

ENVIRONMENTAL PRODUCT DECLARATION



In accordance with ISO 14025

Owner of the declaration
Program holder and publisher
Declaration number
Issue date
Valid to

Flokk AS
The Norwegian EPD Foundation
NEPD-342-231-EN
22.07.2015
22.07.2020

RH Extend 220 with armrests 8S Class A

Product



HÅG · RH · BMA · OFFECCT · RBM

Flokk AS

Manufacturer



General information

Product

RH Extend 220 with armrests 8S Class A

General Information

The Norwegian EPD Foundation
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Declaration number:

NEPD-342-231-EN

This declaration is based on Product Category Rules:

PCR for Seating Solution, NPCR 003 extended version 2013, in accordance with recommendations by the Norwegian EPD Foundation.

Declared unit:

One office chair: RH Extend 220

Declared unit with option:

Option:
 High back
 Armrests 8S Class A

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 1.1.2, Approval: NEPD04
 Company specific data collected and registered by:

Laura Fouilland

Company specific data audited by:

Atle Thiis-Messel

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:

Flokk AS
 Contact person: Atle Thiis-Messel
 Phone: + 47 982 56 830
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Manufacturer

Flokk AS

Place of production:

Vallgatan 1, 571 23 Nässjö, Sweden

Management system:

ISO 14001, Certificate No.151496-2014-AE-NOR-NA
 From the accredited unit: DNV Certification As, Norway.
 ISO 9001, Certificate No.151495-2014-AQ-NOR-NA
 From the accredited unit: DNV Certification As, Norway.

Org. No:

No 928 902 749

Issue date:

22.07.2015

Valid to:

22.07.2020

Comparability:

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

Year of study:

2015

Approved

Dagfinn Malnes
 Managing Director of EPD-Norway

Key environmental indicators	Unit	Cradle to Gate A1-A3
Global warming	kg CO ₂	87
Total energy use	MJ	2130
Amount of recycled materials	%	35%

Product

Product Description and Application

RH Extend is a task chair designed to give your body the best possible support and relaxation, while at the same time encouraging you to move around. It is easily fitted for everyone, whatever your physical assets. This makes it a one-person chair as well as a chair for the landscaped office. In RH Extend the 2PP™ dynamics bring active sitting to one and to all. An easy adjustment is all it takes. RH Extend 220 has a large back and comes as standard with castors for carpeted floors and base in grey or black lacquered aluminium. RH Extend is available with a low back as well. In this declaration, RH Extend 220 is studied with armrests 8S Class A.

Technical Data

Total Weight: 22,6 kg
 EN-1335 / BS-5459 tested & approved
 Greenguard and Möbelfakta certified

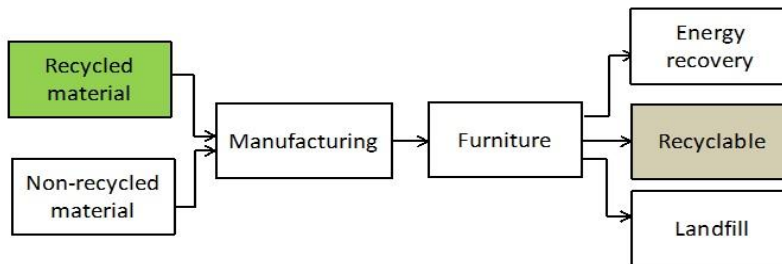
Market

Worldwide

Reference Service Life

15 years

Materials	g	%
Steel	10343	45,7 %
Plastic - polypropylene (PP)	4793	21,2 %
Aluminium	3705	16,4 %
Plastic - polyamide	1210	5,3 %
Polyurethane (PUR foam)	1442	6,4 %
Plastic - polyethylene (HD/LD-PE)	258	1,1 %
Plastic - polyoxymethylene (POM)	452	2,0 %
Plastic - acrylonitrile butadiene styrene	117	0,5 %
Textiles	288	1,3 %
Plastic - rubber	11	0,05%
Total product	22619	100%
Packaging - cardboard	3340	
Packaging - polyethylene	140	
Packaging - polystyrene	233	
Total product with packaging	26332	



