

Environmental Product Declaration Type III ITB No. 901/2026



Issuance date: 20.01.2026

Validity date: 20.01.2031



Vapaa

MEETING CHAIRS, STOOLS & BAR STOOLS

BASIC INFORMATION

This declaration is the Type III Environmental Product Declaration (EPD) based on EN 15804 and verified according to ISO 14025 by an external auditor. It contains the information on the impacts of the declared construction materials on the environment. Their aspects were verified by the independent body according to ISO 14025. Basically, a comparison or evaluation of EPD data is possible only if all the compared data were created according to EN 15804+A2.

Life cycle analysis (LCA):

A1-A3, C1-C4 and D modules, in accordance with EN 15804+A2

The year of preparing the EPD:

2026

Product standard:

EN 16139

Service Life:

5 years for standard product with possibility of 10 years

PCR:

ITB-PCR A (PCR based on EN 15804+A2)

Declared unit:

1 piece

Reasons for performing LCA:

B2B

Representativeness:

Polish product

ITB is the verified member
of The European Platform
for EPD program operators
and LCA practitioner
www.eco-platform.org

OWNER OF THE EPD:

Nowy Styl sp. z o.o.
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EPD PROGRAM OPERATOR:

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01/MANUFACTURER

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OUR COMPANY

Nowy Styl has been helping companies worldwide arrange office and public spaces for over 30 years. First, we define their needs, and then we choose and provide products and solutions that will make work healthier, more efficient, and more comfortable. We do it with genuine passion and satisfaction, which has led us to become one of the leading manufacturers of office and public space furniture in Europe.

Nowy Styl portfolio includes the following brands: **Nowy Styl**, Kusch+Co, Forum by Nowy Styl, SOHOS by Nowy Styl and Sitag by Nowy Styl. We present our solutions at the Office Inspiration Centre in Kraków and showrooms in London, Paris, Berlin, Munich, Prague, Bratislava, Dubai and many more. Thanks to our diverse portfolio, we provide comprehensive solutions for various spaces and needs. We equip offices, airports, stadiums, concert halls and more. We want to

offer solutions worthy of the 21st century – designed thoughtfully, with attention to comfort and safety.

Our company has earned the trust of numerous international corporations, including Siemens, Toyota, DS Smith, Honeywell, Deloitte, and ABB. Worldwide, more than 260 international airports have furnished their environments with our waiting benches, seat islands or lounge furniture. Our projects also support esteemed cultural institutions such as the Polish National Radio Symphony Orchestra in Katowice and the Munich Opera. We proudly supported stadiums for the European Football Championship (2012, 2016, 2021, 2024) and the 2022 World Cup in Qatar.

We cooperate with designers from all over the world and our products are appreciated in competitions. We have received, i. a., the Red Dot Design Award, the German Design Award, the Iconic Awards, and the Design Award.

01/MANUFACTURER

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CARBON FOOTPRINT MANAGEMENT SYSTEM

Nowy Styl has implemented a CO₂ management system for the Organization (CO₂ footprint) in accordance with the requirements stated in ISO 14064-1 and the GHG Protocol and confirmed by the CO₂ Performance Ladder certificate.

ECOVADIS PLATINUM

EcoVadis is an independent, holistic CSR assessment rating several dozen criteria in four thematic categories: human and labour rights, environment, ethics and sustainable procurement. Nowy Styl undergoes these audits for many years now. In 2022, 2023, 2024 and 2025 our company achieved the highest possible rating and was awarded the EcoVadis Platinum Medal, what places us among the top 1% of the best-rated companies.

We make our products in manufacturing plants equipped with cutting-edge technologies, located in Poland, Germany and Switzerland with a total production area of over 211,000 m². In Poland, in the Podkarpacie region, there are four plants: three in Jasło (including a fully automated office furniture factory opened in 2015) and one in Rzepedź. The company also operates a Research and Development Centre located in Jasło where innovative production technologies and product solutions are constantly developed.

