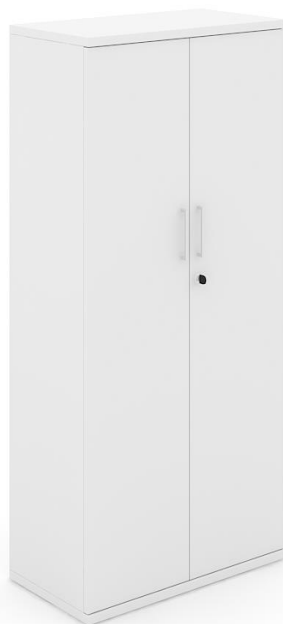


# ENVIRONMENTAL PRODUCT DECLARATION

ISO 14025

narbutas





DECLARATION OWNER	Narbutas
ISSUE DATE	2017-07-24
VALID TO	2020-07-24
EPD REGISTRATION NUMBERS	S-P-01077
VERSION	V01.0

**Product: Cabinet UNI - PX4C081**

Narbutas

## 1 GENERAL INFORMATION

### PRODUCT

Cabinet UNI - PX4C081

### DECLARATION TYPE

The intended use of the EPD is to communicate scientifically based information about the potential environmental impact of the Cabinet UNI - PX4C081 to professional stakeholders (business to business).

### PROGRAM OPERATOR

The International EPD® System, information available at the website: [www.environdec.com](http://www.environdec.com).

### THIS DECLARATION IS BASED ON PRODUCT CATEGORY RULES:

PCR for Office Furniture Workspace Products: UNCPD 3814 – VERSION 1.1

### DECLARED UNIT

One Cabinet UNI - PX4C081

### THE ENVIRONMENTAL PRODUCT DECLARATION IS PERFORMED BY:

NIZAR HAOUES – HNC&PARTNERS

### EPD TYPE

This EPD includes all phases from cradle to gate.

### OWNER OF THE DECLARATION

Narbutas

### MANUFACTURER

**Narbutas Furniture Company, UAB**  
Šeškinės st. 55A  
07159 Vilnius, Lithuania

### PLACE OF USAGE

Global

### ISSUE DATE

2017-07-24

### VALID TO

2020-07-24

### COMPARABILITY

EPDs within the same product category but from different programmes may not be comparable;

### YEAR OF STUDY

2017

### EXTERNAL VERIFICATION

Damien PRUNEL, Bureau Veritas CODDE

## 2 THE COMPANY AND THE PRODUCT

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### 2.1 NARBUTAS

**NARBUTAS FURNITURE COMPANY** has been largely known for its full production cycle experience and leadership in the region for more than 25 years.

**Production.** A new modern factory, measuring up to 29,100 sq.m. was built in 2008, 71km from the capital of Lithuania Vilnius.

**Amount.** Approximately 465 Cabinet UNI - PX4C081 are produced in the factory per year.

**Just-in-time.** The implementation of Lean system was started in 2012.

Today Narbutas company is an effective team of specialists who design and manufacture office and other public-orientated furniture. Narbutas furniture is well established among customers and is favored across the whole of Europe. Our company has a wide range of clients and partners in many countries.

### 2.2 ENVIRONMENTAL POLICY

In order to attain responsible and continual improvement, the company was certified by ISO14001 and ISO 9001 quality and environmental management system standards which cover constant development of business procedures and strengthen the efficiency of all the activities.

The main focus is the environmental aspects management in organization – ISO14001. Environmental management systems help, Narbutas, to identify the aspects of the environmental protection, to determine their significance and to manage those processes as a part of business activities. The systems from a responsible attitude of the company towards the local and the global problems of the environmental protection. It also refers to the reduction of harmful effects on the environment caused by the company's activities, formalizes the commitments to the environmental protection and shows the implementation methods, objectives and environmental protection programs.

### 2.3 PRODUCT SPECIFICATION AND USAGE

The EPD describes the environmental results for production of the Cabinet UNI - PX4C081 (800x425 H1508mm) from Narbutas production in Lithuania.