Materials	Recycled share in material	Recycled share in product		Recyclable potential of material	Recyclable potential of product	
		g	%		g	%
Unit	%	g	%	%	g	%
Steel	18%	1862	7%	100%	10343	39%
Plastic - polypropylene	29%	1390	5%	100%	4793	18%
Aluminium	90%	3331	13%	100%	3705	14%
Plastic - polyamide	0%	0	0%	100%	1210	5%
Polyurethane (PUR foam)	0%	0	0%	0%	0	0%
Plastic - polyethylene	0%	0	0%	100%	258	1%
Plastic - polyoxymethylene	0%	0	0%	100%	452	2%
Plastic - acrylonitrile butadiene	0%	0	0%	100%	117	0%
Textiles	0%	0	0%	0%	0	0%
Plastic - rubber	0%	0	0%	0%	0	0%
Packaging - cardboard	76%	2538	10%	100%	3340	13%
Packaging - polystyrene	0%	0	0%	100%	140	1%
Packaging - polyethylene	0%	0	0%	100%	233	1%
Total product		9121	35%		24591	93%

Product manufactured from 35% recycled material (packaging included)

At end of life product contains 93% recyclable material

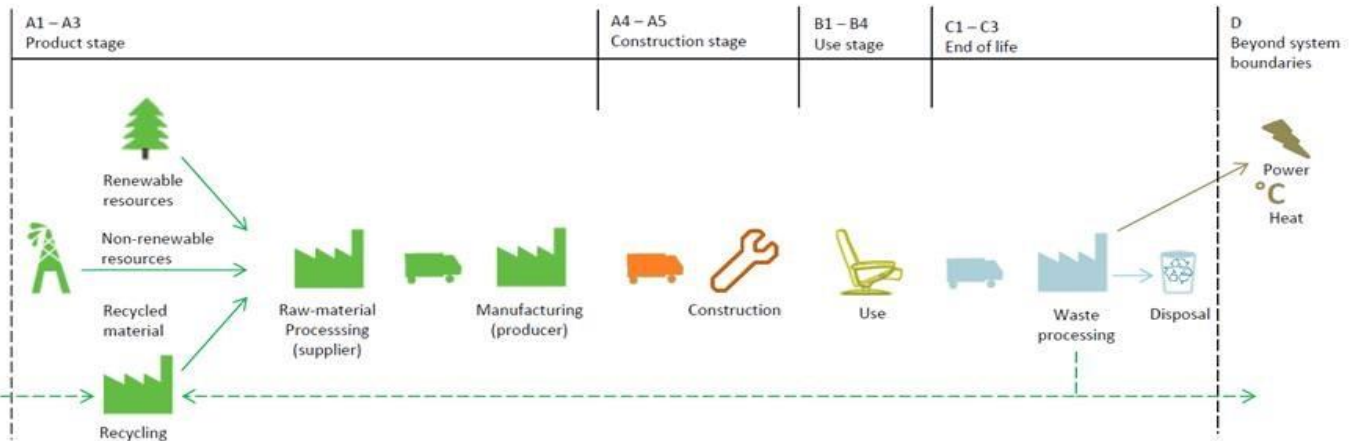
LCA: Calculation rules

Declared unit:

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

System boundary:

Life cycle stages included are described in figure and through the corresponding letter and number designations in the declaration (see figure below)



Data quality:

Specific manufacturing data from 2014 are used. Data from Ecoinvent 3.0.1. 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 Copenhagen is 360 km (A4: average European lorry > 32 tonnes)

The use stage is represented by a scenario and includes vacuum cleaning of textile once a month. The PCR does not provide detailed guidelines for what should be included in the use stage. 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 the general Norwegian treatment of industrial waste (see the table below). The transport distance to reuse, recovery or recycling is varying 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 Accessible)

