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The Norwegian EPD Foundation

## ENVIRONMENTAL PRODUCT DECLARATION

In accordance with ISO 14025

Owner of the declaration	Nordic Comfort Products AS
Program holder and publisher	The Norwegian EPD Foundation
Declaration number	NEPD-1885-804-EN
Issue date	03.10.2019
Valid to	03.10.2024

### S-1500



The S-1500 chair references the textures, colors and crafts of its origin in the North of Norway. The chair-shell is made from 100% recycled plastic from the fish farming industry in the north of Norway, and the chair's subframe is obtained by partially recycled Norwegian steel. The chair is a redesign of Bendt Winge's classic R-48 chair. Also produced by NCP.

## General information

**Product**

S-1500

**Owner of the declaration:**

Nordic Comfort Products AS  
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**General Information**

The Norwegian EPD Foundation  
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**Manufacturer**

Nordic Comfort Products AS



**Place of production:**

Juvikveien 1, 8640 Hemnesberget, Norway.

**Declaration number:** NEPD-1885-804-EN

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

PCR for Seating Solution, NPCR 003:2015

**Management system:**

ISO 14001:2015 , Certificate no. NO-901337  
 ISO 9001:2015 , Certificate no. NO-800578  
 Accredited unit : NEMKO AS , Norway

**Declared unit:**

S-1500 seating chair , with 4 legs.

**Org. No:**

No. 913 861 698

**Declared unit with option:**

S-1500 seating chair with sledge base

**Issue date:**

03.10.2019

**Functional unit:**

Production of one seating solution provided and maintained for a period of 15 years.

**Valid to:**

03.10.2024

**This EPD has been worked out by:**

The declaration has been developed using Furniture EPD Tool Version 1.3.1, Approval: NEPDT04  
 Company specific data collected and registered by:

**Data Collector** Stefan Olsen

Company specific data audited by:

**Data Auditor** Svein-Erik Hjerpbakk

**Comparability:**

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

**Year of study:**

2019

**Verification:**

Independent verification of data, other environmental information and EPD has been carried out in accordance with ISO14024, 8.1.3. and 8.1.4.

Approved

externally



Mie Vold, Senior Research Scientist

(Independent verifier approved by EPD Norway)



Håkon Hauan

Managing Director of EPD-Norway

Key environmental indicators	Unit	Cradle to Gate A1-A3
Global warming	kg CO <sub>2</sub>	9
Total energy use	MJ	109
Amount of recycled materials	%	48 %

## Product

### Product Description and Application

The S-1500 chair has the MØBELFAKTA certificate, and is approved according to EN 16139:2013 nivå 1

### Technical Data

Total weight : 4,2 kg ( packing exluded )

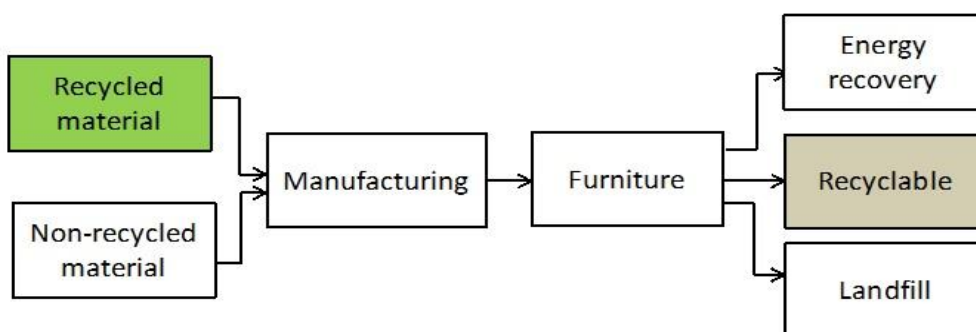
### Market

Europe and USA

### Reference Service Life

15 years

Materials			Recycled material in manufactured product		Recyclable material at end of product life	
Unit	kg	%	%	kg	%	kg
Steel	2,70	63 %	20 %	0,54	100 %	2,70
Polypropylene	1,52	36 %	100 %	1,52	100 %	1,52
Polyethylene	0,05	1 %	0 %	0,00	100 %	0,05
<b>Total</b>	<b>4,27</b>		<b>48 %</b>		<b>100 %</b>	



Product manufactured from 48% recycled material  
 At end of life product contains 100% recyclable material

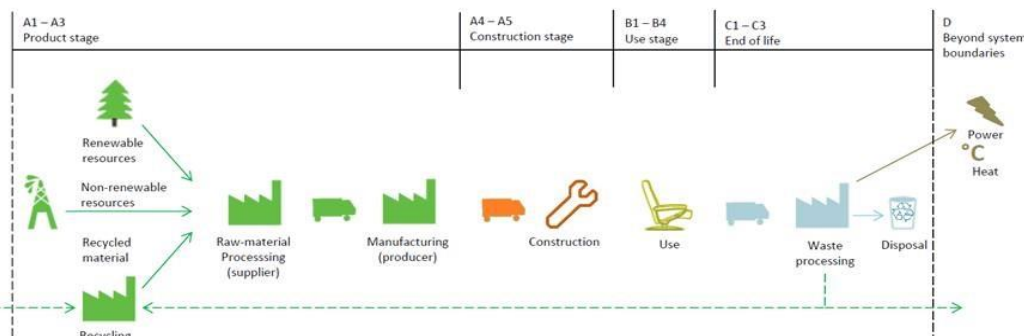
## LCA: Calculation rules

### Declared Unit

S-1500 seating chair with 4 legs.

