



ENVIRONMENTAL PRODUCT DECLARATION

In accordance with ISO 14025 ^[1]

Owner of the declaration

Program holder and publisher

Declaration number

Issue date

Valid to

Flokk AS

The Norwegian EPD Foundation

NEPD-1244-397-EN

25.01.2017

25.01.2022

RBM Noor 6050#)

& RBM 6060/65-6070/75-6080/85-6090/95, page 6
Product

Flokk AB

Manufacturer

Flokk

HÅG • RH • BMA • OFFECCT • RBM



General information

Product

RBM Noor 6050

General Information

The Norwegian EPD Foundation
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Declaration number:

NEPD-1244-397-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. See [3]

Declared unit:

One canteen chair, with plastic shell and steel tube legs

Declared unit with option:

No option

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 1.2.1, Approval: NEPD04
 Company specific data collected and registered by:
Laura Fouilland
 Company specific data audited by:
Carl Peter Aaser

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. See [2]

externally

Mie Vold, Senior Research Scientist
 (Independent verifier approved by EPD Norway)

Owner of the declaration:

Flokk AS
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Manufacturer

Flokk AB

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:

25.01.2017

Valid to:

25.01.2022

Comparability:

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

Year of study:

2016

Approved

Håkon Hauan
 Managing Director of EPD-Norway

Key environmental indicators for RBM Noor 6050	Unit	Cradle to Gate A1-A3
Global warming	kg CO ₂	16,3
Total energy use	MJ	268
Amount of recycled materials	%	21 %

Product

Product Description and Application

RBM Noor is a contemporary classic that brings life to rooms. A collection of meeting, conference and canteen chairs with high ergonomic comfort, adding vitality to working spaces and sociable places. RBM Noor collection presents a wide range of colourful chairs easily combinable with every purpose, room or environment.

A result of an innovative design collaboration between the designers: Form Us With Love, StokkeAustad, Susanne Grønlund/Grønlund Design and Flokk design team.

RBM Noor 6050 model studied in this declaration comes with tubular legs and polypropylene shell.

Technical Data

Total Weight: 5,2kg (packaging excluded)
 GREENGUARD and Möbelfakta certified
 EN 16139 and EN 1729 certified

Market

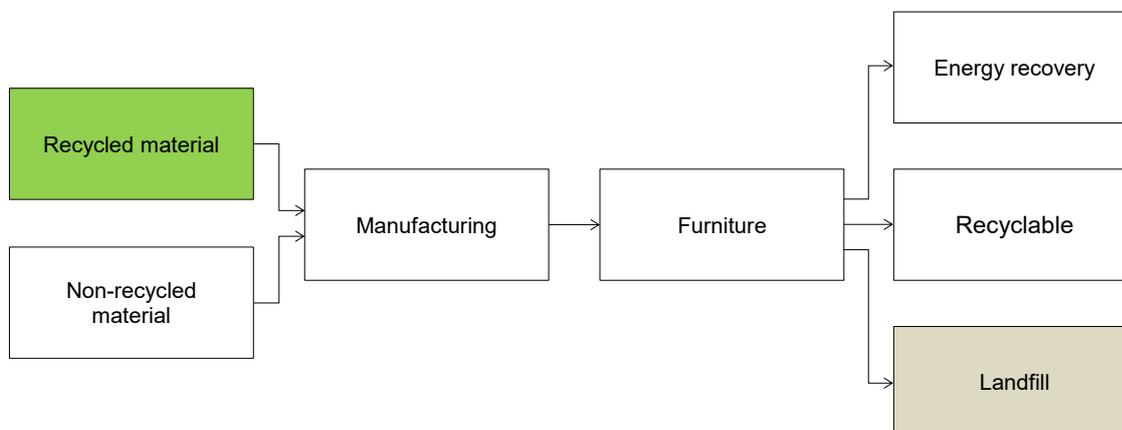
Worldwide

Reference Service Life

15 years

Materials for RBM Noor 6050			Recycled share in product		Recyclable potential of product		
Unit		g	%	g	%	g	%
Metal	Steel	2 658	51,3 %	611	23 %	2 658	100 %
Plastic	Polypropylene (PP)	2 511	48,5 %	0	0 %	2 511	100 %
Plastic	Polyethylene (HD/LD-PE)	8	0,2 %	0	0 %	8	100 %
Total product		5 177	100 %	611	12 %	5 177	100 %

Packaging	Cardboard	820		623	76 %	820	100 %
Packaging	Paper	2		0	0 %	2	100 %
Total product with packaging		5 999		1 235	21 %	5 999	100 %



Product manufactured from 21% recycled material (packaging included)
 At end of life the product contains 100% recyclable material (packaging included)

