



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	ÞÓÚÖËHGG G ÖÞ
Issue date	FÍ ËË ËËFÍ
Valid to	FÍ ËË ËËGG

Rio Z chair

Product

Nordic Comfort Products AS

Manufacturer



Rio Z complements the Rio family. The chair has a seat height of 45 cm and has smart suspension function for table. Rio Z comes in 7 different colors , wich are black, gray, red, yellow, mint green, blue and white. Rio Z is produced in environmentally friendly materials and is recyclable.

General information

Product

Rio Z seating chair

General Information

The Norwegian EPD Foundation
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Declaration number: POUØFHGGI G EP

This declaration is based on Product Category Rules:

PCR for seating solution , NPCR 003:2015

Declared unit:

Rio Z seating chair with steel base

Declared unit with option:

No options

Functional unit:

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

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

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.

externally



Mie Vold, Senior Research Scientist

(Independent verifier approved by EPD Norway)

Owner of the declaration:

Nordic Comfort Products AS
Contact person : Svein-Erik Hjerpbakk
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Manufacturer

Nordic Comfort Products AS



Place of production:

Juvikveien 1 , 8640 Hemnesberget , Norway

Management system:

ISO 14001-2004 , Certificate no. NO-901337
ISO 9001-2008 , Certificate no. NO-8000578
Accredited unit : NEMKO AS , Norway

Org. No:

No. 913861698

Issue date:

FI 14 1017

Valid to:

FI 14 1017

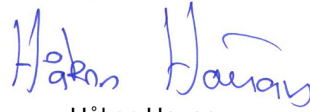
Comparability:

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

Year of study:

2017

Approved



Håkon Hauan

Managing Director of EPD-Norway

Key environmental indicators	Unit	Cradle to Gate A1-A3
Global warming	kg CO ₂	20
Total energy use	MJ	287
Amount of recycled materials	%	1 %

Product

Product Description and Application

The Rio Z chair has the MØBELFAKTA certificate and is approved according to NS-EN 16139:2013 level 1, NS-EN 1022:2005, NS-EN 1729-2:2012, size 7.

Technical Data

Total weight : 5,8 kg

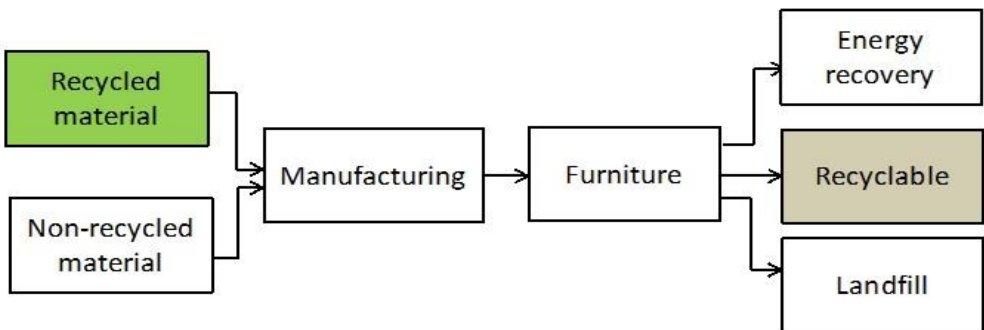
Market

Europe

Reference Service Life

15 years

Materials			Recycled material in manufactured product		Recyclable material at end of product life	
Unit	kg	%	%	kg	%	kg
Steel	3,67	61 %	0 %	0,00	100 %	3,67
Polypropylene	2,09	34 %	0 %	0,00	100 %	2,09
Polyethylene	0,20	3 %	0 %	0,00	100 %	0,20
Packaging	0,10	2 %	76 %	0,08	100 %	0,10
Total	6,06		1 %		100 %	



