

# ENVIRONMENTAL PRODUCT DECLARATION

in accordance with ISO 14025, ISO 21930 and EN 15804

Owner of the declaration:	Skandiform AB
Program operator:	The Norwegian EPD Foundation
Publisher:	The Norwegian EPD Foundation
Declaration number:	NEPD-3482-2081-EN
Registration number:	NEPD-3482-2081-EN
ECO Platform reference number:	-
Issue date:	06.05.2022
Valid to:	06.05.2027

## D2

Skandiform AB

**skandiform**

[www.epd-norge.no](http://www.epd-norge.no)



## General information

**Product:**

D2

**Owner of the declaration:**

Skandiform AB  
 Contact person: Per Wikström  
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**Program operator:**

The Norwegian EPD Foundation  
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**Manufacturer:**

Skandiform AB

**Declaration number:**

NEPD-3482-2081-EN

**Place of production:**

Skandiform AB  
 Dolinvägen 8 SE-288 34 Vinslöv  
 Sweden

**ECO Platform reference number:**

**Management system:**

ISO9001/14001/45001 samt FSC Certifierande organ: Bureau Veritas

**This declaration is based on Product Category Rules:**

CEN Standard EN 15804:2012+A1:2013 serves as core PCR  
 NPCR 026:2018 Part B for furniture

**Organisation no:**

SE556092-822701

**Statement of liability:**

The owner of the declaration shall be liable for the underlying information and evidence. EPD Norway shall not be liable with respect to manufacturer information, life cycle assessment data and evidences.

**Issue date:** 06.05.2022

**Valid to:** 06.05.2027

**Declared unit:**

1 Pcs D2

**Year of study:**

2021

**Declared unit with option:**

A1,A2,A3,A4

**Comparability:**

EPDs from programmes other than the Norwegian EPD Foundation may not be comparable

**Functional unit:**

1 Pcs D2 - Powder coated steel tubular frame with recycled plastic seat and back.

**Development and verification of EPD:**

The declaration has been developed and verified using EPD tool lca.tools ver EPD2020.11, developed by LCA.no AS. The EPD tool is integrated into the company's environmental management system, and has been approved by EPD-Norway

**General information on verification of EPD from EPD tools:**

Independent verification of data, other environmental information and the declaration according to ISO 14025:2010, § 8.1.3 and § 8.1.4. Individual third party verification of each EPD is not required when the EPD tool is i) integrated into the company's environmental management system, ii) the procedures for use of the EPD tool are approved by EPDNorway, and iii) the process is reviewed annually. See Appendix G of EPD-Norway's General Programme Instructions for further information on EPD tools.

Developer of EPD:

Per Wikström

Reviewer of company-specific input data and EPD:

Moa Ulfsson

**Verification of EPD tool:**

Independent third party verification of the EPD tool, background data and test-EPD in accordance with EPDNorway's procedures and guidelines for verification and approval of EPD tools.

**Approved:**

Sign



Håkon Hauan, CEO EPD-Norge

Erik Svanes, Norsus AS

(no signature required)

Key environmental indicators	Unit	Cradle to gate A1 - A3
Global warming	kg CO2 eqv	19,31
Total energy use	MJ	268,04
Amount of recycled materials	%	43,30

## Product

### Market:

Main market Europe but can be sold worldwide.

### Product description:

Designer: Stefan Borselius  
 "We wanted to develop a chair that would be easy to use and comfortable to sit on – taking the opportunity to combine different materials and components based on how the chair is going to be used. With the moulded seat and back, I have been able to work with soft edges and details to design a chair with classic – yet still unique – features. It feels even better to have been able to work with a new material that has a low climate impact."

For more information please visit our webpage:  
<https://www.skandiform.se/>

### Product specification

S-1020  
 Stackable chair. Seat and back in natural or black plastic. Plastic consists of 100% recycled polypropylene (PP) , reinforced with 20% hemp fibre. Frame of tubular steel available in various colours black (RAL9005) or white lacquered (RAL9016) metal. Other colours on request.

Dimensions:  
 Width: 50 cm  
 Depth: 52 cm  
 Seat Height: 46 cm  
 Height: 82 cm

Variants:  
 S-1025  
 Powder coated steel tubular frame with recycled plastic back and upholstered seat. Fabric chosen by customer, HR-foam.  
 S-1030  
 Powder coated steel tubular frame with upholstered seat and back. Fabric chosen by customer, HR-foam.