INTEGRATED MANAGEMENT SYSTEM

We are aware that our operations have an impact on the natural environment, and we strive to reduce or neutralise it with future generations in mind. Nowy Styl has implemented management systems confirmed by the following certificates: quality management system EN ISO 9001, environmental management system EN ISO 14001 and occupational health and safety system EN ISO 45001.

As an extension of the existing environmental management system in Nowy Styl sp. z o.o., we have implemented an ecodesign management system based on the ISO 14006 standard (Environmental Management Systems - Guidelines for incorporating ecodesign). Ecodesign management is a methodical approach, taking into account environmental aspects during product design and development in order to reduce the negative environmental impact throughout the product's life cycle according to ISO 14040 standard (including components and raw materials).



02/PRODUCT DESCRIPTION

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Vapaa LINE



Vapaa frame chair 4L and CFS

Frame type:

4-leg, Sled

Armrests:

optional

Frame finish options:

powder coated steel, chromium plated steel

Seat and backrest:

beech plywood shell, thickness 10,5 mm

Seat and backrest finish options:

natural, stained, laminated, veneered, upholstered



Vapaa frame chair 4S

Frame type:

4-star

Armrests:

optional

Frame finish options:

powder coated steel, chromium plated steel

Seat and backrest:

beech plywood shell, thickness 10,5 mm

Seat and backrest finish options:

natural, stained, laminated, veneered, upholstered



Vapaa frame chair HKR 4L and HKR CFS

Frame type:

4-leg, Sled

Armrests:

optional

Frame finish options:

powder coated steel, chromium plated steel

Seat and backrest:

beech plywood shell, thickness 10,5 mm

Seat and backrest finish options:

natural, stained, laminated, veneered, upholstered

Certificates: GS mark, Möbelfakta for selected configurations

Application: Conference and meeting rooms

All specific product information is available at manufacturer website: www.nowystyl.com/en/vapaa.

03/LIFE CYCLE ASSESSMENT (LCA)

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GENERAL RULES APPLIED

ALLOCATION

The allocation rules used for this EPD are based on general ITB-PCR A. Production line process carried out in four factories of Nowy Styl sp. z o.o. located in Jasło and Rzepedź (Poland). Allocation was done on product mass basis. All impacts from raw materials extraction are allocated in A1 module of the LCA. 100% of impacts from the line production of Nowy Styl sp. z o.o. were inventoried. Utilization of packaging material was taken into consideration. Module A2 includes transport of raw materials such as wood-faced boards, wood, polymer components, steel elements, papers, additives, ancillary materials and packaging materials from their suppliers to Nowy Styl sp. z o.o. in Jasło and in Rzepedź. Municipal wastes of factory were allocated to module A3. Energy supply was inventoried for whole factory and was allocated to the production. Emissions in the factory are measured and were allocated to module A3.

The green energy purchased by Nowy Styl sp. z o.o. in 2024 was included in the LCA calculation.

SYSTEM LIMITS

The life cycle analysis of the declared products covers "Product Stage", A1-A3, C1, C2, C3, C4 and D modules (Cradle-to-Gate with options) accordance with ISO 14040 and PCR A v.1.6. The details of systems limits are provided in product technical report. Energy and water consumption, emissions as well as information on generated wastes were inventoried and were included in the calculations. It can be assumed that the total sum of omitted processes does not exceed 5% of all impact categories. In accordance with ITB PCR A, machines and facilities (capital goods) required for the production as well as transportation of employees were not included in LCA.

A1 AND A2 MODULES:

RAW MATERIALS SUPPLY & TRANSPORT

Wood-faced boards, wood, polymer components, steel elements, papers, additives, ancillary materials and packaging materials come from Polish and foreign suppliers. Means of transport include lorries. European standards for average combustion were used for calculations.