### System Boundary

Life cycle stages included are described in figure and through the corresponding letter and number designations in the



### Data quality

Specific manufacturing data from 2014 are used. Data from Ecoinvent and Østfoldforskning databases are used as the basis for raw materials and energy carrier production. See[6].

### Cut-off criteria

All major raw materials and all the essential energy is included. The production processes for raw materials and energy flows that are included with very small amounts (<1%) are not included. This cut-off rule does not apply for hazardous materials and substances

### Allocation

Where virgin materials are used, emissions and energy consumption connected with extraction and production are included.

Where recycled materials are used in the product, emissions and energy consumption related to the recycling process are included.

Emissions from incineration are allocated to the product system that uses the recovered energy.

Emissions from incineration of waste are allocated to the product system that uses the recovered energy.

## LCA: Scenarios and additional technical information

Transportation to an average customer in Norway is 800 km (A4: average European lorry > 32 tonnes)

In the end of life stage, the transport distance for waste to waste processing is 72 km (C1). The reuse, recovery and recycling stage is beyond the system boundaries (D). It is assumed that the solution is dismantled and the materials recycled. In the table below Norwegian treatment of industrial waste is calculated. This calculation includes only CO<sub>2</sub> emissions (GWP) in the C-modules. The transport distance to reuse, recovery or recycling varies for each material, but the average distance is 373 km. The vehicles used and associated data are described in detail in [5].

	Material recovery	Energy recovery	Disposal
Aluminium	70,1 %	0,0 %	30 %
Steel	70,1 %	0,0 %	30 %
Plastic	64,3 %	30,8 %	5 %
Cardboard	94,5 %	5,5 %	0 %

## LCA: Results

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

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

Product stage			Construction stage		Use stage				End of life			Beyond the system boundaries
Raw materials	Transport	Manufacturing	Transport	Construction	Maintenance	Repair	Replacement	Operational energy use	Transport	Waste Processing	Disposal	Reuse-recycling potential
A1	A2	A3	A4	A5	B1	B2	B3	B4	C1	C2	C3	D
x	x	x	x	MNR	x	MNR	MNR	MNR	x	x	x	x

### Environmental impact (INA = Indicator Not Assessed)

Parameter	A1	A2	A3	A1-A3	A4	B1	C1	C2	C3	C1-C3	D
GWP	8,2	0,3	0,1	8,7	0,5	0,0	0,0	0,0	0,0	0,0	0,0
ODP	4,6E-07	6,2E-08	2,4E-09	5,2E-07	1,0E-07	0,0	INA	INA	INA	INA	0,0E+00
POCP	3,9E-03	5,5E-05	2,9E-05	4,0E-03	8,9E-05	0,0	INA	INA	INA	INA	0,0E+00
AP	3,4E-02	1,3E-03	5,7E-04	3,5E-02	2,1E-03	0,0	INA	INA	INA	INA	0,0E+00
EP	2,3E-02	3,0E-04	9,7E-05	2,4E-02	4,8E-04	0,0	INA	INA	INA	INA	0,0E+00
ADPM*	9,4E-05	1,0E-06	6,0E-08	9,6E-05	1,7E-06	0,0	INA	INA	INA	INA	0,0E+00
ADPE	82,4	5,4	3,9	91,8	8,8	0,0	INA	INA	INA	INA	0,0

GWP Global warming potential (kg CO<sub>2</sub>-eqv.); ODP Depletion potential of the stratospheric ozone layer (kg CFC11-eqv.); POCP Formation potential of tropospheric photochemical oxidants (kg C<sub>2</sub>H<sub>4</sub>-eqv.); AP Acidification potential of land and water (kg SO<sub>2</sub>-eqv.); EP Eutrophication potential (kg PO<sub>4</sub>-3-eqv.); ADPM Abiotic depletion potential for non fossil resources (kg Sb -eqv.); ADPE Abiotic depletion potential for fossil resources (MJ);

\* Some processes use Ecoinvent 3.0.1. and thus data on renewable resources is omitted. The true ADPM, RPEE, RPEM and TPE may be higher than indicated. This issue will be addressed in a new version of Ecoinvent 3, data from which was not available when this declaration was prepared.

