

## ENVIRONMENTAL PRODUCT DECLARATION

In accordance with ISO 14025

Owner of the declaration	Fora Form AS
Program holder and publisher	The Norwegian EPD Foundation
Declaration number	NEPD-1901-810-EN
Issue date	14.10.2019
Valid to	14.10.2024

### Kove - 3-seats high back

Product

Key environmental indicators for variants on page 6

**Fora Form**

Manufacturer

**fora**  
1929  
**form**

[www.epd-norge.no](http://www.epd-norge.no)



## General information

### Product

Kove

### Owner of the declaration:

Fora Form AS  
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### General Information

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### Manufacturer

Fora Form AS



### Declaration number: NEPD-1901-810-EN

### Place of production:

Mosflatevegen 6154 Ørsta

### This declaration is based on Product Category Rules:

PCR for furniture, NPCR 021, Norwegian EPD Foundation

### Management system:

NS-EN ISO 14001:2015 Certificat No.800406  
 NS-EN ISO 9001: 2015 Certificat No.901268  
 NS-EN ISO 45001:2018 Certificat No.907167

### Declared unit:

Sofa upolstered seat and steel back.  
 Pillows on back

### Org. No:

Org No. 986 581 421

### Declared unit with option:

No options

### Issue date: 14.10.2019

### Functional unit:

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

### Valid to: 14.10.2024

### This EPD has been worked out by:

The declaration has been developed using Furniture EPD Tool Version 1.4.3., Approval: NEPDT04  
 Company specific data collected and registered by:  
**Kåre Sætre**  
 Company specific data audited by:  
**Anders Utgård**

### Comparability:

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

### 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.

### Year of study:

2019

Approved

externally



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



Håkon Hauan  
 Managing Director of EPD-Norway

Key environmental indicators	Unit	Cradle to Gate A1-A3
Global warming	kg CO <sub>2</sub>	189
Total energy use	MJ	4171
Amount of recycled materials	%	6 %

## Product

### Product Description and Application

KOVE is a module-based sofa system designed by Morten&Jonas. Inspired by wrought iron fences from when they were viewed as status symbols. The name KOVE also tells a story, originating from the word alcove, meaning a smaller room in a bigger space. The soft KOVE sofa does this to perfection – a guarding alcove with a steel frame. The design unites both comfort and function with the different modules.

### Technical Data

Total weight 65,55 kg / packaging exluded  
Kove has the furniture facts certificate

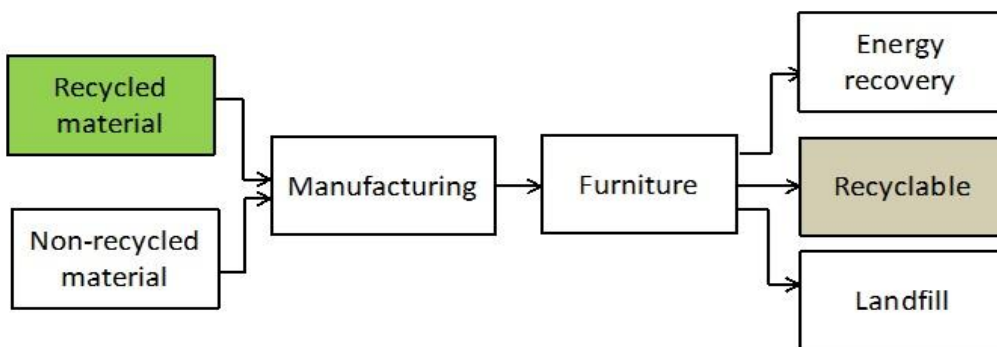
### Market

Worldwide

### Reference Service Life

15 years

Materials			Recycled material in manufactured product		Recyclable material at end of product life	
Unit	kg	%	%	kg	%	kg
Steel	29,10	41 %	0 %	0,00	100 %	29,10
Wood	18,70	26 %	0 %	0,00	0 %	0,00
Polyurethane	14,95	21 %	0 %	0,00	100 %	14,95
Packaging	6,00	8 %	76 %	4,56	100 %	6,00
Textiles	2,60	4 %	0 %	0,00	0 %	0,00
POM	0,20	0 %	10 %	0,02	100 %	0,20
<b>Total</b>	<b>71,55</b>		<b>6 %</b>		<b>70 %</b>	