Product manufactured from 1% recycled material

At end of life product contains 100% recyclable material

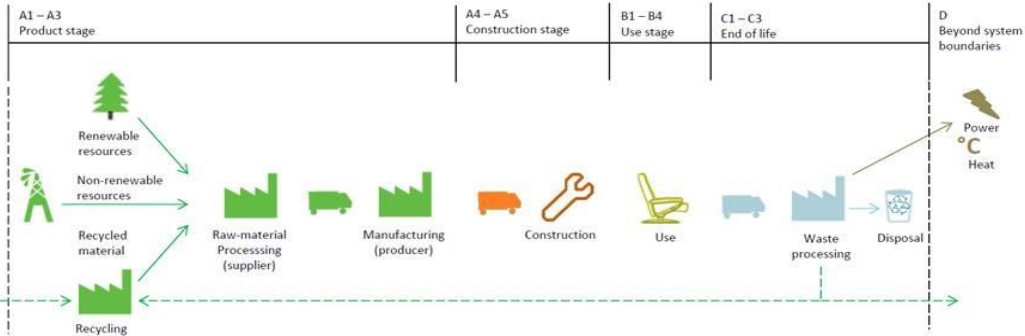
LCA: Calculation rules

Declared Unit

Rio Z seating chair with steel base

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 or combusted according to general Norwegian treatment of industrial waste (see the table below). This calculation includes only CO₂ 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-recovery-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	16,0	2,9	0,7	19,6	0,8	0,0	0,5	4,6	1,1E-02	5,1	-4,0
ODP	7,3E-07	4,5E-07	2,2E-08	1,2E-06	1,4E-07	0,0	INA	INA	INA	INA	-9,6E-09
POCP	7,2E-03	8,7E-04	1,4E-04	8,3E-03	1,3E-04	0,0	INA	INA	INA	INA	-4,1E-03
AP	3,9E-02	5,7E-03	6,4E-04	4,5E-02	7,1E-04	0,0	INA	INA	INA	INA	-2,2E-03
EP	0,1	1,6E-02	2,6E-03	0,1	3,1E-03	0,0	INA	INA	INA	INA	-1,5E-02
ADPM*	1,8E-04	4,2E-06	4,3E-07	1,8E-04	2,3E-06	0,0	INA	INA	INA	INA	-3,1E-06
ADPE	261,0	44,4	16,9	322,4	11,7	0,0	INA	INA	INA	INA	-104,1

GWP Global warming potential (kg CO₂-eqv.); ODP Depletion potential of the stratospheric ozone layer (kg CFC11-eqv.); POCP Formation potential of tropospheric photochemical oxidants (kg C₂H₄-eqv.); AP Acidification potential of land and water (kg SO₂-eqv.); EP Eutrophication potential (kg PO₄-3-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*	13,2	6,0	1,7	20,9	0,2	0,0	INA	INA	INA	INA	-0,4
RPEM*	1,8	2,2	0,8	4,7	0,1	0,0	INA	INA	INA	INA	-0,4
TPE*	15,0	8,2	2,5	25,6	0,2	0,0	INA	INA	INA	INA	-0,8
NRPE	196,2	57,4	12,4	266,1	11,9	0,0	INA	INA	INA	INA	-102,6
NRPM	83,0	0,0	6,5	89,5	0,0	0,0	INA	INA	INA	INA	0,0
TNRPE	279,2	57,4	19,0	355,6	11,9	0,0	INA	INA	INA	INA	-102,6
SM	0,0	0,0	0,1	0,1	0,0	0,0	INA	INA	INA	INA	-2,8
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	7,2E-04	1,1E-04	4,0E-06	8,4E-04	7,3E-06	0,0	INA	INA	INA	INA	0,0
NHW	14,9	1,2	0,1	16,2	0,6	0,0	INA	INA	INA	INA	-0,2
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	0,0	0,0	0,0	0,0	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 CO₂ eqv/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 Regulation

Indoor Environment




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

Climate Declaration

Not prepared

Bibliography

- [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, Østfold Research

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