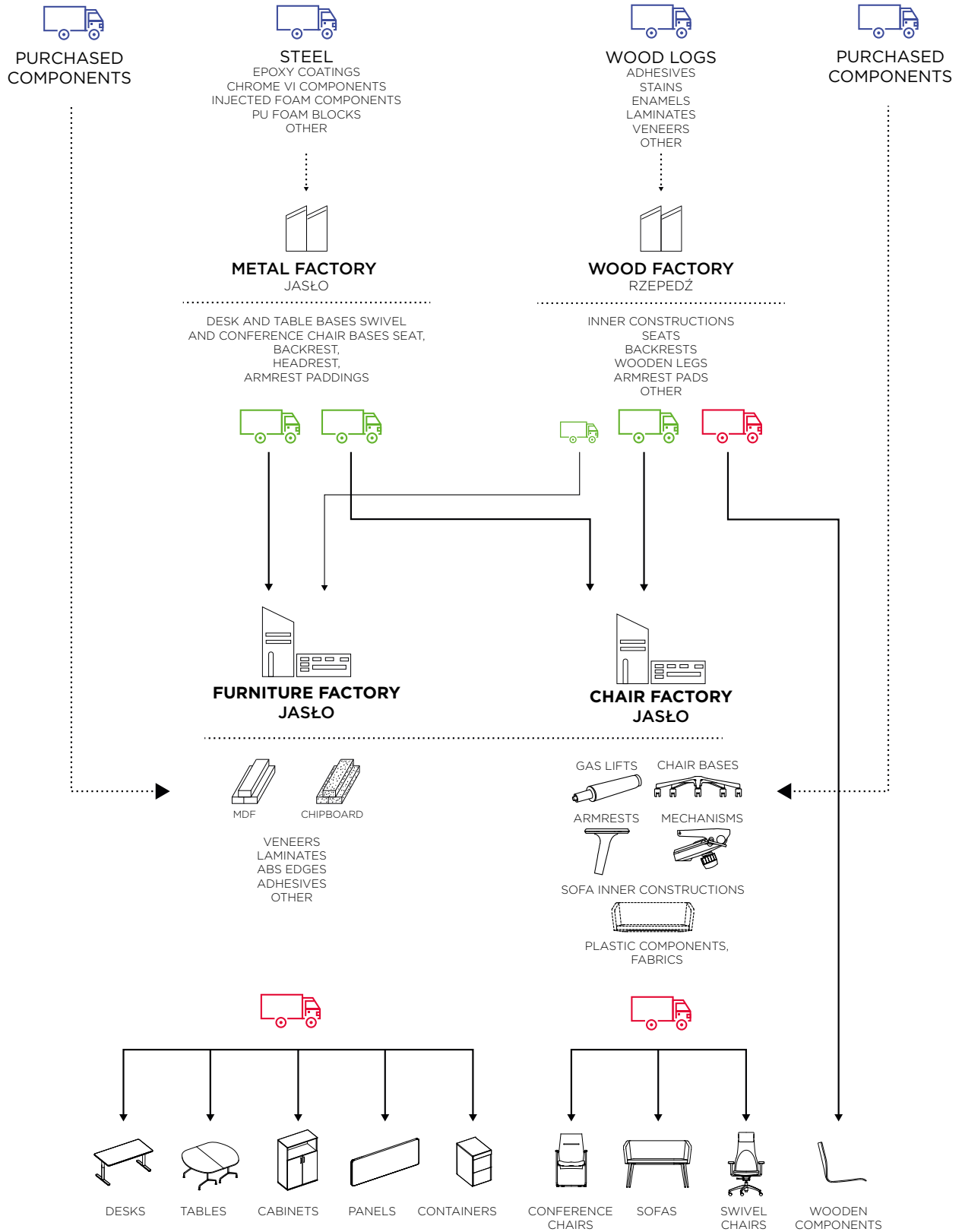
A3 PRODUCTION

As shown in the scheme of manufacturing on page 6, Nowy Styl sp. z o.o. manufactures products in four factories in Poland. Two of them process purchased materials such as metal and wood into components. Then, the furniture and chair factories use those components, as well as purchased components to assemble products, which are then ready for distribution. Some of the components made in the wood factory are also sold as finished products.

