

# Environmental product declaration

in accordance with ISO 14025 and EN 15804+A2

## Noor 4-Leg



Flol:I:

The Norwegian EPD Foundation

Owner of the declaration:

Flokk AS

**Product:** 

Noor 4-Leg

**Declared unit:** 

1 pcs

This declaration is based on Product Category Rules:

CEN Standard EN 15804:2012+A2:2019 serves as core

PCR

NPCR 026:2022 Part B for Furniture

Program operator:

The Norwegian EPD Foundation

**Declaration number:** 

NEPD-5074-4402-EN

Registration number:

NEPD-5074-4402-EN

**Issue date:** 27.09.2023

Valid to: 27.09.2028

**EPD Software:** 

LCA.no EPD generator ID: 73530



## **General information**

#### Product

Noor 4-Leg

## **Program operator:**

Post Box 5250 Majorstuen, 0303 Oslo, Norway The Norwegian EPD Foundation Phone: +47 23 08 80 00 web: post@epd-norge.no

## **Declaration number:**

NEPD-5074-4402-EN

## This declaration is based on Product Category Rules:

CEN Standard EN 15804:2012+A2:2019 serves as core PCR NPCR 026:2022 Part B for Furniture

## 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.

#### **Declared unit:**

1 pcs Noor 4-Leg

#### Declared unit (cradle to gate) with option:

A1-A3,A4,A5,B2,B3,B4,C1,C2,C3,C4,D

### **Functional unit:**

Noor 4-Leg 6050 (including packaging

### General information on verification of EPD from EPD tools:

Independent verification of data, other environmental information and the declaration according to ISO 14025:2010, § 8.1.3 and § 8.1.4. Verification of each EPD is made according to EPD-Norway's guidelines for verification and approval requiring that tools are i integrated into the company's environmental management system, ii the procedures for use of the EPD tool are approved by EPD-Norway, and iii the process is reviewed annually by an independent third party verifier. See Appendix G of EPD-Norway's General Programme Instructions for further information on EPD tools

## **Verification of EPD tool:**

Independent third party verification of the EPD tool, background data and test-EPD in accordance with EPDNorway's procedures and guidelines for verification and approval of EPD tools.

Third party verifier:

Elisabet Amat, GREENIZE projects (no signature required

## Owner of the declaration:

Contact person: Atle Thiis-Messel Phone: 0047 98 25 68 30 e-mail: atle.messel@flokk.com

#### Manufacturer:

Flokk AS Drammensveien 145, 0277 Oslo, Norway

## Place of production:

Flokk - Nässjö Vallgatan 1 571 23 Nässjö, Sweden

## **Management system:**

ISO 14001, ISO 9001, ISO 50001 (Norway, Sweden

## Organisation no:

No 928 902 749

Issue date: 27.09.2023

Valid to: 27.09.2028

## Year of study:

2023

## **Comparability:**

EPD of construction products may not be comparable if they not comply with EN 15804 and seen in a building context.

## **Development and verification of EPD:**

The declaration is created using EPD tool lca.tools ver EPD2022.03, developed by LCA.no. The EPD tool is integrated in the company's management system, and has been approved by EPD Norway.

Developer of EPD: Kenneth Dam Lindegaard Knudsen

Reviewer of company-specific input data and EPD: Fabio Fava

#### Approved:

Håkon Hauan, CEO EPD-Norge



## **Product**

## **Product description:**

Noor is a colourful, wide and versatile 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.

Noor 4-leg makes lean and lightweight look easy. As a result, it's the most minimalistic in the Noor series. Timeless Scandinavian design is reflected in its simplicity and functionality - making it our ideal crossover model. A chair that's perfectly suitable in any work, study or home environment.

## **Product specification**

The model studied in this declaration is the Noor 4-leg (6050), including packaging. The model declared does not include any options such as armrests, etc.

The key environmental indicators for the other models of the family, and applicable options of the product collection are presented in a table on page 12 of this declaration.

