

ENVIRONMENTAL PRODUCT DECLARATION

in accordance with ISO 14025

**epd-norge.no**
The Norwegian EPD Foundation

Owner of the declaration

Flokk AS

Program holder

The Norwegian EPD Foundation

Declaration number

NEPD00038E Rev. 1

Issue date

17.12.2014

Valid to

17.12.2019

HÅG Capisco 8106

Product

**Flokk**

HÅG • RH • BMA • OFFECCT • RBM

General information

Product

HÅG Capisco 8106

Program holder:

The Norwegian EPD Foundation
Post Box 5250 Majorstuen, 0303 Oslo
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Declaration number:

NEPD00038E Rev. 1

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:
Declared unit with option:
Functional unit:

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

The EPD has been worked out by:

Østfoldforskning AS, Mie Vold


Verification:

Independent verification of data and other environmental information has been carried out in accordance with ISO14025, 8.1.3 and 8.1.4

externally ☒

internally ☐


Senior Research Scientist, Cecilia Askham
(Independent verifier approved by EPD Norway)

Owner of the declaration:

Flokk AS

Contact person: Atle Thiis-Messel

Phone: +47 98 25 68 30

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Manufacturer

Flokk AS

Place of production:

7366 Røros, Norway

Management system:

ISO 14001, Certificate No.2010-SKM-AR-1487 from the Accredited Unit: DNV Certification AB, Sweden.

Org. No:

No 928 902 749

Issue date:

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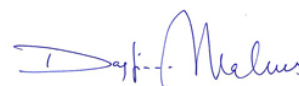
Comparability:

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

Year of study:

2014

Approved



Dagfinn Malnes
Managing Director of EPD-Norway

Functional unit:

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

Key environmental indicators (A1-A3)	Unit	Cradle to gate A1 - A3
Global warming	kg CO ₂ eqv	45
Total energy use (CED)	MJ	535
Substances from the REACH Candidate list	*	
Amount of recycled materials	%	50 %

* The product contains no substances from the REACH Candidate list or the Norwegian priority list

Product

Product description:

HÅG Capisco is inspired by the horseman's saddle and sitting posture. No one sits as actively as a rider in the saddle. When you work sitting on a HÅG Capisco, you'll be inspired to greater freedom of movement, variation and new natural sitting positions. HÅG Capisco allows you to sit as high or low as you want. No other work chair is so well adapted to work stations of different heights. Sit down and adjust it from a normal table height to a semi-standing position. Its award-winning design fits into creative meeting rooms and any other place where you want to work and move in a different way. It's also a great chair for dentists and surgeons who work in semi-standing positions or when used back-to-front so that the back panel supports the chest.

Technical data:

Total weight: 12,9 kg (14,8 kg with packaging)

More information: <http://www.hag-uk.co.uk/products/hag-capisco/>

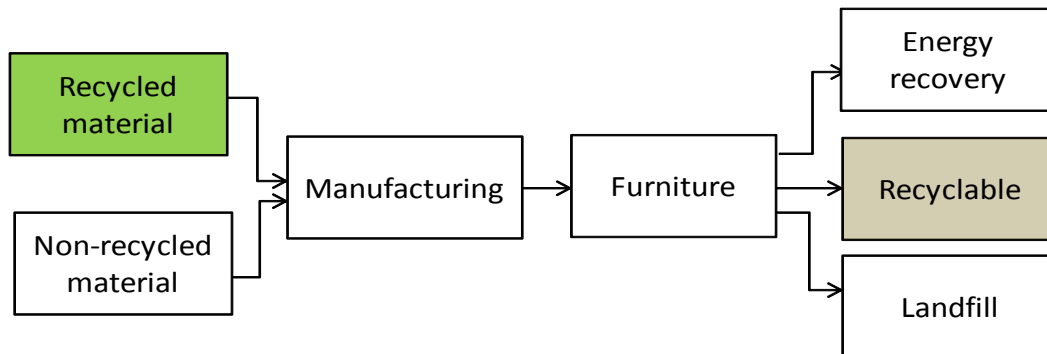
Market:

Europe and USA

Reference service life:

15 years

Materials	kg	%
Steel	4,8	37 %
Steel	2,9	23 %
Plast	4,8	37 %
Textile	0,3	2 %
Cardboard	0,1	1 %
Various	0,0	0 %
	0,0	0 %
Total product	12,9	100 %
Cardboard (packaging)	1,8	
Total product and packaging	14,8	