03/LIFE CYCLE ASSESSMENT (LCA)

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A3 PRODUCTION



LEGEND:



PURCHASED COMPONENTS



PRODUCED COMPONENTS



SOLD PRODUCTS

03/LIFE CYCLE ASSESSMENT (LCA)

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GENERAL RULES APPLIED

END OF LIFE SCENARIOS

It is assumed that at the end-of-life, the declared product is dismantled manually or with the use of electrical tools. The resulting waste is transported to waste processing plant distant by 100 km on 24t lorry (Euro 5) with 90% capacity utilization (module C2). Selectively recovered materials undergo recycling, energy recovery or landfilling according to national treatment practice of the industrial waste and recommendations of Nowy Styl sp. z o.o. Environmental burdens declared in module C4 are associated with waste-specific emissions to air and groundwater. A potential credit resulting from the recycling and energy recovery are presented in module D.

TABLE 1

End of life scenario for the declared products.

Material	Material recovery	Energy recovery	Recycling	Landfilling
Polymers	100%	10%	85%	5%
Aluminium	100%	0%	98%	2%
Steel	100%	0%	98%	2%
Wood And Wooden-Based Components	100%	8%	90%	2%
Cartonboard	100%	20%	80%	0%

DATA COLLECTION PERIOD

Primary data provided by Nowy Styl sp. z o.o. covers a period of 01.01.2024 – 31.12.2024 (1 year). The life cycle assessments were prepared for Poland and Europe as reference area.

DATA QUALITY

The data selected for LCA analysis originate from ITB-LCI questionnaires completed by Nowy Styl Sp. z o.o. using the inventory data, ITB and Ecoinvent databases. No specific data collected is older than five years and no generic datasets used are older than ten years. The representativeness, completeness, reliability, and consistency are judged as good.

ASSUMPTIONS AND ESTIMATES

The impacts of the representative the specific product were aggregated using weighted average. Impacts were inventoried and calculated for all products.

CALCULATION RULES

LCA was done in accordance with ITB PCR A using ITBLCA-tool.

DATA BASES

The data for the processes come from the following databases: Ecoinvent v.3.10, specific EPDs, ITB-Data. specific data quality analysis was a part of the external audit.

03/LIFE CYCLE ASSESSMENT (LCA)

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RESULTS

DECLARED UNIT

The declaration refers to declared unit (DU): 1 Vapaa frame chair 4L & CFS or 1 Vapaa frame chair 4S or 1 Vapaa frame chair HKR 4L & HKR CFS produced by Nowy Styl sp. z o.o. under the brand Nowy Styl.

TABLE 2

System boundaries for the environmental characteristic of the Vappa produced by Nowy Styl sp. z o.o.

Product stage			Construction process		Use stage							End of life				Benefits and loads beyond the system boundary
Raw material supply	Transport	Manufacturing	Transport to construction site	Construction-installation process	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	Deconstruction demolition	Transport	Waste processing	Disposal	Reuse-recovery-recycling potential
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
MD	MD	MD	MNA	MNA	MNA	MNA	MNA	MNA	MNA	MNA	MNA	MD	MD	MD	MD	MD

Environmental assessment information

(MNA – Module not assessed, MD – Module Declared, INA – Indicator Not Assessed)

03/LIFE CYCLE ASSESSMENT (LCA)

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RESULTS

TABLE 3

Life cycle assessment (LCA) results for specific product.