UNI is a commercial reference for a Cabinet made by NARBUTAS. UNI is an optimal office furniture system which allows you to set up a comfortable, functional, aesthetic and tidy workplace. Conservative design and carefully thought-out elements create practical and versatile combinations of the workspace. UNI complies with European office furniture standard (UNI EN – 527/1).

The product is made of particle wood with a layer of melamine, the whole assembled by woodscrew on carbon steel. UNI Cabinet is a universal storage system created for easy document archiving. These cabinets suit individual needs in order to efficiently use the office space.

There is a wide range of cabinets in different height and width: bookcases, cabinets with doors, cabinets with tambour doors, desk cabinets. All cabinets are with locks.

## 2.4 APPLICATION

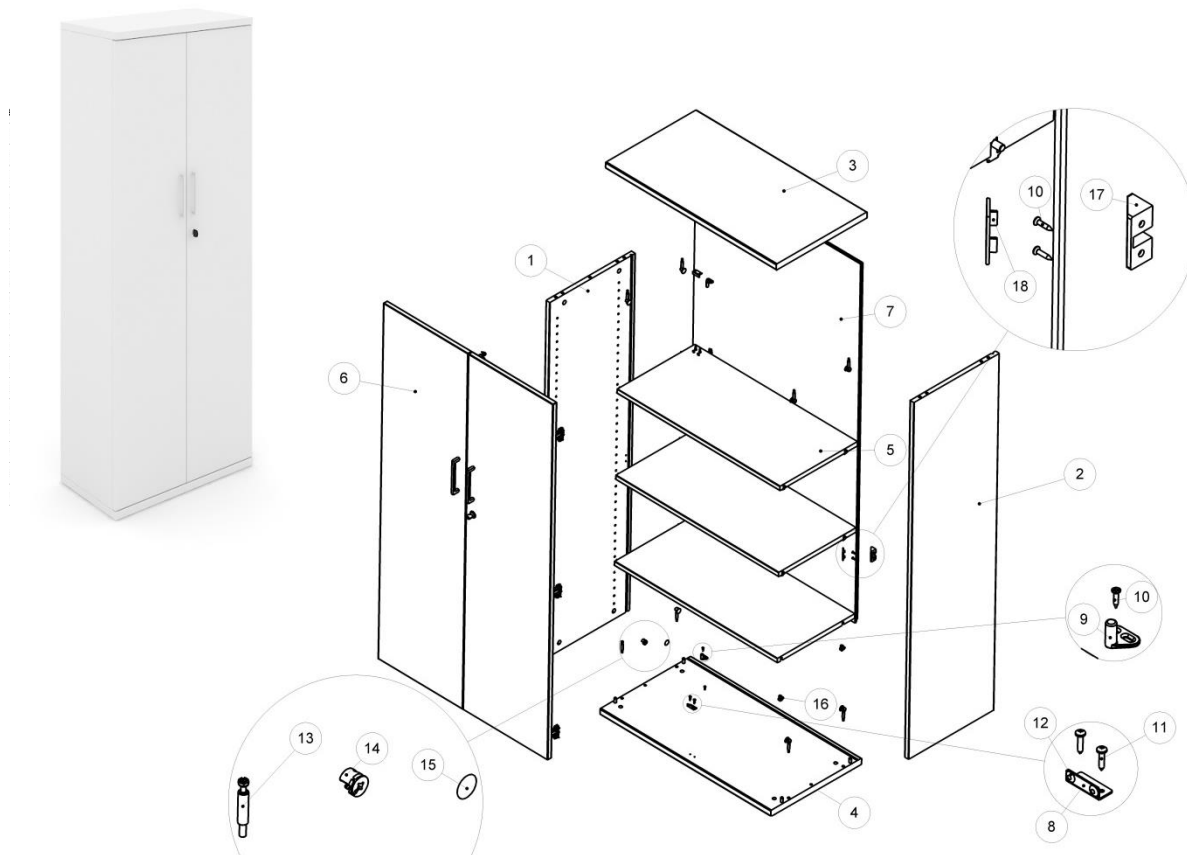
UNI is a commercial reference for a cabinet storage made by NARBUTAS. UNI is an optimal office furniture system which allows you to set up a comfortable, functional, aesthetic and tidy workplace.