Materials	kg	%	Recycled share in material (kg)	Recycled share in material (%)
Powder coating	0,02	0,37	0,00	0,00
Plastic - Polypropylene (PP)	2,51	48,31	0,00	0,00
Metal - Steel	2,66	51,16	0,61	22,94
Plastic - Polyethylene (HDPE)	0,01	0,15	0,00	0,00
Total	5,20		0,61	

Packaging	kg	%	Recycled share in material (kg)	Recycled share in material (%)
Packaging - Cardboard	0,49	62,03	0,00	0,00
Recycled cardboard	0,30	37,97	0,30	100,00
Total incl. packaging	5,99		0,91	

#### **Technical data:**

Total weight: 5,20 kg (packaging excluded) Total weight: 5,99 kg (packaging included)

## Market: Worldwide

## Reference service life, product

5 years

Reference service life, building

## LCA: Calculation rules

## **Declared unit:**

1 pcs Noor 4-Leg

## **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. Incoming energy and water and waste production in-house is allocated equally among all products through mass allocation. 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:

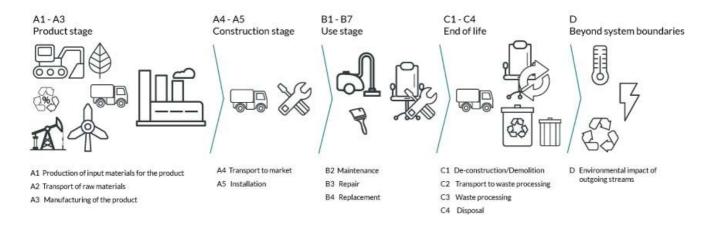
Specific data for the product composition are provided by the manufacturer. They represent the production of the declared product and were collected for EPD development in the year of study. Background data is based on registered EPDs according to EN 15804, Ostfold Research databases, ecoinvent and other LCA databases. The data quality of the raw materials in A1 is presented in the table below.

Materials	Source	Data quality	Year
Metal - Steel	ecoinvent 3.6	Database	2019
Plastic - Polyethylene (HDPE)	ecoinvent 3.6	Database	2019
Plastic - Polypropylene (PP)	ecoinvent 3.6	Database	2019
Powder coating	Ecoinvent 3.6	Database	2019
Metal - Steel	Modified ecoinvent 3.6	Database	2019
Packaging - Cardboard	Modified ecoinvent 3.6	Database	2019
Recycled cardboard	Modified ecoinvent 3.6	Database	2019

## System boundaries (X=included, MND=module not declared, MNR=module not relevant)

Р	roduct stag	ge	Construction installation stage		l			Use stage End of life stage Beyond the system boundaries			End of life stage			Beyond the system boundaries		
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	В3	B4	B5	В6	В7	C1	C2	C3	C4	D
Χ	Χ	Χ	Χ	Χ	MND	X	Χ	Χ	MND	MND	MND	Χ	X	X	Χ	X

## System boundary:



## **Additional technical information:**



## LCA: Scenarios and additional technical information

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

Transport from production place to user (A4)	Capacity utilisation (incl. return) %	Distance (km)	Fuel/Energy Consumption	Unit	Value (Liter/tonne)
Truck, over 32 tonnes, EURO 6 (km)	53,3 %	373	0,023	l/tkm	8,58
Assembly (A5)	Unit	Value			
Waste, packaging, cardboard, 100 % recycled, to average treatment (kg)	kg	0,30			
Waste, packaging, corrugated board box, 0 % recycled, to average treatment (kg)	kg	0,49			
Maintenance (B2)	Unit	Value			
Electricity, Nordic (kWh)	kWh/DU	0,81			
Water, tap water (m3)	m3/DU	11,70			
Repair (B3)	Unit	Value			
Electricity, Nordic (kWh)	kWh/DU	0,55			
Transport to waste processing (C2)	Capacity utilisation (incl. return) %	Distance (km)	Fuel/Energy Consumption	Unit	Value (Liter/tonne)
Truck, 16-32 tonnes, EURO 6 (km)	36,7 %	100	0,043	l/tkm	4,30
Waste processing (C3)	Unit	Value			
Waste treatment per kg Non-hazardous waste, incineration with fly ash extraction - C3 (kg)	kg	0,02			
Waste treatment per kg Polyethylene, PE, incineration with fly ash extraction - C3 (kg)	kg	0,01			
Waste treatment per kg Polypropylene (PP), incineration with fly ash extraction - C3 (kg)	kg	2,51			
Waste treatment per kg Scrap steel, incineration with fly ash extraction (kg)	kg	2,66			
Waste, materials to recycling (kg)	kg	0,90			
Disposal (C4)	Unit	Value			
Landfilling of ashes and residues from incineration of Scrap steel (kg)	kg	1,76			
Landfilling of ashes from incineration of Non- hazardous waste, process per kg ashes and residues - C4 (kg)	kg	0,00			
Landfilling of ashes from incineration of Polyethylene, PE, process per kg ashes and residues - C4 (kg)	kg	0,00			
Landfilling of ashes from incineration of Polypropylene, PP, process per kg ashes and residues - C4 (kg)	kg	0,07			
Benefits and loads beyond the system boundaries (D)	Unit	Value			
Substitution of electricity, in Norway (MJ)	MJ	4,11			
Substitution of primary steel with net scrap (kg)	kg	0,70			
Substitution of thermal energy, district heating, in Norway (MJ)	MJ	62,24			