Materials	Recycled share for each material	Recycled amount	Recycled share in product	Recyclable share for each material	Recyclable amount	Recyclable share in product
Unit	%	kg	%	%	kg	%
Steel	28 %	1,4	9 %	100 %	4,8	1 %
Aluminium	90 %	2,6	18 %	100 %	2,9	30 %
Polypropylene	95 %	2,2	15 %	100 %	2,3	9 %
Polyurethane	0 %	0,0	0 %	0 %	0,0	0 %
Other plastic	0 %	0,0	0 %	100 %	1,2	48 %
Textile	93 %	0,3	2 %	100 %	0,3	3 %
Varnish	0 %	0,0	0 %	0 %	0,0	0 %
Not included	0 %	0,0	0 %	0 %	0,0	0 %
Total product	-	6,5	50 %	-	11,5	89 %
Cardboard (packaging)	75 %	1,4		100 %	1,8	
Total product and packaging		7,8	53 %	-	13,3	90 %

In manufacture, about 53% of the total mass of the chair and its packaging is recycled material. At the end of the chair's life, about 90% of its total mass will consist of materials that can be recycled.

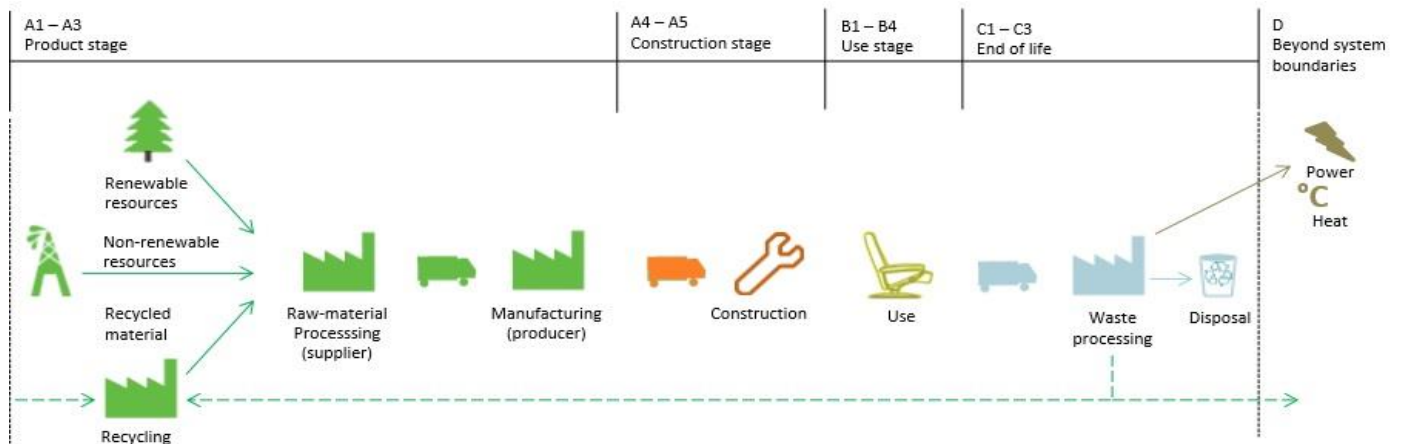
LCA: Calculation rules

Functional 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).



The seating solution components are assembled at SBSeating's facility in Røros.

Data quality:

Specific data from suppliers and manufacturer 2011/2012 are used in the EPD analysis. Database data from Ecoinvent 3 is used as the basis for raw material and energy carrier production.

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 of waste are allocated to the product system that uses the recovered energy. This is a deviation from the PCR for Ecoinvent processes, where emissions from incineration are allocated to the product system in which the waste arises.
- Emissions from incineration of waste without energy recovery are allocated to the production system where the waste arises.

Additional information

According to the PCR the output should include both impact and the largest emissions (by mass) to air and water. Because of the format of the EPD the largest emissions are not presented.

The methods for calculating the environmental impact are IPCC 2007 for global warming and CML 2001 for other impact categories.

Material recycling at end of life (D) is not within the system boundaries, but as a scenario. The avoided emissions from replaced virgin material are included in D.