### Resource use (INA = Indicator Not Assessed)

Parameter	A1	A2	A3	A1-A3	A4	B1	C1	C2	C3	C1-C3	D
RPEE*	9,5	0,1	0,2	9,8	0,1	0,0	INA	INA	INA	INA	0,0
RPEM*	1,0	1,7E-02	4,6E-02	1,0	2,7E-02	0,0	INA	INA	INA	INA	0,0
TPE*	10,5	0,1	0,2	10,8	0,1	0,0	INA	INA	INA	INA	0,0
NRPE	90,5	5,5	2,8	98,7	8,9	0,0	INA	INA	INA	INA	0,0
NRPM	0,0	0,0	1,6	1,6	0,0	0,0	INA	INA	INA	INA	0,0
TNRPE	90,5	5,5	4,4	100,4	8,9	0,0	INA	INA	INA	INA	0,0
SM	0,6	0,0	0,0	0,6	0,0	0,0	INA	INA	INA	INA	0,0
RSF	0,0	0,0	0,0	0,0	0,0	0,0	INA	INA	INA	INA	0,0
NRSF	0,0	0,0	0,0	0,0	0,0	0,0	INA	INA	INA	INA	0,0
W	0,0	0,0	0,0	0,0	0,0	0,0	INA	INA	INA	INA	0,0

RPEE Renewable primary energy resources used as energy carrier (MJ); RPEM Renewable primary energy resources used as raw materials (MJ); TPE Total use of renewable primary energy resources (MJ); NRPE Non renewable primary energy resources used as energy carrier (MJ); NRPM Non renewable primary energy resources used as materials (MJ); TNRPE Total use of non renewable primary energy resources (MJ); SM Use of secondary materials (kg); RSF Use of renewable secondary fuels (MJ); NRSF Use of non renewable secondary fuels (MJ); W Use of net fresh water (m3);

### End of life - Waste and Output flow (INA = Indicator Not Assessed)

Parameter	A1	A2	A3	A1-A3	A4	B1	C1	C2	C3	C1-C3	D
HW	6,2E-04	3,0E-06	6,0E-07	6,3E-04	4,9E-06	0,0	INA	INA	INA	INA	0,0
NHW	8,7	0,3	2,5E-02	9,0	0,4	0,0	INA	INA	INA	INA	0,0
RW	0,0	0,0	0,0	0,0	0,0	0,0	INA	INA	INA	INA	0,0
CR	0,0	0,0	0,0	0,0	0,0	0,0	INA	INA	INA	INA	0,0
MR	7,0E-04	0,0	0,0	7,0E-04	0,0	0,0	INA	INA	INA	INA	0,0
MER	0,0	0,0	0,0	0,0	0,0	0,0	INA	INA	INA	INA	0,0
EEE	0,0	0,0	0,0	0,0	0,0	0,0	INA	INA	INA	INA	0,0
ETE	0,0	0,0	0,0	0,0	0,0	0,0	INA	INA	INA	INA	0,0

HW Hazardous waste disposed (kg); NHW Non hazardous waste disposed (kg); RW Radioactive waste disposed (kg); CR Components for reuse (kg); MR Materials for recycling (kg); MER Materials for energy recovery (kg); EEE Exported electric energy (MJ); ETE Exported thermal energy ( MJ);

## Specific Norwegian requirements

### Electricity

The electricity is assumed to be a mix from the Nord Pool mix in the Nordic countries. The Nordic Production mix for electricity is based on 2011 data.

Greenhouse gas emissions 0,0427 kg CO<sub>2</sub> eq/MJ ( Nordic Production mix )

### Dangerous Substances

None of the following substances have been added to the product : Substances on the REACH Candidate list of substances of very high concern, substances on the Norwegian Priority list and substances that lead to the product being classified as hazardous waste. The chemical content of the product complies with regulatory levels as given in the Norwegian Product Regulations.

### Indoor Environment

Our furniture doesn't contain any constituent parts that affect indoor climate.

Key environmental indicators for variant in the S-1500 series : Cradle to gate analyse from A1 to A3 ( Packing included )

Variant model number	Global Warming (kg CO <sub>2</sub> )	Total energy use ( MJ )	Share of recycled material in product
S-1500 with sledge base	9	118	46 %

[1] NS-EN ISO 14025:2006, Environmental labels and declarations-Type III environmental declarations-Principles and procedures.




[2] NS-EN ISO 14044:2006, Environmental management - Life cycle assessment - Requirements and guidelines

[3] EN 15804:2012 + A1:2013 Sustainability of construction works - Environmental product declaration - Core rules for the product category of construction products

[4] Product category rules (PCR) for preparing an environmental product declaration for: Product Group Seating Solution NPCR 003: 2015; Product Group Plate Furniture NPCR 021: 2012

[5] Raadal, H. L., Modahl, I. S., Lyng, K. A. (2009). Klimaregnskap for avfallshåndtering, Fase I og II. OR 18.09. ISBN : 978-82-7520-611-2, 82-7520-611-1

[6] Brekke, A., Møller, H., Baxter, J., Askham, C. (2014). Verktøy - miljødeklarasjon for møbel Dokumentasjon som grunnlag for verifisering, Ostfold Research

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