Ahrend Remode

Type Ax model, middle-high back, fabric seat and mesh back

This product is designed following our circular design strategy derived from the Dutch NPR8313-2 guideline for Circular offices and learning environments. Our circular design strategy focuses on maximizing value of product lifecycles and minimizing raw material extraction.

Lifetime extension, reuse and recycling

We are committed to keep the environmental footprint of our products as low as possible.
With our Circular Hub we make sure that products keep in the cycle for as long as possible.
Together we will take care of a sustainable solution.

- Lifetime extension by repair, maintenance or refurbishment
- Take back for reuse
- Reuse parts and/or materials
- Recycling

Circular design

- All parts in this product can easily be adjusted to meet future needs
- Product is designed for easy (dis)assembly with standardised tools
- Lightweight construction, high material efficiency
- Easily replaceable upholstery
- Product (dis)assembly manual available

Certificates

- This product has low VOC emissions, ANSI BIFMA 7.1. e3 furniture sustainability test rapport available
- This product has an Environmental Product Declaration (EPD) according to ISO14025 and EN15804

14,9 kg	48,1%	98,8%
Weight	Recycled content*	Recyclability**

* Total percentage recycled content in product based on suppliers' data and market availability. The source of recycled content is both post-industrial and post-consumer.

** The recyclability percentage is the maximum percentage of the product that is recyclable, based on the availability of recycling facilities in the specified region.

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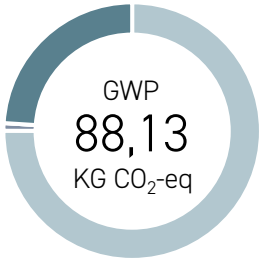

	Raw materials, incl. extraction and processing	75,00	85%
	Production, processing and assembly	0,95	1%
	Distribution, user stage and maintenance	0,00	0%
	End-of-life stage, waste-processing and disposal	23,98	27%
	Reuse, recovery, recycling potential	-11,80	-13%
	Total	**88,13**	**100%**

Materials	Weight (gr)	% of total	Resource
Polyamid 6 (GF30%)	8.450	56,8%	Virgin non-renewable and recycled content
Steel	1.655	11,1%	Virgin non-renewable and recycled content
Aluminium	1.223	8,2%	Virgin non-renewable and recycled content
Zamak	815	5,5%	Virgin non-renewable and recycled content
Polyamid 6 (GF50%)	646	4,3%	Virgin non-renewable
Polyurethane	577	3,9%	Virgin non-renewable
Polyamid 6	468	3,1%	Virgin non-renewable
Polyester	184	1,2%	Virgin non-renewable and recycled content
Polyamid 6 (GF30%)	180	1,2%	Virgin non-renewable
Glass epoxy	165	1,1%	Virgin non-renewable
Polypropylene	155	1,0%	Virgin non-renewable
Polyoxymethylene	61	0,4%	Virgin non-renewable
Polyester epoxy powdercoating	20	0,1%	Virgin non-renewable
Cable	19	0,1%	Virgin non-renewable
Copper	16	0,1%	Virgin non-renewable and recycled content
Acrylonitrile butadiene styrene	5	0,0%	Virgin non-renewable
Packaging: LDPE Bag	250	1,7%	Virgin non-renewable and recycled content
Total	**14.889**	**100%**	

Manufactured in
Germany

Production location
Netherlands

Renewable energy assembly location
100%

Materials

Material composition
Ahrend selects its materials following strict criteria when it comes to responsible sourcing, material safety, longevity and the entire lifecycle of a material. Before we choose a material, we first look at material safety of a material, following the cradle-to-cradle philosophy that materials first have to be safe, in order to be circular. We look at minimum impact of material input, by choosing re-used materials over new, virgin materials. We select materials that have a lifespan of more than one economic lifecycle so that the material can be re-used multiple economic lifecycles.

Material safety
No substances listed on the REACH Candidate list of Substances of Very High Concern (SVHC) have been intentionally added to the homogeneous material or are a known contaminant in the homogeneous material.