### Technical data:

S-1020  
 Total weight: 4,85Kg (packing excluded)  
 Total weight: 6,05Kg (packing included)

S-1025  
 Total weight: 6,05Kg (packing excluded)  
 Total weight: 7,25Kg (packing included)

S-1030  
 Total weight: 6,65Kg (packing excluded)  
 Total weight: 7,85Kg (packing included)

### Reference service life, product

15 years' service life, 5 years warrant if no other indicated

### Reference service life, building

Materials	kg	%	Recycled share in material (kg)	Recycled share in material (%)
Metal - Steel	2,90	59,79	0,58	20,00
Textile - Hemp	0,38	7,84	0,00	0,00
Plastic - Polypropylene (PP)	1,52	31,34	1,52	100,00
Powder coating	0,05	1,03	0,00	0,00
Total:	4,85		2,10	

## LCA: Calculation rules

### Declared unit:

1 Pcs D2

### Cut-off criteria:

All major raw materials and all the essential energy is included. The production processes for raw materials and energy flows with very small amounts (less than 1%) are not included. These cut-off criteria do not apply for hazardous materials and substances.

### Data quality:

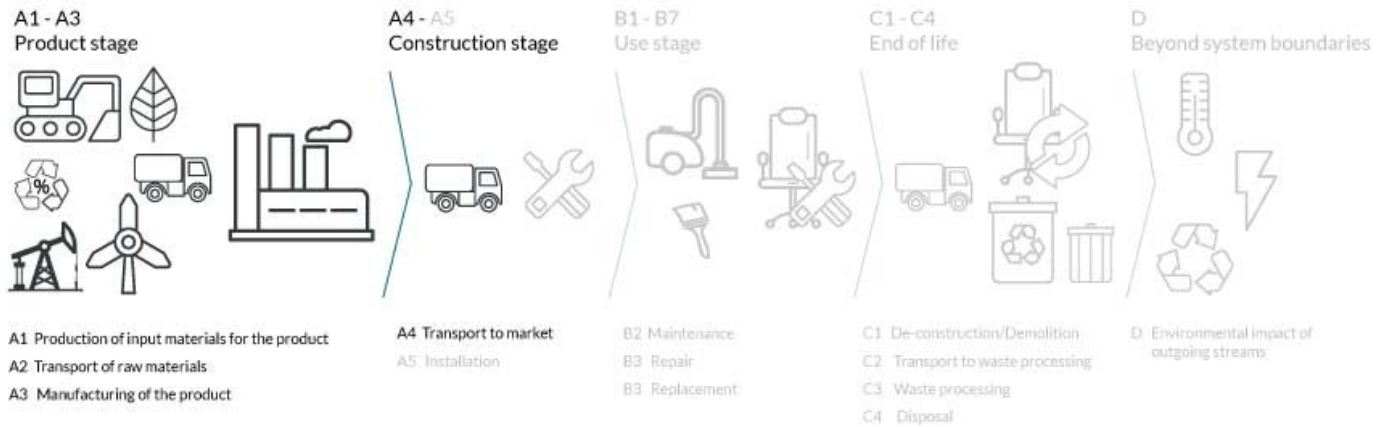
Specific data for the product composition are provided by the manufacturer. They represent the production of the declared product and were collected for EPD development in the year of study. Background data is based on registered EPDs according to EN 15804, Ostfold Research databases, ecoinvent and other LCA databases. The data quality of the raw materials in A1 is presented in the table below.

Materials	Source	Data quality	Year
Plastic - Polypropylene (PP)	ecoinvent 3.4	Database	2015
Metal - Steel	NEPD-475-331-EN	EPD	2016
Textile - Hemp	ecoinvent 3.4	Database	2017
Powder coating	ecoinvent 3.5	Database	2018
Process	ecoinvent 3.6	Database	2019

### Allocation:

The allocation is made in accordance with the provisions of EN 15804. Effects of primary production of recycled materials is allocated to the main product in which the material was used. The recycling process and transportation of the material is allocated to this analysis.

## System boundary:



## Additional technical information:

D2 is tested according to EN 16139:2013 Furniture – Strength, durability and safety – Requirements for non-domestic seating.

D2 has also been certified according to Swedish Möbelfakta requirements. Möbelfakta is a type 1 eco-label according to ISO 14024 for furniture that considers both quality, environment, and responsible supply chains.