## 2.5 MAIN MATERIALS

### Composition as % by weight

Main materials	%
Wood	84,08
Steel	0,58
Cardboard	10,36
Melamine	1,36
Ethynyle-vinyl acetate copolymer	0,24
Other	2,13
ABS	1
PVC	0,17
LDPE + LLDPE	0,08

All materials used for the Cabinet UNI - PX4C081 are included in the calculations, including the packaging materials used by Narbutas before distributing the Cabinet UNI - PX4C081 from Narbutas to Lithuania to customers.



Nr.	Name	QTY
1	Cabinet wall left	1
2	Cabinet wall right	1
3	Cabinet roof	1
4	Cabinet bottom	1
5	Cabinet shelf	3
6	Cabinet doors	1
7	Cabinet back	1
8	Metal angle bar	2
9	Fixture bar	2

Nr.	Name	QTY
10	Woodscrew ABC SPAX-S 3.5x15 Cone	8
11	Woodscrew ABC SPAX-S 3.5x15 Flat	4
12	Plastic door damper	4
13	Twister euro 5/11x34	8
14	Eccentric cam connecting fitting	8
15	Plastic cap	8
16	Shelf support 7006/9.5	12
17	Plastic angle coupler	2
18	Coupler's plastic cap	2

Figure 1 : Cabinet UNI - PX4C081 description

### 3 LCA: CALCULATION INFORMATION

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The EPD is prepared according to the specification in the product category rules "Other furniture used in offices and other furniture N.E.C" developed in the framework of the International EPD® System, operating in accordance with ISO 14025:2006. The calculations for the results in this EPD have been based on production data from 2017. The background data derives from the LCA Ecoinvent v3.1. The calculations are based on the characterization model CML 2011 dated april 2013.

#### 3.1 DECLARED UNIT

One Cabinet UNI - PX4C081

Lifetime of the product: 25 years.

#### 3.2 SYSTEM BOUNDARY

The system boundaries, presented in Figure 2, include the Upstream Processes and the Core Processes of the Downstream module. The definition of the system boundaries complies with the rules laid down in the referenced PCR document.

##### **The Upstream Processes Include:**

- ▢ Extraction and refining of raw material for all main parts and components;
- ▢ Production of semi-manufactured goods;
- ▢ Transportation of raw material and semi-manufactured good;
- ▢ Manufacturing process for main parts and components (if not manufactured within the organization);
- ▢ Manufacturing of auxiliary materials, chemicals, packaging (primary and secondary);
- ▢ Treatment of waste generated by the up-stream module.

##### **The Core Processes include:**

- ▢ Transportation of main parts and components to the manufacturer;
- ▢ All operations (e.g. energy, fuel and water consumption, emissions) for assembly or product manufacturing (if it takes place within the organization);
- ▢ Stocking and packaging of final product;
- ▢ Treatment of waste generated by the core module.

##### **The downstream Processes include:**

- ▢ Distribution from final manufacturing to customer;
- ▢ Use phase;

□ Disposal phase of both the product and the packaging materials.