### **LCA: Results**

The LCA results are presented below for the declared unit defined on page 2 of the EPD document.

Environme	ental impact							
	Indicator	Unit		A1-A3	A4	A5	B2	В3
	GWP-total	kg CO <sub>2</sub>	eq	1,36E+01	1,95E-01	1,36E+00	4,16E+00	8,01E-02
	GWP-fossil	kg CO <sub>2</sub>	kg CO <sub>2</sub> -eq		1,95E-01	1,28E-02	4,12E+00	7,47E-02
	GWP-biogenic	kg CO <sub>2</sub>	eq	-1,17E+00	8,34E-05	1,35E+00	2,72E-02	1,36E-03
	GWP-luluc	kg CO <sub>2</sub>	-eq	1,69E-02	5,93E-05	4,24E-06	1,26E-02	4,09E-03
٨	ODP	kg CFC11	-eq	8,96E-07	4,69E-08	2,71E-09	3,67E-07	8,08E-09
	АР	mol H+	-eq	6,99E-02	6,27E-04	6,07E-05	2,39E-02	3,44E-04
	EP-FreshWater	kg P -€	q	7,22E-04	1,55E-06	1,05E-07	3,28E-04	4,94E-06
4	EP-Marine	kg N -	eq	1,32E-02	1,37E-04	2,01E-05	3,79E-03	5,44E-05
*	EP-Terrestial	mol N -	eq	1,47E-01	1,53E-03	2,17E-04	4,43E-02	7,31E-04
	POCP	kg NMVO	C -eq	5,65E-02	6,01E-04	6,25E-05	1,38E-02	1,71E-04
	ADP-minerals&metals <sup>1</sup>	kg Sb -	kg Sb -eq		3,47E-06	3,12E-07	1,14E-04	1,16E-06
	ADP-fossil <sup>1</sup>	МЈ	МЈ		3,16E+00	1,79E-01	7,15E+01	2,02E+00
<u>%</u>	WDP <sup>1</sup>	m <sup>3</sup>	m <sup>3</sup>		2,42E+00	2,27E-01	1,46E+03	1,56E+02
	Indicator	Unit	B4	C1	C2	C3	C4	D
	GWP-total	kg CO <sub>2</sub> -eq	0	0				
(FB)			U	0	9,79E-02	6,48E+00	2,30E-02	-1,14E+00
	GWP-fossil	kg CO <sub>2</sub> -eq	0	0	9,79E-02 9,78E-02	6,48E+00 6,48E+00	2,30E-02 2,30E-02	-1,14E+00 -1,13E+00
	GWP-fossil GWP-biogenic	kg CO <sub>2</sub> -eq						
			0	0	9,78E-02	6,48E+00	2,30E-02	-1,13E+00
	GWP-biogenic	kg CO <sub>2</sub> -eq	0	0	9,78E-02 4,05E-05	6,48E+00 3,15E-04	2,30E-02 1,65E-05	-1,13E+00 -1,17E-03
	GWP-biogenic GWP-luluc	kg CO <sub>2</sub> -eq	0 0	0 0	9,78E-02 4,05E-05 3,48E-05	6,48E+00 3,15E-04 1,25E-05	2,30E-02 1,65E-05 6,46E-06	-1,13E+00 -1,17E-03 -1,28E-02
	GWP-biogenic GWP-luluc ODP	kg CO <sub>2</sub> -eq kg CO <sub>2</sub> -eq kg CFC11 -eq	0 0 0	0 0 0	9,78E-02 4,05E-05 3,48E-05 2,22E-08	6,48E+00 3,15E-04 1,25E-05 6,54E-09	2,30E-02 1,65E-05 6,46E-06 6,45E-09	-1,13E+00 -1,17E-03 -1,28E-02 -2,63E-02