<https://www.mobelfakta.se/about.html>

## LCA: Scenarios and additional technical information

The following information describe the scenarios in the different modules of the EPD.

Within the Kinnarps group we have our own logistic system, "the blue trucks". The main features are that we don't use traditional packing material, such as cardboard boxes. Instead, we use blankets and recyclable materials. This means that our trucks can transport 33% more cargo than traditional systems and methods and we don't generate any waste of packing material. The trucks are fuelled with HVO100 that is 100% fossil free. Skandiform AB, at our site in Vinslöv, we only use electricity from renewable sources such as hydroelectricity 81%, wind 14% and sun 5% (figures from 2021)

### Transport from production place to user (A4)

Type	Capacity utilisation (incl. return) %	Type of vehicle	Distance km	Fuel/Energy consumption	Unit	Value (l/t)
Truck	55,0 %	Truck, over 32 tonnes, EURO 6	300	0,022606	l/tkm	6,78
Railway					l/tkm	
Boat					l/tkm	
Other Transportation					l/tkm	

### Assembly (A5)

	Unit	Value
Auxiliary	kg	
Water consumption	m <sup>3</sup>	
Electricity consumption	kWh	
Other energy carriers	MJ	
Material loss	kg	
Output materials from waste treatment	kg	
Dust in the air	kg	
VOC emissions	kg	

### Use (B1)

	Unit	Value

### Maintenance (B2)/Repair (B3)

	Unit	Value
Maintenance cycle*		
Auxiliary		
Other resources		
Water consumption	m <sup>3</sup>	
Electricity consumption	kWh	
Other energy carriers	MJ	
Material loss	kg	
VOC emissions	kg	

### Replacement (B4)/Refurbishment (B5)

	Unit	Value
Replacement cycle*		
Electricity consumption	kWh	
Replacement of worn parts		
* Described above if relevant		

### Operational energy (B6) and water consumption (B7)

	Unit	Value
Water consumption	m <sup>3</sup>	
Electricity consumption	kWh	
Other energy carriers	MJ	
Power output of equipment	kW	

### End of Life (C1, C2)

	Unit	Value
Hazardous waste disposed	kg	
Collected as mixed construction waste	kg	
Reuse	kg	
Recycling		
Energy recovery		
To landfill	kg	

### Transport to waste processing (C2)

Type	Capacity utilisation (incl. return) %	Type of vehicle	Distance km	Fuel/Energy consumption	Unit	Value (l/t)
Truck					l/tkm	
Railway					l/tkm	
Boat					l/tkm	
Other Transportation					l/tkm	

## LCA: Results

The LCA results are presented below for the declared unit defined on page 2 of the EPD document.

### System boundaries (X=included, MND=module not declared, MNR=module not relevant)

Product stage				Construction installation stage	User stage								End of life stage				Beyond the system boundaries
Raw materials	Transport	Manufacturing	Transport	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	Deconstruction demolition	Transport	Waste processing	Disposal	Reuse-Recovery-Recycling-potential	
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D	
X	X	X	X														

### Environmental impact

Parameter	Unit	A1	A2	A3	A4
GWP	kg CO <sub>2</sub> -eq	1,77E+01	1,58E-01	1,43E+00	1,20E-01
ODP	kg CFC11 -eq	8,70E-07	3,25E-08	1,61E-07	2,47E-08
POCP	kg C <sub>2</sub> H <sub>4</sub> -eq	3,66E-03	2,48E-05	4,67E-04	1,88E-05
AP	kg SO <sub>2</sub> -eq	5,66E-02	4,08E-04	4,51E-03	3,11E-04
EP	kg PO <sub>4</sub> <sup>3-</sup> -eq	9,91E-03	5,63E-05	8,00E-04	4,29E-05
ADPM	kg Sb -eq	7,92E-05	3,79E-07	8,03E-06	2,87E-07
ADPE	MJ	1,83E+02	2,60E+00	1,58E+01	1,98E+00

GWP Global warming potential; ODP Depletion potential of the stratospheric ozone layer; POCP Formation potential of tropospheric photochemical oxidants; AP Acidification potential of land and water; EP Eutrophication potential; ADPM Abiotic depletion potential for non fossil resources; ADPE Abiotic depletion potential for fossil resources

