

Result summary

Rex chair with return system

Circuform bv

Calculation number:	EPD-NIBE-20220329-25790
Generation on:	06-09-2022
Issue date:	06-09-2022
Valid until:	06-09-2027
Status:	verified

R<THiNK



1 Rex chair with return system

1.1 COMPANY INFORMATION / DECLARATION OWNER

Manufacturer: Circuform bv

Production Location: Molenaar Transport

Address: Vreekesweid 33, 1721 BB Broek op Langedijk

E-mail: sander@vandoorn.com

Website: www.circuform.nl

1.2 EPD INFORMATION

Calculation number: EPD-NIBE-20220329-25790

Date of issue: 06-09-2022

End of validity: 06-09-2027

Version NIBE's EPD Application: v2.0

Version database: v3.11 (2022-07-18)

PCR: Horizontal PCR INSIDE/INSIDE v1.2 2018-12-10

1.3 VERIFICATION OF THE DECLARATION

CEN standard EN 15804:2012 serves as the core PCR.

Independent verification of the declaration. according to EN ISO 14025:2010.

☐ Internal ☒ External

I hereby confirm that, following detailed examination as independent 3rd party verifier, I have not been able to trace any relevant deviations by the Environmental Product Declaration EPD-NIBE-20220329-25790, issued for Rex chair with return system by Circuform B.V. and by its project report from the requirements outlined in the corresponding product category regulations based on the horizontal PCR of INSIDEINSIDE and the corresponding product group PCR

Product Category Rules (PCR) Meubilair v1.1 of 12 december 2018.

The company-specific data have been examined as regards plausibility and consistency; the declaration owner is responsible for its factual integrity.



Third party verifier: Anne Kees Jeeninga, Advieslab

1.4 DECLARED UNIT

One chair

A circular chair with a service life of 10 years, incl. transport to the client (A4), placement in the project (A5) and use- stage. End of life is also included (C1-D). In accordance with the horizontal PCR v1.2 of Inside/Inside a distance of 1km has been declared for module A4.

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1.5 SCOPE OF DECLARATION

A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
X	X	X	X	X	X	X	X	MND	MND	MND	MND	X	X	X	X	X

(X = included, MND = module not declared)

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1.6 PRODUCT DESCRIPTION

The Rex chair is designed for office, healthcare, education, hospitality and domestic use.

The chair consists of two injection moulded components from recycled granulate.

The chair measures 814x507x566 mm and weighs 6 kg

The chair has a service life of 10 years and meets the requirements of EN581 and EN16139.

1.7 DESCRIPTION OF THE MANUFACTURING PROCESS

Recycled granulate enters the factory. The material consists for the most part of PA6-GF30.

The PA6-GF30 granulate is injected into a mould to create the seat and legs of the chair, as one part, and the back and two armrests.

4 leg plugs of TPE are added to ensure the stability of the legs.

The parts of the chairs are stacked and packaged in carton before it is ready for transport to the Netherlands.

In the warehouse in the Netherlands the chairs are assembled using 2 screws. The assembly is done by hand and does not require energy input. The chairs are stacked and transported to the customer without package material, only moving blankets are used where necessary.

Production waste is 3% for prefab products, in line with the PCR of Inside/Inside. The production waste is internally recycled.

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1.8 RESULTS

Environmental effects	Unit	A1	A2	A3	A4	A5	B1	B2	B3	C1	C2	C3	C4	D	Total
ADPE	Kg Sb	1.33E-5	2.70E-5	4.24E-5	2.55E-8	2.69E-6	0.00E+0	0.00E+0	0.00E+0	0.00E+0	1.57E-6	2.78E-5	1.44E-10	1.01E-4	2.16E-4
ADPF	MJ	1.27E+0	1.85E+1	6.04E+1	1.49E-2	1.58E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	9.19E-1	1.96E+1	3.19E-4	7.58E+1	1.78E+2
AP	Kg SO2 Equiv.	3.15E-4	6.51E-3	2.44E-2	4.38E-6	6.29E-4	0.00E+0	0.00E+0	0.00E+0	0.00E+0	2.70E-4	5.49E-3	9.08E-8	3.12E-2	6.89E-2
ODP	Kg CFC-11 Equiv.	8.95E-9	2.12E-7	5.71E-7	1.77E-10	1.83E-8	0.00E+0	0.00E+0	0.00E+0	0.00E+0	1.09E-8	2.23E-7	3.44E-12	-1.28E-7	9.16E-7
GWP	Kg CO2 Equiv.	7.00E-2	1.31E+0	5.11E+0	9.97E-4	1.79E-1	0.00E+0	0.00E+0	0.00E+0	0.00E+0	6.14E-2	5.39E+0	1.53E-4	7.50E+0	1.96E+1
EP	Kg PO43- Equiv.	4.10E-5	1.26E-3	3.73E-3	8.61E-7	1.16E-4	0.00E+0	0.00E+0	0.00E+0	0.00E+0	5.31E-5	9.22E-4	3.52E-8	5.55E-3	1.17E-2
POCP	Kg Ethene Equiv.	9.67E-5	8.26E-4	1.86E-3	6.01E-7	9.95E-5	0.00E+0	0.00E+0	0.00E+0	0.00E+0	3.71E-5	9.62E-4	3.54E-8	4.47E-3	8.36E-3