	GWP-biogenic GWP-luluc ODP AP	kg CO <sub>2</sub> -eq kg CO <sub>2</sub> -eq kg CFC11 -eq mol H+ -eq	0 0 0 0 0	0 0 0 0	9,78E-02 4,05E-05 3,48E-05 2,22E-08 2,81E-04	6,48E+00 3,15E-04 1,25E-05 6,54E-09 9,07E-04	2,30E-02 1,65E-05 6,46E-06 6,45E-09 1,51E-04	-1,13E+00 -1,17E-03 -1,28E-02 -2,63E-02 -6,78E-03
	GWP-biogenic GWP-luluc ODP AP EP-FreshWater	kg CO <sub>2</sub> -eq kg CO <sub>2</sub> -eq kg CFC11 -eq mol H+ -eq kg P -eq	0 0 0 0 0	0 0 0 0 0	9,78E-02 4,05E-05 3,48E-05 2,22E-08 2,81E-04 7,82E-07	6,48E+00 3,15E-04 1,25E-05 6,54E-09 9,07E-04 9,86E-07	2,30E-02 1,65E-05 6,46E-06 6,45E-09 1,51E-04 2,41E-07	-1,13E+00 -1,17E-03 -1,28E-02 -2,63E-02 -6,78E-03 -7,91E-05
	GWP-biogenic GWP-luluc ODP AP EP-FreshWater EP-Marine	kg CO <sub>2</sub> -eq kg CO <sub>2</sub> -eq kg CFC11 -eq mol H+ -eq kg P -eq kg N -eq	0 0 0 0 0 0	0 0 0 0 0 0	9,78E-02 4,05E-05 3,48E-05 2,22E-08 2,81E-04 7,82E-07 5,56E-05	6,48E+00 3,15E-04 1,25E-05 6,54E-09 9,07E-04 9,86E-07 4,24E-04	2,30E-02 1,65E-05 6,46E-06 6,45E-09 1,51E-04 2,41E-07 5,33E-05	-1,13E+00 -1,17E-03 -1,28E-02 -2,63E-02 -6,78E-03 -7,91E-05 -1,76E-03
	GWP-biogenic GWP-luluc ODP AP EP-FreshWater EP-Marine EP-Terrestial	kg CO <sub>2</sub> -eq kg CO <sub>2</sub> -eq kg CFC11 -eq mol H+ -eq kg P -eq kg N -eq mol N -eq	0 0 0 0 0 0	0 0 0 0 0 0	9,78E-02 4,05E-05 3,48E-05 2,22E-08 2,81E-04 7,82E-07 5,56E-05 6,22E-04	6,48E+00 3,15E-04 1,25E-05 6,54E-09 9,07E-04 9,86E-07 4,24E-04 4,58E-03	2,30E-02 1,65E-05 6,46E-06 6,45E-09 1,51E-04 2,41E-07 5,33E-05 5,92E-04	-1,13E+00 -1,17E-03 -1,28E-02 -2,63E-02 -6,78E-03 -7,91E-05 -1,76E-03 -1,85E-02
	GWP-biogenic GWP-luluc ODP AP EP-FreshWater EP-Marine EP-Terrestial POCP	kg CO <sub>2</sub> -eq kg CO <sub>2</sub> -eq kg CFC11 -eq mol H+ -eq kg P -eq kg N -eq mol N -eq kg NMVOC -eq	0 0 0 0 0 0 0	0 0 0 0 0 0 0	9,78E-02 4,05E-05 3,48E-05 2,22E-08 2,81E-04 7,82E-07 5,56E-05 6,22E-04 2,38E-04	6,48E+00 3,15E-04 1,25E-05 6,54E-09 9,07E-04 9,86E-07 4,24E-04 4,58E-03 1,13E-03	2,30E-02 1,65E-05 6,46E-06 6,45E-09 1,51E-04 2,41E-07 5,33E-05 5,92E-04 1,70E-04	-1,13E+00 -1,17E-03 -1,28E-02 -2,63E-02 -6,78E-03 -7,91E-05 -1,76E-03 -1,85E-02 -6,73E-03