Material selection
- Fabrics that can be selected for this product have either an EU Ecolabel or OEKO-TEX® STANDARD 100
- This product consists of 62% recycled plastics from fishing nets, from certified recycling sources
- This product consists of 78% recycled plastics
- For this calculation, Gabriel Vivid was used for upholstery, which is Cradle to Cradle Bronze certified

Want to learn more?
Contact your account manager or visit www.ahrend.com

Procurement

When selecting our suppliers, we require our business partners to comply with the same ethical business behaviour with respect for labour-, human- and environmental rights. Ahrend maintains long-term relationships with many of its suppliers, some spanning several decades, which is a key advantage for the further development of products, technologies and materials.

Environmental Product Declaration

Ahrend conducted a life cycle assessment for this product to measure their environmental impacts. Alongside their carbon footprint, we also study other impacts such as resource depletion and water scarcity. This EPD can be found on the following pages.

Production and packaging

The chair is packaged in a LDPE bag, which weighs 0,25 kg. The LDPE bag consist of 70% post-industrial recycled content.

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Third party verified Environmental Product Declaration

According ISO 14025, EN 15804+A2 & NMD Assessment Method 1.1

Company information

Manufacturer:	Royal Ahrend
Production location:	Sint-Oedenrode
Address:	Kofferen 60, 5492 BP Sint-Oedenrode
E-mail:	info@ahrend.com
Website:	www.ahrend.com

EPD information

Product name:	Office Chair – Ahrend Remode Type Ax
Date of issue:	02-08-2024
End of validity:	02-08-2029
PCR:	ISO 14025 & EN 15804+A2 (+indicators A1)
LCA method:	NMD Assessment Method 1.1
LCA software:	Ecochain Mobius
Version database:	Ecoinvent v3.6 Cut-Off

Declaration from the verifier, Tim Mol 2-8-2024:
"The methodologies and data collection that are described in this report, comply with the requirements that are stated in "Environmental Performance Assessment Method for Construction Works" version 1.1, released in March 2022, and the standards that it is based on: ISO 14040, ISO 14044 and NEN-EN 15804."

Declared products

Ahrend Remode Type Ax

Scope of declaration

Funtional unit:	One product (piece)
System boundaries:	Cradle-to-grave
Life cycle stages included:	

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	x	x	MND	MND	x	x	x	x	x

(x = included, MND = module not declared)

Product information

Description of the product:
The Ahrend Remode office chair is a modular office chair, that complies with the European EN 1335-1 ergonomic standard and the Dutch NPR 1813 ergonomic guideline. The ergonomical classifications within the EN 1335-1 range from Type Ax (NPR), Type A to Type C. These categorization into types of office chairs is based on user body dimensional requirements.

Type Ax is the configuration which satisfies most ergonomical needs. This is achieved by using different components, which extend the adjustment range of the elements that support the body (seat, armrests and backrest/lumbar) and add adjustment options.

Like any typical office chair, the Ahrend Remode has a star base with castors. The chair is fitted with a standard range of seat height adjustment. The height adjustment is achieved with a manually actuated gas lift. The chair uses a synchro mechanism to support the user while reclining backwards. For Type Ax, the counterforce of the mechanism is adjustable. The chair can be locked in various positions while leaning backward. Depending on the configuration the seat depth is adjustable: Type Ax has the largest seat depth range. Also, the armrest has more adjustment options/range: Type Ax has the most options and range. The chair is fitted with a lumbar support.