Vapaa										
Environmental impacts (DU): 1 Vapaa frame chair 4L & CFS (weight: 14.46 kg*)										
IMPACT CATEGORIES	UNIT	A1	A2	A3	A1-A3	C1	C2	C3	C4	D
Global Warming Potential	eq. kg CO ₂	1,69E+01	1,32E+00	4,45E+00	2,27E+01	1,00E-02	2,37E-01	3,44E+00	1,73E-01	-1,44E+01
Greenhouse gas potential - fossil	eq. kg CO ₂	1,94E+01	1,31E+00	3,65E+00	2,44E+01	9,73E-03	2,36E-01	8,48E-01	1,73E-01	-1,34E+01
Greenhouse gas potential - biogenic	eq. kg CO ₂	-2,59E+00	4,48E-03	8,14E-01	-1,77E+00	2,84E-04	8,07E-04	2,59E+00	1,24E-04	-9,73E-01
Global warming potential - land use and land use change	eq. kg CO ₂	2,98E-02	5,15E-04	7,10E-04	3,11E-02	3,41E-06	9,27E-05	1,34E-04	9,27E-06	-1,71E-02
Stratospheric ozone depletion potential	eq. kg CFC 11	1,29E-06	3,03E-07	9,63E-08	1,69E-06	1,99E-10	5,46E-08	1,04E-06	4,18E-10	-9,30E-07
Soil and water acidification potential	eq. mol H ⁺	1,08E-01	5,32E-03	4,09E-02	1,54E-01	1,08E-04	9,58E-04	7,06E-03	1,15E-04	-8,49E-02
Eutrophication potential - freshwater	eq. kg P	6,72E-03	8,81E-05	6,25E-03	1,31E-02	1,85E-05	1,59E-05	5,74E-06	1,73E-06	-7,18E-03
Eutrophication potential - seawater	eq. kg N	2,10E-02	1,61E-03	6,34E-03	2,90E-02	1,56E-05	2,89E-04	2,40E-02	3,83E-04	-1,59E-02
Eutrophication potential - terrestrial	eq. mol N	1,83E-01	1,75E-02	5,74E-02	2,58E-01	1,32E-04	3,16E-03	4,54E-02	4,70E-04	-1,42E-01
Potential for photochemical ozone synthesis	eq. kg NMVOC	7,22E-02	5,37E-03	1,88E-02	9,64E-02	3,69E-05	9,66E-04	9,90E-03	2,04E-04	-5,30E-02
Potential for depletion of abiotic resources - non-fossil resources	eq. kg Sb	4,99E-04	4,65E-06	3,46E-06	5,07E-04	4,74E-08	8,37E-07	1,92E-07	3,64E-08	-2,79E-04
Abiotic depletion potential - fossil fuels	MJ	4,59E+02	1,95E+01	9,03E+01	5,69E+02	1,65E-01	3,50E+00	8,04E-01	3,60E-01	-3,13E+02
Water deprivation potential	eq. m ³	1,78E+01	9,00E-02	1,17E+00	1,91E+01	3,41E-03	1,62E-02	1,89E-02	1,71E-03	-1,05E+01
Environmental impacts (DU): 1 Vapaa frame chair 4L & CFS (weight: 14.46 kg*)										
IMPACT CATEGORIES	UNIT	A1-A3		A4-A5		C1-C4		D		
Particulate matter	Disease incidence	INA		INA		INA		INA		
Potential human exposure efficiency relative to U235	eg. kBq U235	INA		INA		INA		INA		
Potential comparative toxic unit for ecosystems	CTUe	INA		INA		INA		INA		
Potential comparative toxic unit for humans (cancer effects)	CTUh	INA		INA		INA		INA		
Potential comparative toxic unit for humans (non- cancer effects)	CTUh	INA		INA		INA		INA		
Potential soil quality index	dimensionless	INA		INA		INA		INA		

*Product weight includes: material, packaging waste and all packaging materials

03/LIFE CYCLE ASSESSMENT (LCA)

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RESULTS

TABLE 4

Life cycle assessment (LCA) results for specific product.