Product manufactured from 6% recycled material

At end of life product contains 70% recyclable material

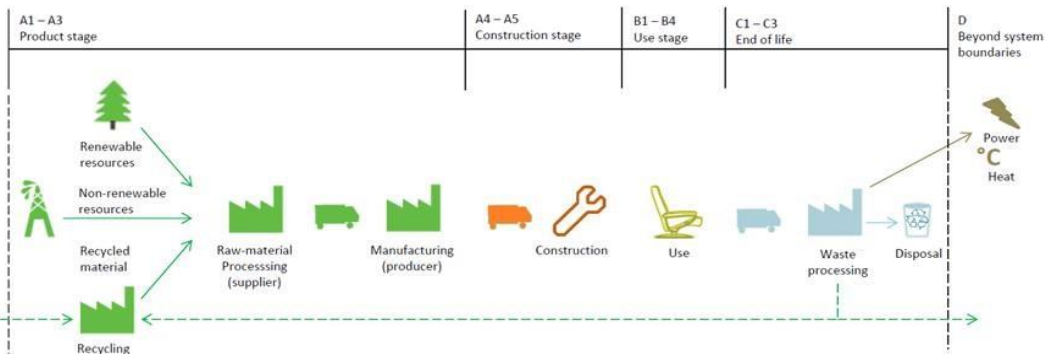
## LCA: Calculation rules

### Declared Unit

Sofa upholstered seat and steel back.  
Pillows on back

### System Boundary

Life cycle stages included are described in figure and through the corresponding letter and number designations in the



### 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.

### 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 1000 km (A4: average European lorry > 32 tonnes)

The use stage (B1) 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 general Norwegian treatment of industrial waste (see the table below). This calculation includes only CO<sub>2</sub> emissions (GWP) in the C-modules. The transport distance to reuse, recovery or recycling varies 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 Assessed)

Parameter	A1	A2	A3	A1-A3	A4	B1	C1	C2	C3	C1-C3	D
GWP	112,8	0,8	75,3	188,9	4,3E-02	0,0	5,1	41,6	4,7	51,4	-33,1
ODP	4,9E-06	1,5E-07	4,6E-06	9,6E-06	8,5E-09	0,0	INA	INA	INA	INA	0,0E+00
POCP	0,1	1,2E-04	2,0E-02	0,1	6,9E-06	0,0	INA	INA	INA	INA	0,0E+00
AP	0,5	3,0E-03	0,3	0,8	1,7E-04	0,0	INA	INA	INA	INA	0,0E+00
EP	0,2	6,3E-04	0,1	0,3	3,7E-05	0,0	INA	INA	INA	INA	0,0E+00
ADPM*	2,0E-04	1,1E-06	3,2E-04	5,3E-04	8,4E-08	0,0	INA	INA	INA	INA	0,0E+00
ADPE	2030,7	12,6	811,4	2854,6	0,7	0,0	INA	INA	INA	INA	-780,8

GWP Global warming potential (kg CO<sub>2</sub>-eqv.); ODP Depletion potential of the stratospheric ozone layer (kg CFC11-eqv.); POCP Formation potential of tropospheric photochemical oxidants (kg C<sub>2</sub>H<sub>4</sub>-eqv.); AP Acidification potential of land and water (kg SO<sub>2</sub>-eqv.); EP Eutrophication potential (kg PO<sub>4</sub>-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*	1013,2	0,2	85,6	1099,0	1,2E-02	0,0	INA	INA	INA	INA	0,0
RPEM*	651,9	3,5E-02	17,0	668,9	2,6E-03	0,0	INA	INA	INA	INA	0,0
TPE*	1665,2	0,2	102,6	1767,9	1,5E-02	0,0	INA	INA	INA	INA	0,0
NRPE	2135,9	12,9	923,0	3071,7	0,7	0,0	INA	INA	INA	INA	0,0
NRPM	264,6	0,0	0,0	264,6	0,0	0,0	INA	INA	INA	INA	0,0
TNRPE	2400,4	12,9	923,0	3336,3	0,7	0,0	INA	INA	INA	INA	0,0
SM	4,6	0,0	0,0	4,6	0,0	0,0	INA	INA	INA	INA	0,0
RSF	0,0	0,0	0,0	0,0	0,0	0,0	INA	INA	INA	INA	0,0
NRSF	0,0	0,0	0,0	0,0	0,0	0,0	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	1,7E-03	5,5E-06	2,7E-03	4,5E-03	3,6E-07	0,0	INA	INA	INA	INA	0,0
NHW	24,9	0,8	50,5	76,2	0,1	0,0	INA	INA	INA	INA	0,0
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	0,0	0,0	0,0	0,0	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 electricity consumed is Norwegian electric power

### Dangerous Substances

None of the following substances have been added to the product :  
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 :** Our furniture doesn't contain any substrates that affect indoor climate.

**Climate Declaration :** Not relevant

## Additional environmental information

Key environmental indicators for variants. ( Packaging included )

Variant model name and type	Global warming ( kg.CO2 )	Total energy use ( MJ )	Share of recycled
Kove 1 seat ottoman	26	812	11 %
Kove 2 seats ottoman	46	1502	8 %
Kove 3 seats ottoman	62	2089	7 %
Kove chair low back	71	1567	16 %
Kove chair high back	97	1949	12 %
Kove multichair low back	70	1579	9 %
Kove multichair high back	82	1753	8 %
Kove sofa 2 seats low back	132	2958	7 %
Kove sofa 2 seats high back	156	3307	6 %
Kove sofa 3 seats low back	156	3695	8 %
Kove sofa 3 seats high back	189	4171	6 %

[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] Product category rules (PCR) for preparing an environmental product declaration for:  
Product Group Seating Solution NPCR 003: 2015; Product Group Plate Furniture NPCR 021: 2012

[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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