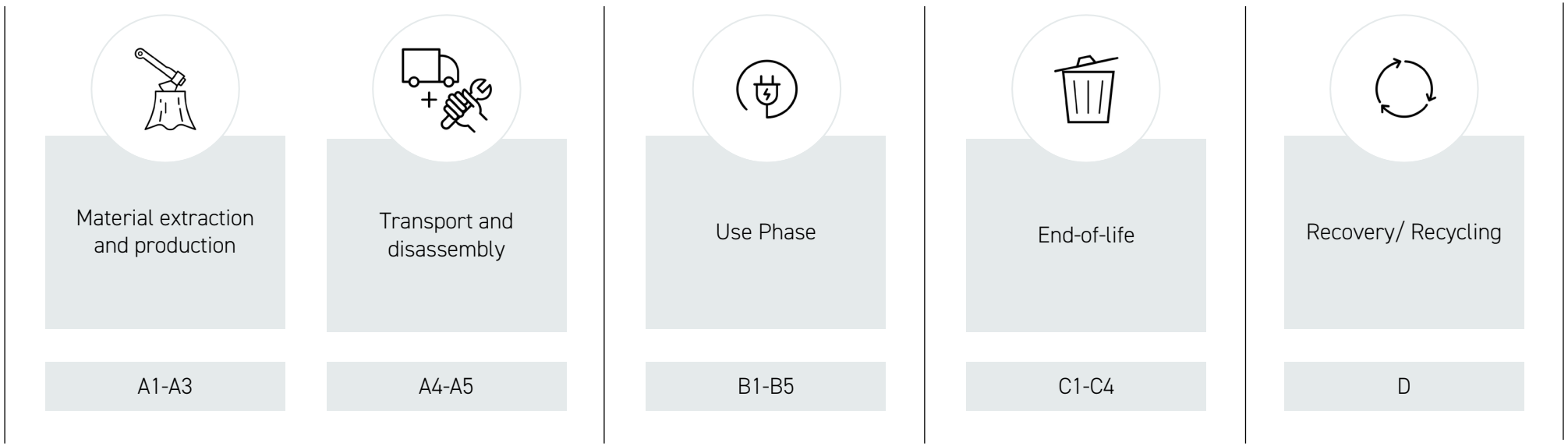
By using glass fibre reinforced (recycled) plastics for structural mechanism components, the weight of the chair is significantly reduced, compared to other chairs in the market. Ahrend Remode Type Ax with packaging weights 14,889 kg. The office chair has a lifetime of 10 years.

Description of manufacturing process:
Materials and parts are delivered at Ahrend production facilities in Sint-Oedenrode. Parts are assembled to end product.

Processes that are taking place in the Ahrend production facility in Sint-Oedenrode include:
- Lasering of fabrics
- Upholstery of fabrics
- Final product assembly with manual tooling

Description of packaging materials:
The chair is packaged in a LDPE bag, which weighs 0,25 kg.

Process boundary



Ahrend Remode Type Ax

Results of the environmental performance indicators (LCA results) of one functional unit (one Ahrend Remode Type Ax)

[Ahrend Remode Type Ax] Impact category	Reference unit	A1-A3	A4	A5	B1-B7	C1	C2	C3	C4	D	Total
ECI Single score	Euro	1,03E+01	3,52E-02	3,67E-02	0,00E+00	0,00E+00	1,86E-02	1,41E+00	1,59E-02	-1,33E+00	1,05E+01
[Set 1] Abiotic depletion, fuel (ADPF)	kg Sb eq	5,60E-01	2,14E-03	7,86E-05	0,00E+00	0,00E+00	1,13E-03	9,21E-03	2,66E-04	-8,94E-02	4,83E-01
[Set 1] Abiotic depletion, non-fuel (ADPE)	kg Sb eq	4,29E-02	7,60E-06	2,33E-07	0,00E+00	0,00E+00	4,01E-06	3,21E-05	2,47E-07	9,76E-04	4,39E-02
[Set 1] Acidification (AP)	kg SO2 eq	3,42E-01	1,25E-03	8,37E-05	0,00E+00	0,00E+00	6,62E-04	8,59E-03	1,56E-04	-3,52E-02	3,17E-01
[Set 1] Ecotoxicity, fresh water (FAETP)	kg 1,4-DB eq	9,43E-01	3,65E-03	7,64E-03	0,00E+00	0,00E+00	1,93E-03	9,17E-02	1,08E-02	-1,07E-02	1,05E+00
[Set 1] Ecotoxicity, marine water (MAETP)	kg 1,4-DB eq	2,63E+03	1,30E+01	1,11E+01	0,00E+00	0,00E+00	6,89E+00	2,64E+02	1,13E+01	-2,01E+02	2,74E+03
[Set 1] Ecotoxicity, terrestric (TETP)	kg 1,4-DB eq	2,06E-01	4,42E-04	3,61E-05	0,00E+00	0,00E+00	2,33E-04	4,02E-03	4,76E-05	1,10E-01	3,21E-01
[Set 1] Eutrophication (EP)	kg PO4--- eq	5,04E-02	2,51E-04	2,89E-05	0,00E+00	0,00E+00	1,32E-04	1,37E-03	7,56E-05	-3,38E-03	4,89E-02
[Set 1] Global warming (GWP)	kg CO2 eq	7,50E+01	2,92E-01	6,53E-01	0,00E+00	0,00E+00	1,54E-01	2,36E+01	2,27E-01	-1,18E+01	8,81E+01
[Set 1] Human toxicity (HT)	kg 1,4-DB eq	4,74E+01	1,25E-01	2,32E-02	0,00E+00	0,00E+00	6,58E-02	1,61E+00	1,78E-02	-5,80E+00	4,34E+01
[Set 1] Ozone layer depletion (ODP)	kg CFC-11 eq	4,78E-06	5,41E-08	1,41E-09	0,00E+00	0,00E+00	2,85E-08	7,13E-07	5,61E-09	-8,37E-07	4,75E-06
[Set 1] Photochemical oxidation (POCP)	kg C2H4 eq	3,82E-02	1,75E-04	6,54E-06	0,00E+00	0,00E+00	9,23E-05	8,11E-04	5,45E-05	-7,48E-03	3,19E-02
[Set 2] Acidification (AP)	mol H+ eq	4,11E-01	1,67E-03	1,17E-04	0,00E+00	0,00E+00	8,84E-04	1,10E-02	2,04E-04	-4,23E-02	3,82E-01
[Set 2] Climate change - Biogenic (GWP-b)	kg CO2 eq	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
[Set 2] Climate change - Fossil (GWP-f)	kg CO2 eq	7,62E+01	2,94E-01	6,54E-01	0,00E+00	0,00E+00	1,55E-01	2,37E+01	2,64E-01	-1,22E+01	8,90E+01
[Set 2] Climate change - Land use and LU change (GWP-luluc)	kg CO2 eq	6,96E-02	1,04E-04	4,97E-06	0,00E+00	0,00E+00	5,49E-05	1,87E-03	1,25E-05	-1,52E-02	5,64E-02