Environmental impacts (DU): 1 Vapaa frame chair 4L & CFS (weight: 14.46 kg*)										
ASPECTS	UNIT	A1	A2	A3	A1-A3	C1	C2	C3	C4	D
Consumption of renewable primary energy - excluding renewable primary energy sources used as raw materials	MJ	4,81E+01	2,79E-01	1,71E+01	6,55E+01	1,22E-02	5,03E-02	1,48E-02	5,39E-03	-3,60E+01
Consumption of renewable primary energy resources used as raw materials	MJ	6,57E+01	0,00E+00	0,00E+00	6,57E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-3,61E+01
Total consumption of renewable primary energy resources (primary energy and primary energy resources used as raw materials)	MJ	1,23E+02	2,79E-01	1,71E+01	1,40E+02	1,22E-02	5,03E-02	1,48E-02	5,39E-03	-7,70E+01
Consumption of non-renewable primary energy, excluding non-renewable primary energy resources used as raw materials	MJ	1,91E+02	1,95E+01	6,35E+01	2,74E+02	1,65E-01	3,50E+00	3,91E+01	-5,63E+01	-1,51E+02
Consumption of non-renewable primary energy resources used as raw materials	MJ	1,32E+02	0,00E+00	2,69E+01	1,59E+02	0,00E+00	0,00E+00	3,99E+01	5,66E+01	-8,74E+01
Total consumption of non-renewable primary energy resources (primary energy and primary energy resources used as raw materials)	MJ	4,44E+02	1,95E+01	9,03E+01	5,54E+02	1,65E-01	3,50E+00	8,05E-01	3,60E-01	-3,05E+02
Consumption of secondary materials	kg	3,44E+00	6,52E-03	1,39E-02	3,46E+00	1,51E-05	1,17E-03	3,63E-04	1,30E-04	-1,91E+00
Consumption of renewable secondary fuels	MJ	1,90E+00	7,19E-05	3,95E+00	5,84E+00	8,39E-08	1,29E-05	4,94E-06	2,44E-06	-3,21E+00
Consumption of non-renewable secondary fuels	MJ	9,10E+00	0,00E+00	0,00E+00	9,10E+00	1,33E-04	0,00E+00	0,00E+00	0,00E+00	-5,00E+00
Net consumption of freshwater resources	m³	2,45E-01	2,45E-03	1,65E-01	4,12E-01	4,47E-05	4,41E-04	7,12E-04	-5,35E-03	-2,27E-01
Environmental impacts (DU): 1 Vapaa frame chair 4L & CFS (weight: 14.46 kg*)										
WASTES	UNIT	A1	A2	A3	A1-A3	C1	C2	C3	C4	D
Hazardous waste, neutralised	kg	3,56E+00	2,18E-02	6,81E-01	4,26E+00	1,70E-06	3,93E-03	5,77E-08	6,36E-04	-2,35E+00
Non-hazardous waste, neutralised	kg	2,69E+01	3,88E-01	3,05E+01	5,78E+01	8,86E-05	6,98E-02	1,51E-01	7,18E+00	-3,18E+01
Radioactive waste	kg	2,84E-03	1,45E-06	1,25E-05	2,85E-03	1,24E-07	2,62E-07	4,29E-06	8,89E-08	-1,57E-03
Components for re-use	kg	1,12E-02	0,00E+00	0,00E+00	1,12E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-6,13E-03
Materials for recycling	kg	5,46E-02	6,03E-05	1,54E-03	5,62E-02	1,70E-07	1,08E-05	5,37E-06	6,08E-06	-3,09E-02
Materials for energy recovery	kg	3,42E-03	4,87E-07	1,28E-06	3,42E-03	1,49E-09	8,77E-08	6,70E-08	2,49E-08	-1,88E-03
Energy exported	MJ	6,76E-01	0,00E+00	4,71E-02	7,23E-01	4,91E-04	0,00E+00	8,20E-01	7,58E-05	-3,98E-01

*Product weight includes: material, packaging waste and all packaging materials

03/LIFE CYCLE ASSESSMENT (LCA)

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RESULTS

TABLE 5

Life cycle assessment (LCA) results for specific product.