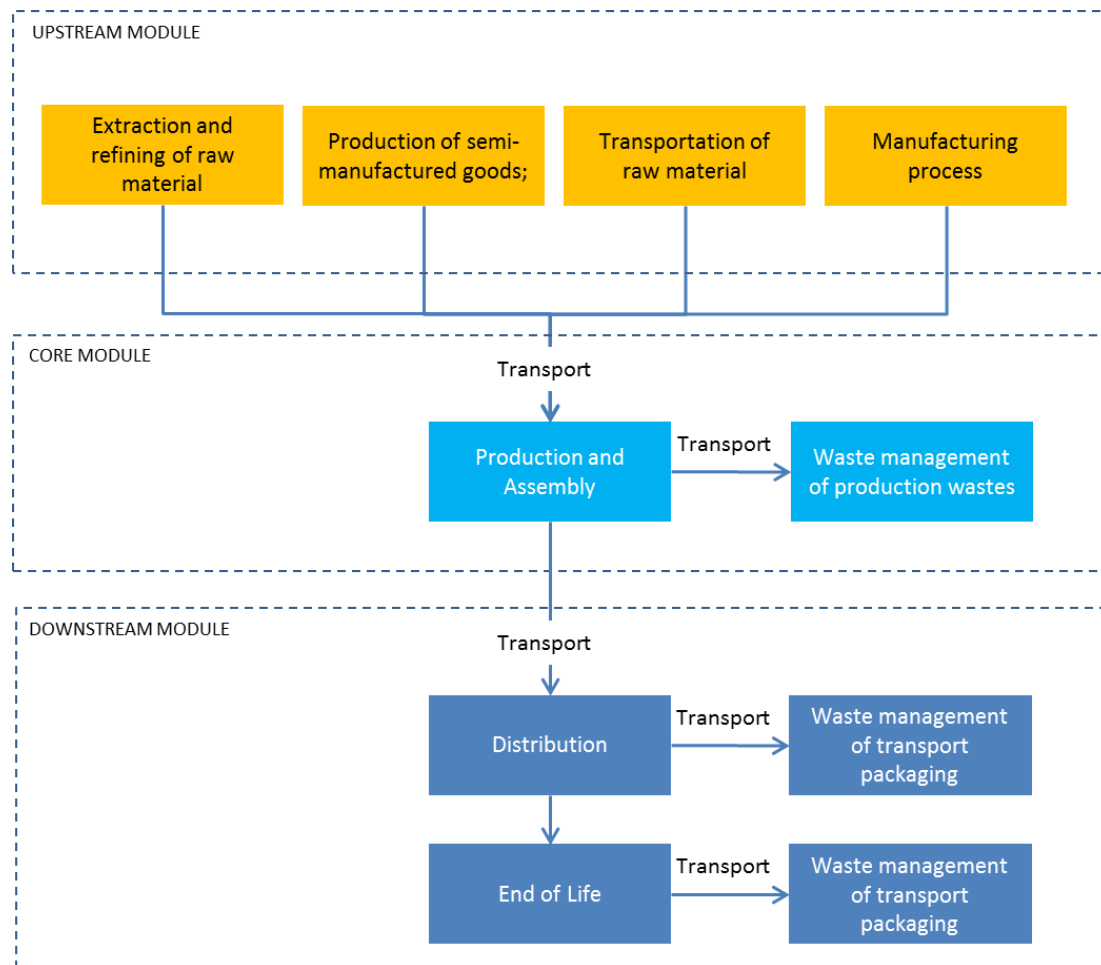


Figure 2: Description of the system boundaries

The International EPD® System has adopted an LCA calculations procedure, which is separated into three different life cycle stages:

- Upstream module (from cradle-to-gate);
- Core module, manufacturing processes (from gate-to-gate);
- Downstream module (from gate-to-grave).

### 3.3 CUT-OFF

The cut-off criteria used for this study follow the guidelines set out in the PCR, as follows:

1. All elementary flows at resource extraction shall be included, except for the flows that fall under the general 1% cut off rule.
2. Processes and activities that contribute to less than 1% of the total environmental impact for any impact category may be omitted from the inventory analysis. Processes that are not included in the LCA shall be documented.