Ahrend Remode Type Ax

Results of the environmental performance indicators (LCA results) of one functional unit (one Ahrend Remode Type Ax)

[Set 2] Climate change (GWP-total)	kg CO2 eq	7,63E+01	2,94E-01	6,54E-01	0,00E+00	0,00E+00	1,55E-01	2,37E+01	2,64E-01	-1,22E+01	8,91E+01
[Set 2] Ecotoxicity, freshwater (ETF)	CTUe	1,90E+03	3,66E+00	2,41E-01	0,00E+00	0,00E+00	1,93E+00	2,96E+02	2,47E+01	-1,90E+02	2,04E+03
[Set 2] Eutrophication, freshwater (EP-fw)	kg P eq	3,78E-03	2,42E-06	1,66E-07	0,00E+00	0,00E+00	1,28E-06	7,27E-05	4,51E-07	-2,34E-04	3,63E-03
[Set 2] Eutrophication, marine (EP-m)	kg N eq	8,85E-02	5,99E-04	5,08E-05	0,00E+00	0,00E+00	3,16E-04	2,96E-03	1,58E-04	-7,32E-03	8,52E-02
[Set 2] Eutrophication, terrestrial (EP-t)	mol N eq	7,44E-01	6,60E-03	5,45E-04	0,00E+00	0,00E+00	3,48E-03	3,31E-02	7,37E-04	-8,21E-02	7,07E-01
[Set 2] Human toxicity, cancer (HTC)	CTUh	8,94E-08	1,30E-10	2,84E-11	0,00E+00	0,00E+00	6,88E-11	4,45E-09	1,63E-11	-6,71E-09	8,74E-08
[Set 2] Human toxicity, non-cancer (HTNC)	CTUh	2,17E-06	4,37E-09	1,00E-09	0,00E+00	0,00E+00	2,31E-09	9,63E-08	6,37E-10	3,67E-07	2,64E-06
[Set 2] Ionising radiation (IR)	kBq U-235 eq	2,96E+00	1,97E-02	4,52E-04	0,00E+00	0,00E+00	1,04E-02	7,40E-02	2,12E-03	-4,26E-02	3,03E+00
[Set 2] Land use (SQP)	Pt	2,64E+02	3,86E+00	1,21E-01	0,00E+00	0,00E+00	2,04E+00	9,21E+00	1,34E+00	-1,60E+01	2,64E+02
[Set 2] Ozone depletion (ODP)	kg CFC11 eq	4,92E-06	6,77E-08	1,69E-09	0,00E+00	0,00E+00	3,57E-08	7,10E-07	7,01E-09	-9,19E-07	4,82E-06
[Set 2] Particulate matter (PM)	disease inc.	3,34E-06	2,65E-08	9,00E-10	0,00E+00	0,00E+00	1,40E-08	8,78E-08	3,76E-09	-4,95E-07	2,98E-06
[Set 2] Photochemical ozone formation (POCP)	kg NMVOC eq	2,27E-01	1,89E-03	1,39E-04	0,00E+00	0,00E+00	9,96E-04	8,79E-03	2,68E-04	-3,26E-02	2,07E-01
[Set 2] Resource use, fossils (ADP-f)	MJ	1,16E+03	4,51E+00	1,56E-01	0,00E+00	0,00E+00	2,38E+00	1,72E+01	5,45E-01	-1,48E+02	1,03E+03
[Set 2] Resource use, minerals and metals (ADP-mm)	kg Sb eq	4,29E-02	7,60E-06	2,33E-07	0,00E+00	0,00E+00	4,01E-06	3,21E-05	2,47E-07	9,76E-04	4,39E-02
[Set 2] Water use (WDP)	m3 depriv.	4,21E+01	1,38E-02	2,41E-03	0,00E+00	0,00E+00	7,31E-03	1,16E+00	2,29E-02	-1,23E+00	4,20E+01
Components for re-use (CRU)	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Energy, primary, non-renewable (PENRT)	MJ	1,24E+03	4,79E+00	1,68E-01	0,00E+00	0,00E+00	2,53E+00	1,83E+01	5,79E-01	-1,62E+02	1,10E+03

