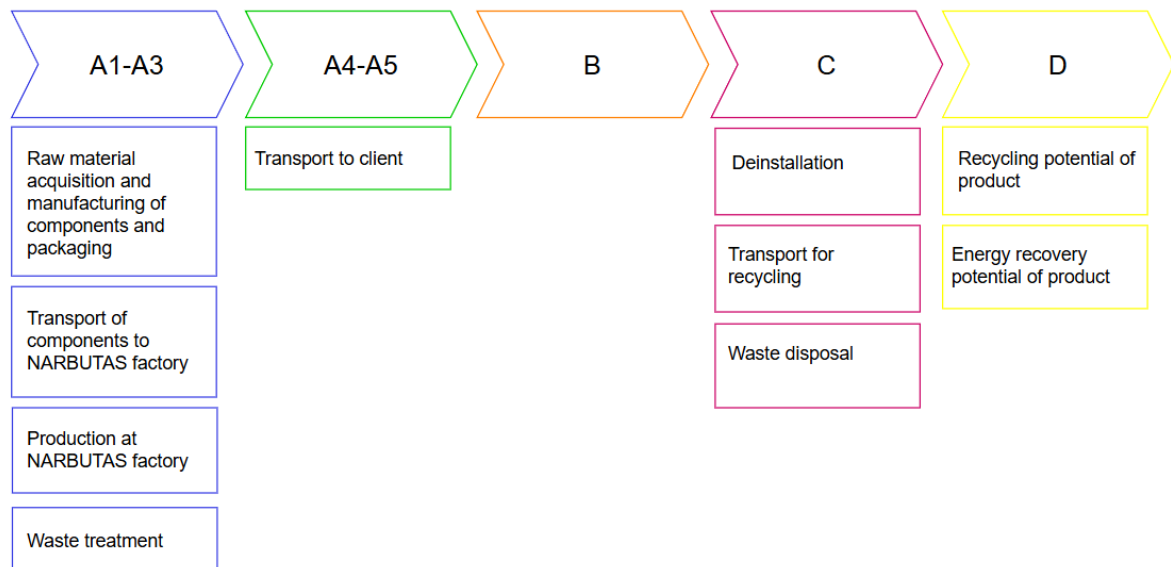
Intended use: This EPD represents one component of the three components required to calculate the impact of a desk produced out of the NOVA desking system (NOVA table frame, legs, and tabletop). To calculate the impact of a NOVA desk, it is important to take the weight of each component and multiply by their respective EPD results and then calculate the sum for the whole table.

Time representativeness: All the primary data was collected in in October – December 2024. It is based on the production year 2024. Electricity data used is representative of Lithuania's grid in 2022.

Database(s) and LCA software used: Ecochain Helix 4.3.1. Ecoinvent v3.9.1 database used for secondary data.

Description of system boundaries: Cradle to gate with modules C1–C4 and module D (A1–A3 + C + D).

System diagram:



Excluded lifecycle stages: All modules included in the scope. Modules A5, B1, C1, C3-C4 were deemed irrelevant for this product (see justifications in below on Calculation assumptions). These are presented as zero in results tables.

More information: LCA practitioner: Ecochain Technologies B.V., Wenckebachweg 123, 2nd floor, Amsterdam, Noord Holland 1096AM. tel. +31 20 30 35 777, athompson@ecochain.com

Calculation assumptions: The scope of calculations includes all known life cycles of the NOVA tables (legs in this case). Assessment considers the most typical and popular version of the product, so possible customizations with non-standard materials are not considered and the results are not valid in such situations. The results can be adapted to the standard product variations based on their mass, since the declared unit was chosen as 1 kg of the product.

Calculation follows the previously mentioned standards and PCR, and the results are characterized in Helix by Ecochain using EN15804. Assumptions are needed in several stages, to complement data gaps or predict future operations. Conservative assumptions are used if primary data is missing. The representativeness of secondary data depends on the available Ecoinvent v3.9.1 data sets. All the assumptions and limitations are specified in the background documentation of this study.