Reading example: 9,0 E-03 = 9,0\*10<sup>-3</sup> = 0,009

\*INA Indicator Not Assessed

Resource use

Parameter	Unit	A1	A2	A3	A4
RPEE	MJ	3,67E+01	4,71E-02	2,64E+01	3,59E-02
RPEM	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00
TPE	MJ	3,67E+01	4,71E-02	2,64E+01	3,59E-02
NRPE	MJ	1,82E+02	2,68E+00	2,07E+01	2,04E+00
NRPM	MJ	3,48E+01	0,00E+00	0,00E+00	0,00E+00
TRPE	MJ	2,16E+02	2,68E+00	2,07E+01	2,04E+00
SM	kg	2,10E+00	0,00E+00	0,00E+00	0,00E+00
RSF	MJ	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
W	m <sup>3</sup>	4,80E-01	6,32E-04	1,27E-01	4,83E-04

RPEE Renewable primary energy resources used as energy carrier; RPEM Renewable primary energy resources used as raw materials; TPE Total use of renewable primary energy resources; NRPE Non renewable primary energy resources used as energy carrier; NRPM Non renewable primary energy resources used as materials; TRPE Total use of non renewable primary energy resources; SM Use of secondary materials; RSF Use of renewable secondary fuels; NRSF Use of non renewable secondary fuels; W Use of net fresh water

Reading example: 9,0 E-03 =  $9,0 \cdot 10^{-3} = 0,009$

\*INA Indicator Not Assessed

End of life - Waste

Parameter	Unit	A1	A2	A3	A4
HW	kg	2,32E-01	1,43E-06	1,30E-01	1,09E-06
NHW	kg	5,52E+00	2,43E-01	6,05E-01	1,86E-01
RW	kg	INA*	INA*	INA*	INA*

HW Hazardous waste disposed; NHW Non hazardous waste disposed; RW Radioactive waste disposed

Reading example: 9,0 E-03 =  $9,0 \cdot 10^{-3} = 0,009$

\*INA Indicator Not Assessed

End of life - Output flow

Parameter	Unit	A1	A2	A3	A4
CR	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00
MR	kg	0,00E+00	0,00E+00	9,92E-01	0,00E+00
MER	kg	0,00E+00	0,00E+00	5,04E-03	0,00E+00
EEE	MJ	INA*	INA*	INA*	INA*
ETE	MJ	INA*	INA*	INA*	INA*

CR Components for reuse; MR Materials for recycling; MER Materials for energy recovery; EEE Exported electric energy; ETE Exported thermal energy

Reading example: 9,0 E-03 =  $9,0 \cdot 10^{-3} = 0,009$

\*INA Indicator Not Assessed

## Additional Norwegian requirements

### Greenhouse gas emissions from the use of electricity in the manufacturing phase

National production mix from import, low voltage (production of transmission lines, in addition to direct emissions and losses in grid) of applied electricity for the manufacturing process (A3).

Electricity mix	Data source	Amount	Unit
Energy, electricity, Nordic average, hydro: 1 kWh	Østfoldforskning	10,19	g CO <sub>2</sub> -ekv/kWh

### Dangerous substances

The product contains substances given by the REACH Candidate list and the Norwegian priority list that are less than 0,1 % by weight.

### Indoor environment

## Additional environmental information

Key environmental indicators for variants for this EPD: Cradle to Gate analyse from A1 to A3

Variant number	Global warming (kg CO <sub>2</sub> )	Total energy use (MJ)	Share of recycled material in product(%)
D2 Upholstered seat	36,52	548,12	22,81
D2 Upholstered seat and back	44,10	663,05	15,64

## Bibliography

ISO 14025:2010 Environmental labels and declarations - Type III environmental declarations - Principles and procedures.

ISO 14044:2006 Environmental management - Life cycle assessment - Requirements and guidelines.

EN 15804:2012+A1:2013 Environmental product declaration - Core rules for the product category of construction products.

ISO 21930:2017 Sustainability in buildings and civil engineering works - Core rules for environmental product declarations of construction products.

ecoinvent v3, Allocation, cut-off by classification, Swiss Centre of Life Cycle Inventories.

Iversen et al., (2018) eEPD v3.0 - Background information for EPD generator system. LCA.no report number 04.18

Vold et al., (2019) EPD generator for Norsk Industri, Background information for industry application and LCA data, LCA.no report number 06.19.

NPCR Part A: Construction products and services. Ver. 1.0. April 2017, EPD-Norge.

NPCR 026 Part B for Furniture. Ver. 2.0 October 2018, EPD-Norge.

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