### 3.4 DATA QUALITY

#### 3.4.1 DATA QUALITY EVALUATION

The objective of this evaluation is to evaluate the environmental impacts generated by the products Cabinet UNI - PX4C081 throughout their entire life cycle. To this end, ISO 14040, ISO 14044 and PCR have been met regarding the quality of data on different following criteria:

- The time factor, the life cycle inventory data used comes from:
  - o Data collected specifically for this study on NARBUTAS sites. Data sets are based on 1 year averaged data (time period: April 2017 to June 2017).
  - o In the absence of collected data, generic data from the ecoinvent V3.3 "Alloc Rec" database. This is regularly updated and is representative of current processes (the entire database having been updated in 2016).
- Geography:
  - o Data comes from production sites of NARBUTAS in Lithuania.
  - o The generic data comes from the ecoinvent database, representative of the European processes.
- Technology - material shaping technologies are based on:
  - o NARBUTAS technologies used for the manufacture methods of the product.
  - o European technology in the case of use of generic data.

#### 3.4.2 TREATMENT OF MISSING DATA

Any missing data has been replaced by estimations based on the most likely scenarios.

### 3.5 ALLOCATIONS

Raw materials and production processes are included for virgin resources. No allocation is made for materials subject to recycling. The recycling process is included for input of recycled resources. Outputs subject to recycling are regarded as inputs to the next life cycle. For the energy and water consumptions, emissions and waste treatment, mass allocation has been applied.

#### **Raw material**

In this part, the quantity of waste generated during the manufacturing process is included. Only melaminated, particle board, ABS, cardboard and metal leg and frame generate waste.

Steel, Wood and ABS production waste are recycled. For the transport of waste to final disposal or recuperation sites, the following scenarios have been used:

- ✓ Melaminated : 250 km
- ✓ Wood : 250 km
- ✓ ABS : 100 km
- ✓ Steel : 65km
- ✓ Cardboard : 65 km

Recycled waste has been modeled with the EIV3 module "Waste to recycling" and the benefit of recycling is taken account using the avoided product. The following hypotheses for recycling:

- ✓ Steel : 95% are recycled
- ✓ Wood / Melaminated : 95% are recycled
- ✓ ABS: 85% are recycled
- ✓ Cardboard : 95% are recycled

### **Distribution**

The collected data and hypotheses used to model the distribution from manufacturing to customer are based on the percentage of the sell repartition.

### **Use stage:**

There is no impact of the use phase because no consumption during this stage.

### **End of life stage:**

There is any data about a specific end of life for this product. The following hypotheses were used to model the end of life of the product Cabinet UNI :

- ✓ Scenario for the treatment of household waste calculated with Eurostat data: 19% incineration and 81% landfill
- ✓ Only cardboard and steel are recycling, and they follow the same hypotheses than the recycling of the production waste
- ✓ The transport to final disposal or recycling is 50 km
- ✓ The wood treatment follow the same scenario of household waste 19% incineration and 81% landfill to count carbon dioxide biogenic and methane biogenic.

## 4 ENVIRONMENTAL PROFILE OF THE PRODUCT

Here below is the environmental profile of Cabinet UNI - PX4C081; the data concern the production of 1 unit.