Module A1-A3:

The NOVA table legs are manufactured by NARBUTAS using different materials and components supplied by various suppliers. The primary data regarding the product materials was fully supplied by NARBUTAS. Therefore, 100% of components' total mass is modelled based on primary data. After modelling the components, their transportation to NARBUTAS warehouse was added.

The assessment of NOVA table legs production is based production data from 2024. The allocations are made per whole production process as the data for each separate operation is not available. Packaging materials and production losses have been included in this assessment. The production site does not have any hazardous waste streams. All other substances and emissions that are released during the production process are included in this assessment. The waste generated during the manufacturing process is tackled in a sustainable way by bringing it to the recycling partners. The electricity mix utilised was based on a mix of renewable sources and amounted to 0.072 kg CO₂ eq/kWh).

Module A4-A5:

Transportation to users was calculated as a weighted average of different distribution routes, based on the share of sales locations in 2024.

The table installation mainly consists of manual work and is done based on the assembly instructions obtained with the purchase. The frame and legs are attached to the tabletop manually using the provided allen key and screws. It is optional to use the screwdriver. Thus, the impact is considered zero. The packaging removed during the installation is also accounted for and end of life scenarios is based on cardboard being 28% incinerated and energy is recovered, the rest recycled. Then for plastics, 20% landfilled and 80% incinerated with energy recovery.

Module B1:

The use of NOVA desks produces no direct environmental impacts (emissions or uptake), so module B1 is considered zero according to the PCR.

Module C1-C4 and D

The NOVA desks' demolition (module C1) requires manual work and thus considered zero.

An average assumption of 150 km for all materials and all disposal processes were applied.

Expected shares of recycling, incineration and landfilling were applied per each material flow on well-drawn Dutch scenarios that is a proxy for the European region. Benefits of recycling and incineration, in terms of energy recovery are applied to Module D. The efficiency of heat capture was 37.1% and for electricity capture, 15%, representing European averages.

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	X	-	-	-	-	-	-	-	X	X	X	X	X
Geography	EU	EU	EU	EU	EU	EU	EU	EU	EU	EU	EU	EU	EU	EU	EU	EU	EU
Specific data used	>90%			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation – products	N/A			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation – sites	0%			-	-	-	-	-	-	-	-	-	-	-	-	-	-

Content information

Product components	Weight, kg	Post-consumer material, weight-%	Biogenic material, weight-% and kg C/kg
Steel	0.894		
PA6	0.007		
Chemicals (powder paint)	0.009		
TOTAL	0.91		
Packaging materials	Weight, kg	Weight-% (versus the product)	Weight biogenic carbon, kg C/kg
PE	0.0001	0.01 %	
PP	0.004	0.4 %	
Cardboard	0.083	8.3 %	0.3705 kg C/kg ¹
TOTAL	0.087	8.7 %	

There are no SVHC substances in the product, or their amounts are below EU regulation limits.

Recycled material

Provenience of recycled materials (pre-consumer or post-consumer) in the product: Some of the components include recycled materials, but there is no exact data on their total shares.

¹ 1kg biogenic carbon in the product/packaging is equivalent to the uptake of 44/12 kg of CO₂.

Results of the environmental performance indicators

*The estimated impact results are only relative statements, which do not indicate the endpoints of the impact categories, exceeding threshold values, safety margins and/or risks. Furthermore, the isolated use of A1 to A3 results is discouraged as this does not represent the full picture that includes end of life (Module C, excluding D since D is a subjective measure that takes into account benefits and burdens only standardised to the EN15804+A2 methodology).