GWP-total = Global Warming Potential total; GWP-fossil = Global Warming Potential fossil fuels; GWP-biogenic = Global Warming Potential biogenic; GWP-luluc = Global Warming Potential land use and land use change; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential, Accumulated Exceedance; EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment: EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption

## Remarks to environmental impacts

<sup>&</sup>quot;Reading example: 9,0 E-03 = 9,0\*10-3 = 0,009"

<sup>\*</sup>INA Indicator Not Assessed

<sup>1.</sup> The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator



Additional e	nvironmental impac	t indicators						
	Indicator	Unit		A1-A3	A4	A5	B2	В3
	PM	Disease incidence		1,02E-06	1,79E-08	8,96E-10	1,99E-07	1,83E-09
	IRP <sup>2</sup>	kgBq U235 -eq		6,65E-01	1,38E-02	7,68E-04	5,42E-01	4,60E-02
<b>6</b>	ETP-fw <sup>1</sup>	CTUe		4,40E+02	2,31E+00	2,39E-01	7,79E+01	2,53E+00
4 <u>0.*</u>	HTP-c <sup>1</sup>	CTUh		5,02E-08	0,00E+00	8,00E-12	1,12E-08	5,90E-11
48	HTP-nc <sup>1</sup>	CTUh	4,53E-07	2,23E-09	3,00E-10	2,49E-07	1,55E-09	
	SQP <sup>1</sup>	dimensionless		2,33E+02	3,62E+00	1,20E-01	2,14E+01	1,52E+00
ı	ndicator	Unit	Unit B4		C2	C3	C4	D
	PM	Disease incidence	0	0	5,99E-09	8,42E-09	2,70E-09	-2,44E-07
(vi)	IRP <sup>2</sup>	kgBq U235 -eq	0	0	6,47E-03	1,16E-03	1,95E-03	-3,02E-02
49	ETP-fw <sup>1</sup>	CTUe	0	0	1,10E+00	2,42E+00	3,22E-01	-7,07E+01
40.* ** <u>*</u>	HTP-c <sup>1</sup>	CTUh	0	0	0,00E+00	2,78E-10	1,20E-11	-4,19E-09
8° <u>B</u>	HTP-nc <sup>1</sup>	CTUh	0	0	1,20E-09	6,16E-09	3,57E-10	5,31E-08
	SQP <sup>1</sup>	dimensionless	0	0	1,03E+00	8,84E-02	1,06E+00	-3,50E+01

PM = Particulate Matter emissions; IRP = Ionizing radiation – human health; ETP-fw = Eco toxicity – freshwater; HTP-c = Human toxicity – cancer effects; HTP-nc = Human toxicity – non cancer effects; SQP = Soil Quality (dimensionless)

<sup>&</sup>quot;Reading example: 9,0 E-03 = 9,0\*10-3 = 0,009"

<sup>\*</sup>INA Indicator Not Assessed

<sup>1.</sup> The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator

<sup>2.</sup> This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator.