ADPE=Depletion of abiotic resources-elements | **ADPF**=abiotic depletion of fossil resources | **AP**=Acidification of soil and water | **ODP**=Ozone layer depletion | **GWP**=Global warming | **EP**=Eutrophication | **POCP**=Photochemical oxidants creation

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Parameter	Unit	A1	A2	A3	A4	A5	B1	B2	B3	C1	C2	C3	C4	D	Total
PERE	MJ	8.76E-2	6.45E-1	3.41E+1	1.90E-4	3.50E-1	0.00E+0	0.00E+0	0.00E+0	0.00E+0	1.17E-2	7.44E-2	7.59E-6	-1.93E+0	3.33E+1
PERM	MJ	0.00E+0	0.00E+0	1.43E+1	0.00E+0	1.43E-1	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	-8.28E+0	6.19E+0
PERT	MJ	8.76E-2	6.45E-1	4.85E+1	1.90E-4	5.26E-1	0.00E+0	0.00E+0	0.00E+0	0.00E+0	1.17E-2	1.19E+0	5.53E-6	-1.02E+1	4.07E+1
PENRE	MJ	1.14E+0	2.09E+1	7.57E+1	1.61E-2	1.12E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	9.92E-1	1.13E+0	3.63E-4	9.22E+1	1.93E+2
PENRM	MJ	3.26E-1	0.00E+0	9.28E-3	0.00E+0	3.36E-3	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	-1.72E-2	3.22E-1
PENRT	MJ	1.46E+0	2.09E+1	7.64E+1	1.61E-2	1.87E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	9.92E-1	2.27E+1	3.47E-4	9.20E+1	2.16E+2
SM	Kg	6.52E+0	0.00E+0	1.96E-1	0.00E+0	6.72E-2	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	6.78E+0
RSF	MJ	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
NRSF	MJ	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
FW	M3	9.23E-4	4.28E-3	1.25E-1	1.85E-6	1.73E-3	0.00E+0	0.00E+0	0.00E+0	0.00E+0	1.14E-4	1.53E-2	3.41E-7	7.03E-2	2.18E-1
HWD	Kg	3.49E-6	4.68E-5	1.19E-4	3.84E-8	3.82E-6	0.00E+0	0.00E+0	0.00E+0	0.00E+0	2.37E-6	3.46E-5	4.95E-10	-2.71E-5	1.83E-4
NHWD	Kg	1.99E-2	9.83E-1	4.58E-1	9.62E-4	4.65E-2	0.00E+0	0.00E+0	0.00E+0	0.00E+0	5.93E-2	9.68E-1	1.37E-3	1.67E-1	2.70E+0
RWD	Kg	5.13E-6	1.27E-4	2.21E-4	9.96E-8	8.33E-6	0.00E+0	0.00E+0	0.00E+0	0.00E+0	6.13E-6	8.09E-5	1.95E-9	3.38E-5	4.83E-4
CRU	Kg	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
MFR	Kg	0.00E+0	0.00E+0	1.57E-1	0.00E+0	7.36E-1	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	5.23E+0	0.00E+0	0.00E+0	6.13E+0
MER	Kg	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
EE	MJ	0.00E+0	0.00E+0	6.39E-1	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	2.33E+1	2.39E+1
EET	MJ	0.00E+0	0.00E+0	4.05E-1	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	1.47E+1	1.51E+1
EEE	MJ	0.00E+0	0.00E+0	2.35E-1	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	8.56E+0	8.80E+0
ECI I/I	€	0,01	0,11	0,40	0,00	0,01	0,00	0,00	0,00	0,00	0,00	0,30	0,00	0,56	1,39

PERE=renewable primary energy ex. raw materials | PERM=renewable primary energy used as raw materials | PERT=renewable primary energy total |
PENRE=non-renewable primary energy ex. raw materials | PENRM=non-renewable primary energy used as raw materials | PENRT=non-renewable primary energy
total | SM=use of secondary material | RSF=use of renewable secondary fuels | NRSF=use of non-renewable secondary fuels | FW=use of net fresh water |
HWD=hazardous waste disposed | NHWD=non hazardous waste disposed | RWD=radioactive waste disposed | CRU=Components for re-use | MFR=Materials for
recycling | MER=Materials for energy recovery | EE=Exported energy | EET=Exported Energy Thermic | EEE=Exported Energy Electric

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1.9 ADDITIONAL INFORMATION

Allocation

There is no allocation applied for the environmental profiles / datasets used in this LCA.