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The Norwegian EPD Foundation

ENVIRONMENTAL PRODUCT DECLARATION

in accordance with ISO 14025, ISO 21930 and EN 15804

Owner of the declaration:	Flokk Holding AS - RH, RBM and BMA
Program operator:	The Norwegian EPD Foundation
Publisher:	The Norwegian EPD Foundation
Declaration number:	NEPD-2305-1053-EN
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ECO Platform reference number:	-
Issue date:	09.07.2020
Valid to:	09.07.2025

RH Mereo 300

Flokk Holding AS - RH, RBM and BMA

www.epd-norge.no

General information

Product:

RH Mereo 300

Owner of the declaration:

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Manufacturer:

Flokk Holding AS - RH, RBM and BMA

Declaration number:

NEPD-2305-1053-EN

Place of production:

Flokk Holding AS, Vallgatan 1, 571 23 Nässjö, Sweden

ECO Platform reference number:

Management system:

ISO 14001, Certificate No. 1897 ISO 9001, Certificate No. 1896 ISO 50001, Certificate No. 1907 From the accredited unit: Kiwa Teknologisk Institutt Sertifiesering AS

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:

No 925 902 749

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: 09.07.2020

Valid to: 09.07.2025

Declared unit:

1 Pcs RH Mereo 300

Year of study:

2020

Declared unit with option:

A1,A2,A3,A4

Comparability:

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

Functional unit:

Author of the Life Cycle Assessment:

The declaration is developed using eEPD v4.0 from LCA.no
Approval:
Company specific data are:

Collected/registered by:	Laura Fouilland
Internal verification by:	Patrycja Stasiak

Verification:

Independent verification of data, other environmental information and the declaration according to ISO14025:2010, § 8.1.3 and § 8.1.4

Third party verifier:

Sign

Seniorforsker Erik Svanes

(Independent verifier approved by EPD Norway)

Approved:

Sign

Håkon Hauan
Managing Director of EPD-Norway

Key environmental indicators	Unit	Cradle to gate A1 - A3
Global warming	kg CO2 eqv	85,44
Total energy use	MJ	1287,10
Amount of recycled materials	%	57,70

Product

Market:

Worldwide

Product description:

RH Mereo 300 has a large square back and comes as standard with castors for soft floors and base in black lacquered aluminium and plastic in black colour. It can also be enhanced with a range of options and accessories. User-friendly levers for adjustments with intuitive shapes and placement. Easy to individually adjust the chair.

Product specification

Frictionless tilt mechanism. Infinitely adjustable and can be locked in chosen position. Separately adjustable backrest angle for support in any position.
In this declaration, RH Mereo 300 (8313) with Armrests 8T, no headrest and Xtreme textile by Camira is studied.

Technical data:

Total weight with packaging: 28,5kg
Total weight without packaging: 21,6kg
Seat width/depth: 410 mm/ 465 mm
Back height/width: 400 mm/630 mm
Seat height: 410-550 mm
Base: Ø660 mm Black aluminium
Castors: Ø65 mm for carpeted floors
Plastic colour: Black

Reference service life, product

15 years

Reference service life, building

Materials	kg	%	Recycled share in material (kg)	Recycled share in material (%)
Metal - Aluminium	8,20	37,99	7,69	93,83
Metal - Steel	6,02	27,88	1,21	20,12
Textile - Polyester (PE)	0,25	1,18	0,25	100,00
Textile - Wool	0,00	0,02	0,00	0,00
Plastic - Polyurethane (PUR)	1,47	6,80	0,00	0,00
Plastic - Acrylonitrile butadiene styrene (ABS)	0,19	0,89	0,00	0,00
Plastic - Polypropylene (PP)	4,13	19,12	2,34	56,70
Plastic - Polyoxymethylene (POM)	0,35	1,64	0,00	0,00
Rubber, synthetic	0,01	0,05	0,00	0,00
Plastic - Nylon (PA)	0,24	1,12	0,00	0,00
Plastic - Polyamide with glass fibre (PAGF30)	0,62	2,89	0,00	0,00
Plastic - Polyethylene (HDPE)	0,09	0,43	0,00	0,00

Packaging	kg		Recycled share in material (kg)	Recycled share in material (%)
Packaging - Cardboard	6,91		5,27	76,30

LCA: Calculation rules

Declared unit:

1 Pcs RH Mereo 300

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.

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.

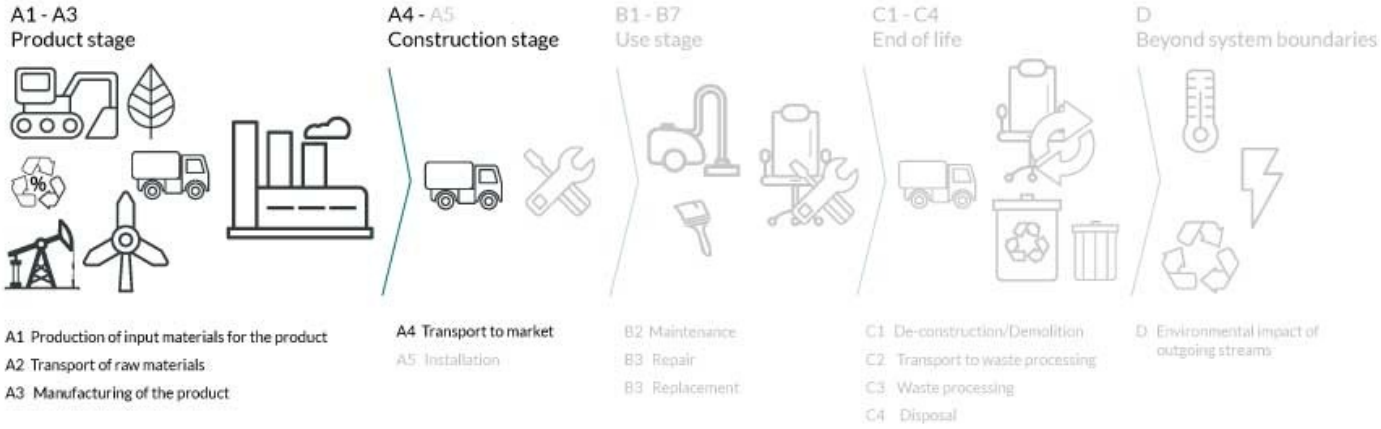
Data quality:

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 - Polyethylene (HDPE)	ecoinvent 3.4	Database	2015
Plastic - Polyoxymethylene (POM)	ecoinvent 3.4	Database	2015
Plastic - Polypropylene (PP)	ecoinvent 3.4	Database	2015
Plastic - Polyurethane (PUR)	ecoinvent 3.4	Database	2015
Rubber, synthetic	ecoinvent 3.4	Database	2015
Plastic - Nylon (PA)	Østfoldforskning	Database	2015
Plastic - Acrylonitrile butadiene styrene (ABS)	PlasticsEurope	EPD	2015
Metal - Aluminium	ecoinvent 3.3	Database	2016
Metal - Steel	ecoinvent 3.3	Database	2016
Metal - Steel	ecoinvent 3.4	Database	2017
Metal coating - Powder coating on aluminium	ecoinvent 3.4	Database	2017
Metal coating - Powder coating on steel	ecoinvent 3.4	Database	2017
Packaging - Cardboard	ecoinvent 3.4	Database	2017
Plastic - Polyamide with glass fibre (PAGF30)	ecoinvent 3.4	Database	2017
Textile - Polyester (PE)	ecoinvent 3.4	Database	2017
Textile - Wool	ecoinvent 3.4	Database	2017

System boundary:

Life cycle stages included are described in figure and through the corresponding letter and number designation in the declaration.



Additional technical information:

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

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

Transport to an average customer in Copenhagen is 360km (A4: Truck, over 32 tonnes, EURO 5)

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 5	360	0,022823	l/tkm	8,22
Railway					l/tkm	
Boat					l/tkm	
Other Transportation					l/tkm	

Assembly (A5)

.	Unit	Value
Auxiliary	kg	
Water consumption	m^3	
Electricity consumption	kWh	
Other energy carriers	MJ	
Material loss	kg	
Output materials fr ste 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^3	
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^3	
Electricity consumption	kWh	
Other energy carriers	MJ	
Power output of equipment	kW	

End of Life (C1, C

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

Scenarios after A1-A4 are not included

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

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 bondaries
Raw materials	Transport	Manufacturing	Transport	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction 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	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	.	MND

Environmental impact

Parameter	Unit	A1	A2	A3	A4
GWP	kg CO_2 -eq	8,46E+01	8,05E-01	8,01E-02	8,95E-01
ODP	kg CFC11 -eq	2,79E-06	9,30E-08	2,01E-09	1,74E-07
POCP	kg C_2H_4-eq	2,70E-02	1,29E-04	3,91E-05	1,45E-04
AP	kg SO_2 -eq	3,69E-01	2,77E-03	8,60E-04	2,91E-03
EP	kg PO_4^{3-} -eq	5,74E-02	4,54E-04	3,67E-04	4,88E-04
ADPM	kg Sb -eq	3,03E-03	1,06E-06	6,89E-06	2,02E-06
ADPE	MJ	9,13E+02	1,25E+01	5,18E-01	1,40E+01

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*10-3 = 0,009
*INA Indicator Not Assessed

Resource use

Parameter	Unit	A1	A2	A3	A4
RPEE	MJ	1,53E+02	2,27E-01	3,42E+01	2,54E-01
RPEM	MJ	4,01E+01	0,00E+00	0,00E+00	0,00E+00
TPE	MJ	1,65E+02	2,27E-01	3,42E+01	2,54E-01
NRPE	MJ	1,09E+03	1,29E+01	6,18E-01	1,45E+01
NRPM	MJ	1,47E+02	0,00E+00	0,00E+00	0,00E+00
TRPE	MJ	1,23E+03	1,29E+01	6,18E-01	1,45E+01
SM	kg	1,68E+01	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^3	8,99E-01	3,02E-03	5,01E-04	3,41E-03

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*10-3 = 0,009
*INA Indicator Not Assessed

End of life - Waste

Parameter	Unit	A1	A2	A3	A4
HW	kg	6,27E-02	6,11E-06	1,44E-05	7,70E-06
NHW	kg	4,90E+01	1,15E+00	1,27E-01	1,31E+00
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*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	0,00E+00	0,00E+00
MER	kg	0,00E+00	0,00E+00	0,00E+00	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*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).

Dangerous substances

The product contains no substances given by the REACH Candidate list or the Norwegian priority list.

Indoor environment

Greenguard certified

Additional environmental information

Bibliography

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