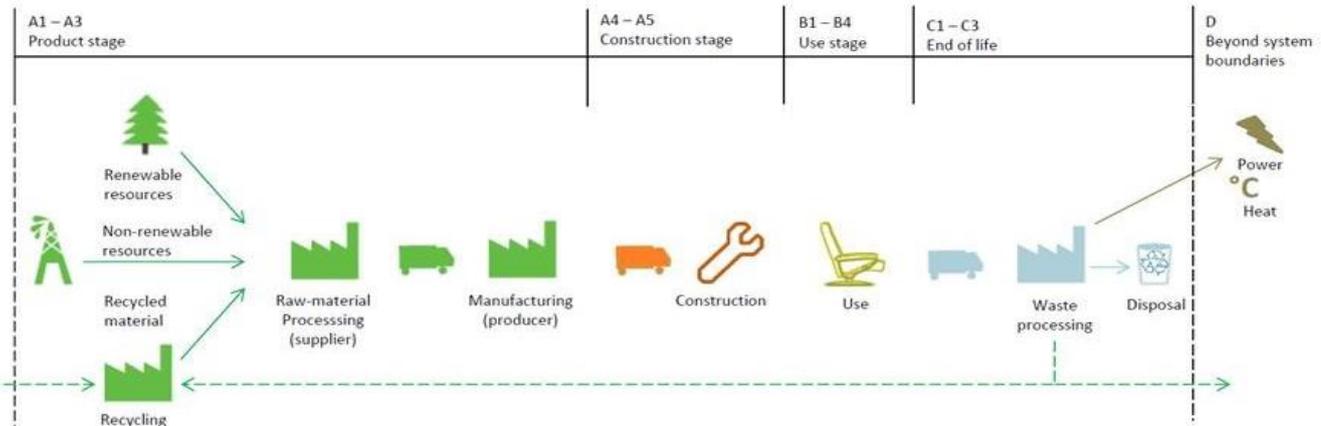
LCA: Calculation rules

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 [5].

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 [3] 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 [4].

	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	16,2	0,1	9,5E-03	16,3	0,2	6,1E-03	0,5	5,5	8,0E-03	6,0	-4,6
ODP	9,9E-07	1,3E-08	2,4E-10	1,0E-06	3,4E-08	1,9E-10	INA	INA	INA	INA	-7,7E-08
POCP	6,0E-03	1,2E-05	4,7E-06	6,0E-03	3,2E-05	1,2E-06	INA	INA	INA	INA	-4,7E-03
AP	3,2E-02	5,9E-05	1,1E-04	3,2E-02	1,6E-04	5,0E-06	INA	INA	INA	INA	-3,1E-03
EP	0,1	2,8E-04	1,0E-04	0,1	7,4E-04	3,4E-05	INA	INA	INA	INA	-1,6E-02
ADPM*	1,0E-04	1,5E-07	8,3E-07	1,0E-04	4,0E-07	2,0E-08	INA	INA	INA	INA	-8,4E-06
ADPE	305,7	1,0	0,1	306,8	2,8	8,2E-02	INA	INA	INA	INA	-119,8

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*	24,5	1,6E-02	4,1	28,7	4,3E-02	9,3E-02	INA	INA	INA	INA	-0,6
RPEM*	7,4	4,9E-03	5,4E-03	7,5	1,3E-02	0,0	INA	INA	INA	INA	-1,3
TPE*	32,0	2,1E-02	4,1	36,1	0,1	9,3E-02	INA	INA	INA	INA	-1,9
NRPE	237,9	1,1	0,1	239,1	2,9	7,9E-02	INA	INA	INA	INA	-117,9
NRPM	100,1	0,0	4,2E-04	100,1	0,0	0,0	INA	INA	INA	INA	0,0
TNRPE	338,0	1,1	0,1	339,1	2,9	8,8E-02	INA	INA	INA	INA	-117,9
SM	1,3	0,0	1,6E-13	1,3	0,0	0,0	INA	INA	INA	INA	-2,0
RSF	0,0	0,0	1,9E-06	1,9E-06	0,0	0,0	INA	INA	INA	INA	0,0
NRSF	0,0	0,0	0,0	0,0	0,0	4,0E-02	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	8,0E-04	6,1E-07	1,7E-06	8,0E-04	1,6E-06	5,8E-06	INA	INA	INA	INA	0,0
NHW	10,1	0,1	1,5E-02	10,2	0,3	7,6E-04	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	7,9E-04	0,0	1,5E-04	9,5E-04	0,0	0,0	INA	INA	INA	INA	0,0
MER	0,0	0,0	2,3E-06	2,3E-06	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

Electricity purchased by Flokk for its production sites in Sweden and Norway comes with a guarantee of origin for Nordic Hydropower.

Therefore the electricity mix used in this EPD is: Energy, electricity, hydro, Nordic average.

This gives following greenhouse gas emissions: 2,8 g CO₂-eq/kWh

Dangerous Substances

None of the following substances have been added to the product: Substances on the Candidate list of substances of very high concern (published in accordance with Article 59(10) of the REACH Regulation), 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

[Greenguard certificate](#)

Additional environmental information

Key environmental indicators for variants in the RBM Noor: Cradle to Gate analyse from A1 to A3 (Packaging included)

Variant model number	Global warming (kg CO ₂)	Total energy use (MJ)	Share of recycled material in product
RBM Noor 6055	10,3	263	21 %
RBM Noor 6060	19,4	315	18 %
RBM Noor 6065	13,4	310	19 %
RBM Noor 6070	31,9	589	50 %
RBM Noor 6075	25,9	584	51 %
RBM Noor 6080	16,7	335	43 %
RBM Noor 6085	10,7	330	44 %
RBM Noor 6090	22,9	368	22 %
RBM Noor 6095	16,9	363	22 %
Additional option:	Global warming (kg CO₂)	Total energy use (MJ)	Share of recycled material in product
Full upholstery (with Twill fabric)	6,0	79	0 %
Seat upholstery (with fame fabric)	4,5	70	0 %
Seat and back upholstery (with fame fabric)	9,3	144	0 %
Armrests	5,8	73	0 %

Bibliography

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

[2] ISO 14024:1999, Environmental labels and declarations - Type I environmental labelling - Principles and procedures

[3] 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

[4] 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

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

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