Parameter	A1	A2	A3	A1-A3	A4	B1	C1	C2	C3	C1-C3	D
GWP	84,0	1,4	2,0	87,4	1,0	6,1E-03	2,2	21,0	0,1	23,3	-16,8
ODP	2,7E-05	9,5E-08	9,9E-08	2,7E-05	7,6E-08	1,9E-10	INA	INA	INA	INA	-3,6E-07
POCP	3,1E-02	5,8E-04	3,9E-04	3,2E-02	1,5E-04	1,2E-06	INA	INA	INA	INA	-1,6E-02
AP	0,2	2,0E-03	7,0E-03	0,2	1,1E-03	5,0E-06	INA	INA	INA	INA	-1,2E-02
EP	0,4	1,6E-02	9,7E-03	0,4	4,3E-03	3,4E-05	INA	INA	INA	INA	-5,8E-02
ADPM*	6,4E-04	2,8E-06	3,1E-06	6,5E-04	3,3E-06	2,0E-08	INA	INA	INA	INA	-1,7E-05
ADPE	1229,0	20,3	24,4	1273,6	16,1	8,2E-02	INA	INA	INA	INA	-409,2

* 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.

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);

Resource use (INA=Indicator Not Accessible)

Parameter	A1	A2	A3	A1-A3	A4	B1	C1	C2	C3	C1-C3	D
RPEE*	12,5	0,0	2,7	15,2	0,0	9,3E-02	INA	INA	INA	INA	-2,2
RPEM*	32,7	0,1	0,4	33,2	0,1	0,0	INA	INA	INA	INA	-5,7
TPE*	45,3	0,1	3,1	48,4	0,1	9,3E-02	INA	INA	INA	INA	-7,9
NRPE	2077,1	20,6	28,4	2126,1	16,2	7,9E-02	INA	INA	INA	INA	-403,2
NRPM	330,5	0,0	0,0	330,5	0,0	0,0	INA	INA	INA	INA	0,0
TNRPE	2407,6	20,6	28,4	2456,6	16,2	8,8E-02	INA	INA	INA	INA	-403,2
SM	9,4	0,0	0,0	9,4	0,0	0,0	INA	INA	INA	INA	-7,8
RSF	0,0	0,0	0,0	0,0	0,0	0,0	INA	INA	INA	INA	0,0
NRSF	-11,6	0,0	0,0	-11,6	0,0	4,0E-02	INA	INA	INA	INA	0,0
W	16,1	4,2E-05	14,9	31,0	4,3E-05	0,0	INA	INA	INA	INA	-67,5

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 Accessible)

Parameter	A1	A2	A3	A1-A3	A4	B1	C1	C2	C3	C1-C3	D
HW	0,2	2,4E-05	4,7E-05	0,2	2,0E-05	5,8E-06	INA	INA	INA	INA	-0,2
NHW	49,4	1,2	0,5	51,1	1,4	7,6E-04	INA	INA	INA	INA	-1,5
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	2,9E-03	0,0	0,0	2,9E-03	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 following data from ecoinvent v3 (June 2012) for Norwegian production mix included import, low voltage is used; Energy/Electricity country mix/Low voltage/Market: Electricity, low voltage {NO} market for | Alloc Def, U. Production of transmission lines, in addition to direct emissions and loss in grid are included. Characterisation factors stated in EN 15804:2012+A1:2013 are used. This gives following greenhouse gas emissions: 24 g CO₂-eq/kWh.

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 (of '17.12.2014) substances on the Norwegian Priority list (published 04.12.2014) 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

[RH Extend Greenguard certificate](#)

Climate declaration

Not relevant

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] PCR for seating solution: PRODUCT-CATEGORY RULES(PCR) for preparing an environmental product declaration (EPD) for Product Group "Seating solution", PCR 2008:NPCR 003, extended version
- [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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