Mandatory impact category indicators according to EN 15804

Results per functional or declared unit																
Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-fossil	kg CO ₂ eq.	2.503 E+0	2.83 2E-1	1.664 E-2	0	0	0	0	0	0	0	0	1.62 5E-4	2.34 6E-2	3.17 6E-3	- 1.38 8E-2
GWP-biogenic	kg CO ₂ eq.	- 1.057 E-1	8.50 0E-5	1.133 E-1	0	0	0	0	0	0	0	0	4.87 7E-8	6.38 0E-5	1.31 9E-7	- 9.06 0E-6
GWP-luluc	kg CO ₂ eq.	3.685 E-3	1.38 4E-4	3.313 E-7	0	0	0	0	0	0	0	0	7.94 4E-8	3.43 8E-5	6.50 8E-8	- 6.19 3E-6
GWP-total	kg CO ₂ eq.	2.402 E+0	2.83 4E-1	1.300 E-1	0	0	0	0	0	0	0	0	1.62 6E-4	2.35 6E-2	3.17 6E-3	- 1.38 9E-2
ODP	kg CFC 11 eq.	1.289 E-7	6.21 3E-9	4.081 E-10	0	0	0	0	0	0	0	0	3.56 5E-12	3.72 8E-10	4.40 6E-12	- 2.65 6E-10
AP	mol H ⁺ eq.	1.285 E-2	1.32 2E-3	6.466 E-5	0	0	0	0	0	0	0	0	7.58 8E-7	2.62 9E-4	1.28 7E-6	- 5.89 8E-5
EP-freshwater	kg P eq.	1.313 E-3	2.32 6E-6	9.800 E-8	0	0	0	0	0	0	0	0	1.33 5E-9	1.07 1E-6	1.51 7E-9	- 6.39 6E-7
EP-marine	kg N eq.	3.099 E-3	5.20 8E-4	2.688 E-5	0	0	0	0	0	0	0	0	2.98 8E-7	5.98 7E-5	1.23 7E-6	- 1.20 3E-5
EP-terrestrial	mol N eq.	2.959 E-2	5.62 1E-3	2.945 E-4	0	0	0	0	0	0	0	0	3.22 6E-6	6.84 4E-4	5.78 9E-6	- 1.39 4E-4
POCP	kg NMVOC eq.	1.239 E-2	1.96 4E-3	1.047 E-4	0	0	0	0	0	0	0	0	1.12 7E-6	2.04 9E-4	2.12 7E-6	- 6.62 2E-5
ADP-minerals&metals*	kg Sb eq.	2.310 E-5	8.82 2E-7	4.888 E-8	0	0	0	0	0	0	0	0	5.06 2E-10	1.44 5E-6	3.15 4E-10	- 1.19 3E-7
ADP-fossil*	MJ	2.939 E+1	4.08 8E+0	1.378 E-1	0	0	0	0	0	0	0	0	2.34 6E-3	3.18 2E-1	3.31 8E-3	- 1.44 8E-1
WDP*	m ³	8.736 E-1	1.78 9E-2	9.646 E-4	0	0	0	0	0	0	0	0	1.02 6E-5	3.86 4E-3	7.61 7E-5	- 2.56 1E-3
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 functional or declared unit																
Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-GHG ²	kg CO ₂ eq.	2.35 9E+0	2.83 4E-1	1.30 0E-1	0	0	0	0	0	0	0	0	1.62 6E-4	2.35 6E-2	3.17 6E-3	- 1.38 9E-2
Particulate matter	disease inc.	1.87 6E-8	2.78 1E-8	1.20 9E-9	0	0	0	0	0	0	0	0	1.59 6E-11	3.60 2E-9	2.82 7E-11	- 1.05 3E-9
Ionising radiation, human health	kBq U235 eq	6.32 5E-3	2.11 6E-3	1.85 6E-4	0	0	0	0	0	0	0	0	1.21 4E-6	8.46 3E-4	2.31 5E-6	- 1.79 8E-4
Ecotoxicit, freshwater	CTUe	1.71 2E+0	2.01 3E+0	1.51 1E-1	0	0	0	0	0	0	0	0	1.15 5E-3	2.49 5E-1	4.53 3E-3	- 4.99 8E-2
Human toxicity, cancer	CTUh	1.64 9E-10	1.52 4E-10	1.98 3E-11	0	0	0	0	0	0	0	0	8.74 8E-14	3.58 1E-11	4.39 4E-13	- 8.80 5E-11
Human toxicity, noncancer	CTUh	4.83 9E-9	3.17 1E-9	1.61 8E-10	0	0	0	0	0	0	0	0	1.81 9E-12	1.61 3E-9	6.12 3E-12	- 1.54 3E-10
Land Use	Pt	6.83 4E+0	3.07 2E+0	6.16 2E-2	0	0	0	0	0	0	0	0	1.76 3E-3	5.64 8E-1	6.61 9E-3	- 4.63 0E-2