Impact Categories	Unit	Total	UPSTREAM	CORE	DOWNSTREAM
Global warming	kg CO2 eq	5.61E+01	4.08E+01	4.34E+00	1.10E+01
Ozone layer depletion (ODP)	kg CFC-11 eq	6.85E-06	4.57E-06	8.65E-07	1.42E-06
Acidification	kg SO2 eq	2.49E-01	2.24E-01	-1.02E-03	2.57E-02
Photochemical oxidation	kg C2H4 eq	1.85E-02	1.80E-02	-1.35E-03	1.90E-03
Biogenic CO2 eq	kg CO2 eq	3.55E+01	2.22E+01	-4.70E+00	1.80E+01
Eutrophication	kg PO43- eq	2.49E-01	2.24E-01	-1.02E-03	2.57E-02
Renewable resources	Unit	Total	UPSTREAM	CORE	DOWNSTREAM
Material					
Water consumption	kg	1.92E-01	1.89E-01	1.19E-03	2.28E-03
Wood	kg	4.91E+01	4.91E+01	0.00E+00	0.00E+00
Cardboard	kg	6.05E+00	0.00E+00	6.05E+00	0.00E+00
Others	kg	2.31E-02	2.96E-02	-5.26E-03	-1.28E-03
Energy					
Renewable. biomass	MJ	4.40E+02	6.89E+02	-2.06E+02	-4.26E+01
Renewable. wind. solar. geothe	MJ	4.68E+00	3.66E+00	1.42E+00	-3.98E-01
Renewable. hydro	MJ	2.38E+01	1.97E+01	4.36E+00	-2.12E-01
Non-renewable resources	Unit	Total	UPSTREAM	CORE	DOWNSTREAM
Material					
Steel	kg	6.36E-01	6.36E-01	--	--
Plastic	kg	6.87E-01	6.87E-01	1.77E-01	--
Others	kg	2.31E-02	2.96E-02	-5.26E-03	-1.28E-03
Energy					
Non renewable. fossil	MJ	8.64E+02	6.85E+02	8.19E+01	9.67E+01
Non-renewable. nuclear	MJ	7.33E+01	6.89E+01	7.62E+00	-3.21E+00
Non-renewable. biomass	MJ	-4.00E-01	1.84E-01	-4.54E-01	-1.30E-01
Secondary resources	Unit	Total	UPSTREAM	CORE	DOWNSTREAM
Material ressources	kg	6.14E+00	6.14E+00	0.00E+00	0.00E+00
Energy ressources	MJ	1.28E+00	0.00E+00	1.28E+00	0.00E+00
Secondary resources	Unit	Total	UPSTREAM	CORE	DOWNSTREAM
Recovered energy flows	MJ	1.67E+02	0.00E+00	0.00E+00	1.67E+02

Waste	Unit	Total	UPSTREAM	CORE	DOWNSTREAM
Recycling waste	kg	1.36E-04	1.36E-04	0.00E+00	0.00E+00
Hazardous waste	kg	1.08E-03	1.11E-03	-3.27E-05	4.18E-06
Non-Hazardous waste	kg	6.34E+01	4.88E+00	1.49E+00	5.70E+01
Water consumption	Unit	Total	UPSTREAM	CORE	DOWNSTREAM
Total consumption	m3	1.92E-01	1.89E-01	1.19E-03	2.28E-03
Core direct consumption	m3	1.19E-03	--	1.19E-03	--
Others impacts	Unité	Total	UPSTREAM	CORE	DOWNSTREAM
Human toxicity					
Human toxicity. non-cancer	CTUh	2.97E-05	2.05E-05	-1.16E-06	1.04E-05
Human toxicity. cancer	CTUh	3.81E-06	3.85E-06	-3.02E-07	2.61E-07
Ecotoxicity	CTUe	1.05E+03	3.83E+02	-1.98E+01	6.82E+02
Land occupation - Total					
Agricultural land occupation	species.yr	6.98E-07	1.15E-06	-3.79E-07	-7.39E-08
Urban land occupation	species.yr	4.66E-08	3.02E-08	-4.55E-09	2.09E-08
Natural land transformation	species.yr	3.14E-08	2.99E-08	1.29E-10	1.36E-09
Abiotic depletion	kg Sb eq	6.87E-04	6.82E-04	-4.69E-06	1.01E-05

PCR 2012:19. version 1.1 (UN CPC 38140. other furniture). review was conducted by: The Technical Committee of the International EPD® System. Chair: Massimo Marino Contact via [info@environdec.com](mailto:info@environdec.com) . available on the website of the International EPD Consortium (IEC): [www.environdec.com](http://www.environdec.com)

Quality audit for the declaration and the information in compliance with ISO 14025:2006

☐ EPD process certification

☒ EPD verification

Third party verifier: Damien PRUNEL. LCA & Ecodesign consultant

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Accredited by "The International EPD® System"

## 5 BIBLIOGRAPHY

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- Ecoinvent. 2014: web site of “Swiss Centre for Life Cycle Assessment”. supplier of ecoinvent v3.1 database ([www.ecoinvent.ch](http://www.ecoinvent.ch)).