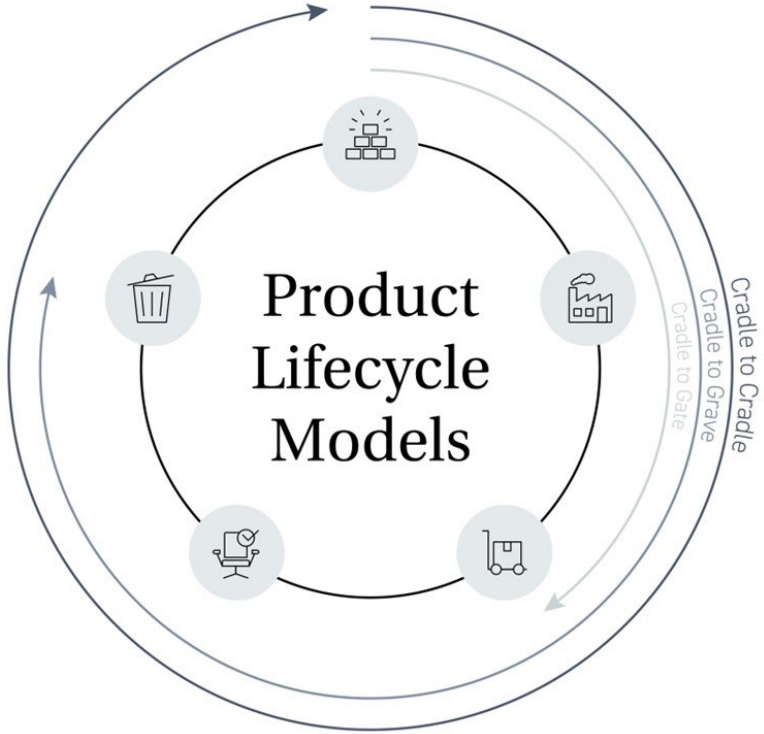
Ahrend Remode Type Ax

Results of the environmental performance indicators (LCA results) of one functional unit (one Ahrend Remode Type Ax)