Resource use indicators

Results per functional or declared unit																
Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
PERE	MJ	4.78 0E+0	6.46 8E-2	- 5.60 9E-1	0	0	0	0	0	0	0	0	3.71 2E-5	4.93 3E-2	9.20 3E-5	- 1.50 8E-2
PERM	MJ	1.31 9E+0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PERT	MJ	3.46 0E+0	6.46 8E-2	- 5.60 9E-1	0	0	0	0	0	0	0	0	3.71 2E-5	4.93 3E-2	9.20 3E-5	- 1.50 8E-2
PENRE	MJ	3.49 1E+1	4.34 6E+0	- 8.44 3E-2	0	0	0	0	0	0	0	0	2.49 4E-3	3.37 5E-1	3.53 3E-3	2.96 1E-1
PENRM	MJ	2.53 1E-1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PENRT	MJ	3.46 5E+1	4.34 6E+0	- 8.44 3E-2	0	0	0	0	0	0	0	0	2.49 4E-3	3.37 5E-1	3.53 3E-3	- 2.96 1E-1
SM	kg	3.07 0E-1	0	0	0	0	0	0	0	0	0	0	0	0	0	0

² 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.

RSF	MJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NRSF	MJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FW	m ³	2.18 9E-2	5.73 6E-4	5.53 1E-5	0	0	0	0	0	0	0	0	3.29 1E-7	1.49 1E-4	3.47 4E-6	- 8.43 2E-5
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															

Waste indicators

Results per functional or declared unit																
Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Hazardous waste disposed	kg	1.21 3E-1	2.57 5E-5	4.46 9E-7	0	0	0	0	0	0	0	0	1.47 8E-8	1.76 3E-6	1.87 0E-8	- 1.38 7E-6
Non-hazardous waste disposed	kg	9.79 4E-1	2.58 5E-1	9.65 7E-3	0	0	0	0	0	0	0	0	1.48 4E-4	9.58 9E-3	1.54 3E-2	- 6.06 1E-3
Radioactive waste disposed	kg	6.26 4E-4	1.37 5E-6	- 8.89 4E-8	0	0	0	0	0	0	0	0	7.88 8E-10	6.44 3E-7	1.30 1E-9	- 1.76 4E-7

Output flow indicators

Results per functional or declared unit																
Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Components for re-use	kg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Material for recycling	kg	1.10 7E-1	0	6.51 5E-2	0	0	0	0	0	0	0	0	0	8.95 6E-1	0	0
Materials for energy recovery	kg	0	0	2.20 3E-2	0	0	0	0	0	0	0	0	0	5.83 3E-3	0	0
Exported energy, electricity	MJ	0	0	1.42 6E-1	0	0	0	0	0	0	0	0	0	0	0	5.42 5E-2
Exported energy, thermal	MJ	0	0	8.28 2E-2	0	0	0	0	0	0	0	0	0	0	0	3.15 0E-2

References

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General Programme Instructions of the International EPD® System. Version 5.0.

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