## Flol: l:

Resource use									
N S	Indicator		U	nit	A1-A3	A4	A5	B2	В3
er E	PERE		N	N۱	6,38E+01	3,98E-02	2,95E-03	1,22E+01	1,98E+00
	PERM		١	ΜJ	1,03E+01	0,00E+00	-9,59E+00	0,00E+00	0,00E+00
° <b>⊊</b>	PERT		N	ΝJ	7,41E+01	3,98E-02	-9,59E+00	1,22E+01	1,98E+00
<b>a</b>	PENRE		١	MJ	2,33E+02	3,16E+00	1,79E-01	7,16E+01	2,05E+00
Åg	PENRM		1	MJ	8,27E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00
<b>IA</b>	PENRT		N	MJ	3,15E+02	3,16E+00	1,79E-01	7,16E+01	2,05E+00
	SM		l	кg	9,11E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00
2	RSF		MJ		7,80E-01	1,39E-03	9,80E-05	7,76E-01	2,00E-02
	NRSF		MJ		1,31E-01	4,66E-03	4,04E-04	7,36E-01	0,00E+00
<b>%</b>	FW		r	m <sup>3</sup>	1,61E-01	3,60E-04	8,47E-05	1,18E+01	9,03E-03
	Indicator								
Indi	cator	ι	Unit	B4	C1	C2	C3	C4	D
Indi	cator PERE		<b>Unit</b> MJ	B4 0	C1 0	C2 2,12E-02	C3 2,03E-02	C4 1,01E-02	-3,24E+01
Ç.	PERE		MJ	0	0	2,12E-02	2,03E-02	1,01E-02	-3,24E+01
T I	PERE PERM		M1 M1	0	0	2,12E-02 0,00E+00	2,03E-02 0,00E+00	1,01E-02 0,00E+00	-3,24E+01 0,00E+00
₹.	PERE PERM PERT		M1 M1	0 0	0 0	2,12E-02 0,00E+00 2,12E-02	2,03E-02 0,00E+00 2,03E-02	1,01E-02 0,00E+00 1,01E-02	-3,24E+01 0,00E+00 -3,24E+01
E E F	PERE PERM PERT PENRE		M1 M1 M1	0 0 0	0 0 0	2,12E-02 0,00E+00 2,12E-02 1,48E+00	2,03E-02 0,00E+00 2,03E-02 5,72E-01	1,01E-02 0,00E+00 1,01E-02 4,81E-01	-3,24E+01 0,00E+00 -3,24E+01 -1,16E+01
E I I I	PERE PERM PERT PENRE PENRM		мл мл мл мл	0 0 0 0	0 0 0 0	2,12E-02 0,00E+00 2,12E-02 1,48E+00 0,00E+00	2,03E-02 0,00E+00 2,03E-02 5,72E-01 -8,27E+01	1,01E-02 0,00E+00 1,01E-02 4,81E-01 0,00E+00	-3,24E+01 0,00E+00 -3,24E+01 -1,16E+01 0,00E+00
	PERE PERM PERT PENRE PENRM PENRT		мл мл мл мл	0 0 0 0 0	0 0 0 0 0	2,12E-02 0,00E+00 2,12E-02 1,48E+00 0,00E+00 1,48E+00	2,03E-02 0,00E+00 2,03E-02 5,72E-01 -8,27E+01 -8,21E+01	1,01E-02 0,00E+00 1,01E-02 4,81E-01 0,00E+00 4,81E-01	-3,24E+01 0,00E+00 -3,24E+01 -1,16E+01 0,00E+00 -1,16E+01
	PERE PERM PERT PENRE PENRM PENRT SM		MJ MJ MJ MJ MJ kg	0 0 0 0 0 0	0 0 0 0 0 0	2,12E-02 0,00E+00 2,12E-02 1,48E+00 0,00E+00 1,48E+00 0,00E+00	2,03E-02 0,00E+00 2,03E-02 5,72E-01 -8,27E+01 -8,21E+01 0,00E+00	1,01E-02 0,00E+00 1,01E-02 4,81E-01 0,00E+00 4,81E-01 0,00E+00	-3,24E+01 0,00E+00 -3,24E+01 -1,16E+01 0,00E+00 -1,16E+01 0,00E+00

PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non renewable primary energy resources used as raw materials; PENRM = Use of non renewable primary energy resources used as raw materials; PENRT = 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; FW = Net use of fresh water