Vapaa										
Environmental impacts (DU): 1 Vapaa frame chair 4S (weight: 14.76 kg*)										
IMPACT CATEGORIES	UNIT	A1	A2	A3	A1-A3	C1	C2	C3	C4	D
Global Warming Potential	eq. kg CO ₂	1,72E+01	1,34E+00	4,43E+00	2,30E+01	1,02E-02	2,42E-01	3,51E+00	1,77E-01	-1,47E+01
Greenhouse gas potential - fossil	eq. kg CO ₂	1,98E+01	1,34E+00	3,61E+00	2,48E+01	9,93E-03	2,41E-01	8,65E-01	1,77E-01	-1,36E+01
Greenhouse gas potential - biogenic	eq. kg CO ₂	-2,64E+00	4,57E-03	8,13E-01	-1,82E+00	2,90E-04	8,24E-04	2,64E+00	1,26E-04	-1,00E+00
Global warming potential - land use and land use change	eq. kg CO ₂	3,04E-02	5,25E-04	7,02E-04	3,17E-02	3,48E-06	9,46E-05	1,37E-04	9,47E-06	-1,74E-02
Stratospheric ozone depletion potential	eq. kg CFC 11	1,32E-06	3,10E-07	9,32E-08	1,72E-06	2,03E-10	5,58E-08	1,06E-06	4,27E-10	-9,46E-07
Soil and water acidification potential	eq. mol H ⁺	1,10E-01	5,43E-03	4,07E-02	1,57E-01	1,10E-04	9,78E-04	7,21E-03	1,18E-04	-8,61E-02
Eutrophication potential - freshwater	eq. kg P	6,86E-03	9,00E-05	6,21E-03	1,32E-02	1,88E-05	1,62E-05	5,85E-06	1,76E-06	-7,24E-03
Eutrophication potential - seawater	eq. kg N	2,15E-02	1,64E-03	6,30E-03	2,94E-02	1,59E-05	2,95E-04	2,45E-02	3,91E-04	-1,62E-02
Eutrophication potential - terrestrial	eq. mol N	1,87E-01	1,79E-02	5,70E-02	2,62E-01	1,35E-04	3,22E-03	4,64E-02	4,79E-04	-1,44E-01
Potential for photochemical ozone synthesis	eq. kg NMVOC	7,37E-02	5,48E-03	1,86E-02	9,79E-02	3,77E-05	9,86E-04	1,01E-02	2,08E-04	-5,38E-02
Potential for depletion of abiotic resources - non-fossil resources	eq. kg Sb	5,09E-04	4,74E-06	3,43E-06	5,17E-04	4,84E-08	8,54E-07	1,96E-07	3,72E-08	-2,84E-04
Abiotic depletion potential - fossil fuels	MJ	4,69E+02	1,99E+01	8,88E+01	5,77E+02	1,68E-01	3,58E+00	8,21E-01	3,67E-01	-3,17E+02
Water deprivation potential	eq. m ³	1,82E+01	9,19E-02	1,16E+00	1,95E+01	3,48E-03	1,65E-02	1,93E-02	1,74E-03	-1,07E+01
Environmental impacts (DU): 1 Vapaa frame chair 4S (weight: 14.76 kg*)										
IMPACT CATEGORIES	UNIT	A1-A3		A4-A5		C1-C4		D		
Particulate matter	Disease incidence	INA		INA		INA		INA		
Potential human exposure efficiency relative to U235	eg. kBq U235	INA		INA		INA		INA		
Potential comparative toxic unit for ecosystems	CTUe	INA		INA		INA		INA		
Potential comparative toxic unit for humans (cancer effects)	CTUh	INA		INA		INA		INA		
Potential comparative toxic unit for humans (non- cancer effects)	CTUh	INA		INA		INA		INA		
Potential soil quality index	dimensionless	INA		INA		INA		INA		

*Product weight includes: material, packaging waste and all packaging materials

03/LIFE CYCLE ASSESSMENT (LCA)

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RESULTS

TABLE 6

Life cycle assessment (LCA) results for specific product.