LCA: Scenarios and additional technical information

Transportation to an average customer in Copenhagen is 1000 km (A4). The use stage is represented by a scenario and includes vacuum cleaning of textiles 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 chair is dismantled and the materials recycled or combusted according to the general Norwegian treatment of industrial waste. This calculation includes CO₂ emissions and energy only (C1-D). Disassembly is a manual process with no impacts on the results of the LCA and is therefore not included. The transport distance to reuse, recovery or recycling varies for each material, but the average distance is 373 km.

LCA: Results

The following information describes 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

Parameter	A1	A2	A3	A1-A3	A4	B1	C1	C2	C3	C1-C3	D
GWP	42	1,3	2,4	45	2,0	6,1E-03	1,2	11,9	0,0	13	-11
ODP	2,0E-05	8,4E-08	1,8E-07	2,1E-05	1,3E-07	1,9E-10	0	0	0	0	-1,51E-05
POCP	1,3E-02	1,3E-04	5,8E-04	1,3E-02	1,4E-04	1,2E-06	0	0	0	0	-3,18E-03
AP	7,2E-02	1,0E-03	5,3E-03	7,9E-02	1,5E-03	5,0E-06	0	0	0	0	-1,53E-02
EP	0,19	5,4E-03	8,8E-03	2,0E-01	6,7E-03	3,4E-05	0	0	0	0	-4,44E-02
ADPM*	3,5E-04	5,8E-09	7,1E-06	3,6E-04	9,2E-09	2,0E-08	0	0	0	0	-1,92E-04
ADPE	500	18	33	551	28	8,2E-02	0	0	0	0	-260

*Some processes included are based on data from Ecoinvent 3.0.1. which is lacking data for renewable resources. The correct number of ADPM in the table above and RPEE, RPEM and TPE in the table below may be higher. See reference [5] for details. The lack of data will be addressed in a new version of Ecoinvent 3, which not was available when this declaration was carried out.

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**

Parameter	A1	A2	A3	A1-A3	A4	B1	C1	C2	C3	C1-C3	D
RPEE*	9	0	2,6E-03	8,9	0	9,26E-02	0	0	0	0	-13
RPEM*	3	2,2E-03	14,7	18,1	3,3E-03	0	0	0	0	0	-13
TPE*	12	2,2E-03	14,7	26,9	3,3E-03	9,26E-02	0	0	0	0	-26
NRPE	479	18	31,7	529	28	7,86E-02	19	51	0,99	71	-271
NRPM	106	0	4	109	0	0	0	0	0	0	0
TRPE	585	18	35	639	28	8,76E-02	19	51	0,99	71	-271
SM	7	0	1	8,06	0	0	0	0	0	0	-7
RSF	0	0	0	0	0	0	0	0	0	0	0
NRSF	-3,0	0	0	-3,0	0	3,96E-02	0	0	0	0	0
W	1,69	3,5E-03	0,08	1,78	5,4E-03	0	0	0	0	0	-0,4

* See above.

** Energy is given in MJ in accordance with recommendations in the Norwegian EPD program.

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); **TRPE** 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

Parameter	A1	A2	A3	A1-A3	A4	B1	C1	C2	C3	C1-C3	D
HW	0,01	1,3E-05	6,4E-05	1,3E-02	2,0E-05	5,8E-06					0
NHW	16	1,0E-02	4,3E-01	16	1,6E-02	7,6E-04			2,3	2,3	-2,5
RW	0	0	0	0	0	0					0
CR	0	0	0	0	0	0					0
MR	0	0	1	0,83	0	0		9,9		9,9	0
MER	0	0	0	0,20	0	0		3		3	0
EEE	0	0	0	0	0	0					0
ETE	0	0	0	0	0	0					86

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-eqv/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 '16.06.2014) substances on the Norwegian Priority list (pr.17.06.2013) 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




<http://productguide.ulenvironment.com/ProductDetail.aspx?productID=4567&BrandID=11>

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] Vold, M; Livsløpsdata for 6 sitteløsninger fra Håg. Bakgrunnsdata for miljødeklarasjon (EPD), Østfoldforskning AS, OR 17.14 Fredrikstad.
- [6] 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
- [7] <http://productguide.ulenvironment.com/ProductDetail.aspx?productID=4567&BrandID=11>

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