"Reading example: 9,0 E-03 = 9,0\*10-3 = 0,009" \*INA Indicator Not Assessed

# Flol: l:

End of life - Waste									
	Indicator				A1-A3	A4	A5	B2	В3
	HWD		k	g	1,12E-01	1,73E-04	0,00E+00	1,32E-02	1,89E-04
<u> </u>	NHWD		k	g	3,06E+00	2,75E-01	7,93E-01	8,51E-01	1,25E-02
<b>3</b>	RWD		kg		6,12E-04	2,16E-05	0,00E+00	4,33E-04	2,11E-05
Inc	dicator		Unit	B4	C1	C2	C3	C4	D
Ā	HWD		kg	0	0	7,63E-05	0,00E+00	1,81E+00	-4,22E-03
Ū	NHWD	NHWD		0	0	7,19E-02	1,92E-02	4,53E-02	-4,35E-01
æ	RWD		kg	0	0	1,01E-05	0,00E+00	2,96E-06	-2,49E-05

HWD = Hazardous waste disposed; NHWD = Non-hazardous waste disposed; RWD = Radioactive waste disposed

"Reading example: 9,0 E-03 = 9,0\*10-3 = 0,009" \*INA Indicator Not Assessed

End of life - Output flow								
Ind	icator	Un	it	A1-A3	A4	A5	B2	В3
<b>@▷</b>	CRU	kç	kg		0,00E+00	0,00E+00	0,00E+00	0,00E+00
&>	MFR	kg	kg		0,00E+00	7,37E-01	0,00E+00	0,00E+00
Þ₹	MER	kg	kg		0,00E+00	1,08E-06	0,00E+00	0,00E+00
50	EEE	М	МЈ		0,00E+00	4,53E-02	0,00E+00	0,00E+00
<b>D</b>	EET	М	MJ		0,00E+00	6,86E-01	0,00E+00	0,00E+00
Indicato	or	Unit	B4	C1	C2	C3	C4	D
<b>∅</b> >	CRU	kg	0	0	0,00E+00	0,00E+00	0,00E+00	0,00E+00
\$>	MFR	kg	0	0	0,00E+00	9,02E-01	0,00E+00	0,00E+00
DF	MER	kg	0	0	0,00E+00	5,20E+00	0,00E+00	0,00E+00
50	EEE	МЈ	0	0	0,00E+00	4,18E+00	0,00E+00	0,00E+00
D	EET	MJ	0	0	0,00E+00	6,32E+01	0,00E+00	0,00E+00

CRU = Components for re-use; MFR = Materials for recycling; MER = Materials for energy recovery; EEE = Exported energy electrical; EET = Exported energy thermal

"Reading example: 9,0 E-03 = 9,0\*10-3 = 0,009" \*INA Indicator Not Assessed

Biogenic Carbon Content									
Unit	At the factory gate								
kg C	0,00E+00								
kg C	3,67E-01								
	kg C								

Note: 1 kg biogenic carbon is equivalent to 44/12 kg CO2



## **Additional 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).

Electricity mix	Data source	Amount	Unit
Electricity, high voltage, hydro (kWh) - SE	ecoinvent 3.6	4.02	a CO2-ea/kWh

## **Dangerous substances**

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

#### **Indoor environment**

## **Additional Environmental Information**

Additional environmental impact indicators required in NPCR Part A for construction products								
Indicator	Unit	Unit			A5	B2	В3	
GWPIOBC	kg CO <sub>2</sub> -eq	kg CO <sub>2</sub> -eq		1,95E-01	0,00E+00	4,20E+00	1,09E-01	
Indicator	Unit	B4	C1	C2	C3	C4	D	
GWPIOBC	kg CO <sub>2</sub> -eq	0	0	9,79E-02	6,45E+00	2,32E-02	-1,51E+00	

GWP-IOBC: Global warming potential calculated according to the principle of instantaneous oxidation. In order to increase the transparency of biogenic carbon contribution to climate impact, the indicator GWP-IOBC is required as it declares climate impacts calculated according to the principle of instantaneous oxidation. GWP-IOBC is also referred to as GWP-GHG in context to Swedish public procurement legislation.