Energy, primary, non-renewable, excluding materials (PENRE)	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Energy, primary, non-renewable, materials (PENRM)	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Energy, primary, renewable (PERT)	MJ	9,77E+01	6,47E-02	4,22E-03	0,00E+00	0,00E+00	3,42E-02	1,92E+00	1,06E-02	-4,98E+00	9,48E+01
Energy, primary, renewable, excluding materials (PERE)	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Energy, primary, renewable, materials (PERM)	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Energy, primary, total (PET)	MJ	1,34E+03	4,85E+00	1,72E-01	0,00E+00	0,00E+00	2,56E+00	2,02E+01	5,90E-01	-1,67E+02	1,20E+03
Exported energy, electric (EEE)	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Exported energy, thermal (EET)	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Materials for energy recovery (MER)	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Materials for recycling (MFR)	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Secondary fuel, non-renewable (NRSF)	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Secondary fuel, renewable (RSF)	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Secondary material (SM)	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Waste, hazardous (HWD)	kg	3,01E-03	1,15E-05	8,44E-07	0,00E+00	0,00E+00	6,09E-06	3,53E-05	8,14E-07	1,57E-03	4,63E-03
Waste, non-hazardous (NHWD)	kg	9,02E+00	2,80E-01	3,61E-02	0,00E+00	0,00E+00	1,48E-01	3,82E-01	2,15E+00	-1,10E+00	1,09E+01
Waste, radioactive (RWD)	kg	2,78E-03	3,07E-05	6,44E-07	0,00E+00	0,00E+00	1,62E-05	6,43E-05	3,20E-06	-9,26E-05	2,80E-03
Water, fresh water use (FW)	m3	1,17E+00	5,11E-04	9,46E-05	0,00E+00	0,00E+00	2,69E-04	3,44E-02	5,62E-04	-3,87E-02	1,17E+00

Additional technical information

Modules A1 to A3 cover the material extraction and production, beginning with A1 focusing on the extraction of raw materials for the Remode chair and the transport plus packaging of these raw materials. In module A2 the transportation from the material suppliers to the production site of Ahrend in Sint-Oedenrode is calculated. The energy consumption of the production site is considered in Module A3. Furthermore, the production waste is taking into account in this module. The fabrics have a production waste of 1,7%. In addition, as a worst-case scenario, 1% production waste for every material is accounted. For the end-of-life treatment percentages and transport distances, the standard values from the NMD Assessment Method are considered. Modules A4 and A5 are part of the transport and disassembly. A4 addresses the transport from the production site to the clients. According to the NMD Assessment Method, a standard value of 150 km is taking into account. The impact of the disposal of the packaging is accounted for in Module A5. For the end-of-life treatment percentages and transport distances to end-of-life treatment the standard values of NMD are considered. The use phase is calculated in Module B. In the case of the chair there is no use phase which means it is zero. C1 until C4 are calculated in the End-of-Life. After their useful life the materials are disassembled manually. This means there is zero impact in C1 for the demolition. Thereafter, the materials are transported (C2) to waste processing to be processed (C3-C4). The transport distance and waste treatment values are calculated according to the NMD Assessment Method. Module D is the last module, which are the benefits and burdens for recovery and recycling. The steps of the NMD Assessment Method are followed to calculate the impact.



Disclaimer

This LCA is calculated according to the Cradle-to-Grave model. From the moment a product leaves the factory (cradle) to the end of its life cycle, in which the use phase and waste phase; namely when the waste is or is being removed, are taken into account. (grave). Please be aware that EPDs of competitors within the same product category calculated with a Cradle-to-Gate model or with different methods may not be comparable.

References

ISO 14040
DIN EN ISO 14040:2006-10, Environmental management - Life cycle assessment - Principles and framework; EN ISO 14040:2006

ISO 14044
DIN EN ISO 14044:2006-10, Environmental management - Life cycle assessment - Requirements and guidelines; EN ISO 14040:2006

ISO 14025
DIN EN ISO 14025:2011-10: Environmental labels and declarations — Type III environmental declarations — Principles and procedures

EN 15804+A2
NEN-EN 15804:2012+A2:2019: Sustainability of construction works — Environmental Product Declarations — Core rules for the product category of construction products

NMD-assessment method 1.1
'Environmental Performance Assessment Method for Construction Works', Stichting National Environmental Database, versie 1.1, maart 2022.

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Vitalising Workspaces