#### **Variants and Options**

Key environmental indicators (A1-A3) for variants of this EPD							
Variants	Weight (kg)	GWPtotal (kg CO <sub>2</sub> -eq)	Total energy consumption (MJ)	Amount of recycled materials (%)			
Noor 4-leg 6050 - Plastic shell - No packaging	5,20	14,20	275,53	11,74			
Noor 4-leg 6055 - Wood shell - No packaging	4,26	6,23	164,30	14,32			
Noor 4-leg 6050S - Plastic shell w/ upholstered seat (Cura/Gabriel) - No packaging	6,07	16,71	308,86	21,72			
Noor 4-leg 6050SB - Plastic shell w/ upholstered seat & back (Cura/Gabriel) - No packaging	6,99	19,30	343,15	29,81			
Noor 4-leg 6050F - Plastic shell w/ full upholstery (Cura/Gabriel) - No packaging	5,78	17,24	313,72	14,68			
Noor 4-leg 6055S - Wood shell w/ upholstered seat (Cura/Gabriel) - No packaging	5,96	7,69	219,15	22,13			
Noor 4-leg 6055SB - Wood shell w/ upholstered seat & back (Cura/Gabriel) - No packaging	6,88	10,29	253,44	30,29			

Key environmental indicators (A1-A3) for options for this EPD						
Options	Weight (kg)	GWPtotal (kg CO <sub>2</sub> -eq)	Total energy consumption (MJ)	Amount of recycled materials (%)		
Noor Armrests	1,93	4,93	58,67	14,53		
Noor Row connection device	0,37	1,17	3,51	18,01		
Chair Trolley	6,87	25,58	311,52	0,00		
Packaging (Large box, fully assembled)	0,79	-0,58	21,81	37,97		

## **Key Environmental Indicators**

Indicator	Unit	A1-A3	A4	A1-C4	A1-D
GWPtotal	kg CO <sub>2</sub> -eq	13,63	0,19	26,02	24,88
Total energy consumption	MJ	297,33	3,21	392,74	347,69
Amount of recycled materials	%	15.21			



## **Bibliography**

ISO 14025:2010 Environmental labels and declarations - Type III environmental declarations - Principles and procedures.

ISO 14044:2006 Environmental management - Life cycle assessment - Requirements and guidelines.

EN 15804:2012 + A2:2019 Environmental product declaration - Core rules for the product category of construction products.

ISO 21930:2017 Sustainability in buildings and civil engineering works - Core rules for environmental product declarations of construction products.

ecoinvent v3, Allocation, cut-off by classification, Swiss Centre of Life Cycle Inventories.

Iversen et al., (2021) eEPD v2021.09 Background information for EPD generator tool system verification, LCA.no Report number: 07.21 Ruud et al., (2023) EPD generator for NPCR026 Part B for Furniture - Background information for EPD generator application and LCA data, LCA.no report number 01.23

NPCR Part A: Construction products and services. Ver. 2.0. March 2021, EPD-Norge.

NPCR 026 Part B for Furniture. Ver. 2.0 March 2022, EPD-Norge.

and narway	Program operator and publisher	Phone:	+47 23 08 80 00
epd-norway	The Norwegian EPD Foundation	e-mail:	post@epd-norge.no
Global Program Operator	Post Box 5250 Majorstuen, 0303 Oslo, Norway	web:	www.epd-norge.no
101 1	Owner of the declaration:	Phone:	0047 98 25 68 30
lilol:l:	Flokk AS	e-mail:	atle.messel@flokk.com
1 1 0 11 11	Drammensveien 145,, 0277 Oslo	web:	https://www.flokk.com
	Author of the Life Cycle Assessment	Phone:	+47 916 50 916
	LCA.no AS	e-mail:	post@lca.no
	Dokka 6B, 1671	web:	www.lca.no
	Developer of EPD generator	Phone:	+47 916 50 916
(LCA <sup>)</sup>	LCA.no AS	e-mail:	post@lca.no
.no	Dokka 6B,1671 Kråkerøy	web:	www.lca.no
ECO PLATFORM	ECO Platform	web:	www.eco-platform.org
VERIFIED	ECO Portal	web:	ECO Portal