Environmental impacts (DU): 1 Vapaa frame chair 4S (weight: 14.76 kg*)										
ASPECTS	UNIT	A1	A2	A3	A1-A3	C1	C2	C3	C4	D
Consumption of renewable primary energy - excluding renewable primary energy sources used as raw materials	MJ	4,91E+01	2,85E-01	1,70E+01	6,64E+01	1,25E-02	5,13E-02	1,51E-02	5,51E-03	-3,65E+01
Consumption of renewable primary energy resources used as raw materials	MJ	6,71E+01	0,00E+00	0,00E+00	6,71E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-3,69E+01
Total consumption of renewable primary energy resources (primary energy and primary energy resources used as raw materials)	MJ	1,25E+02	2,85E-01	1,70E+01	1,42E+02	1,25E-02	5,13E-02	1,51E-02	5,51E-03	-7,84E+01
Consumption of non-renewable primary energy, excluding non-renewable primary energy resources used as raw materials	MJ	1,95E+02	1,99E+01	6,30E+01	2,78E+02	1,69E-01	3,58E+00	3,99E+01	-5,74E+01	-1,53E+02
Consumption of non-renewable primary energy resources used as raw materials	MJ	1,35E+02	0,00E+00	2,59E+01	1,61E+02	0,00E+00	0,00E+00	4,07E+01	5,78E+01	-8,83E+01
Total consumption of non-renewable primary energy resources (primary energy and primary energy resources used as raw materials)	MJ	4,53E+02	1,99E+01	8,88E+01	5,62E+02	1,69E-01	3,58E+00	8,22E-01	3,67E-01	-3,09E+02
Consumption of secondary materials	kg	3,52E+00	6,66E-03	1,37E-02	3,54E+00	1,54E-05	1,20E-03	3,71E-04	1,33E-04	-1,94E+00
Consumption of renewable secondary fuels	MJ	1,94E+00	7,34E-05	3,95E+00	5,88E+00	8,57E-08	1,32E-05	5,04E-06	2,49E-06	-3,24E+00
Consumption of non-renewable secondary fuels	MJ	9,29E+00	0,00E+00	0,00E+00	9,29E+00	1,36E-04	0,00E+00	0,00E+00	0,00E+00	-5,11E+00
Net consumption of freshwater resources	m³	2,50E-01	2,50E-03	1,64E-01	4,16E-01	4,57E-05	4,50E-04	7,26E-04	-5,46E-03	-2,29E-01
Environmental impacts (DU): 1 Vapaa frame chair 4S (weight: 14.76 kg*)										
WASTES	UNIT	A1	A2	A3	A1-A3	C1	C2	C3	C4	D
Hazardous waste, neutralised	kg	3,64E+00	2,23E-02	6,77E-01	4,34E+00	1,74E-06	4,01E-03	5,89E-08	6,49E-04	-2,38E+00
Non-hazardous waste, neutralised	kg	2,75E+01	3,96E-01	3,03E+01	5,82E+01	9,05E-05	7,13E-02	1,54E-01	7,33E+00	-3,20E+01
Radioactive waste	kg	2,90E-03	1,48E-06	1,24E-05	2,91E-03	1,26E-07	2,67E-07	4,38E-06	9,07E-08	-1,60E-03
Components for re-use	kg	1,14E-02	0,00E+00	0,00E+00	1,14E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-6,26E-03
Materials for recycling	kg	5,57E-02	6,15E-05	1,53E-03	5,73E-02	1,74E-07	1,11E-05	5,48E-06	6,21E-06	-3,15E-02
Materials for energy recovery	kg	3,49E-03	4,97E-07	1,26E-06	3,49E-03	1,52E-09	8,96E-08	6,84E-08	2,54E-08	-1,92E-03
Energy exported	MJ	6,90E-01	0,00E+00	4,68E-02	7,37E-01	5,02E-04	0,00E+00	8,37E-01	7,74E-05	-4,05E-01

*Product weight includes: material, packaging waste and all packaging materials

03/LIFE CYCLE ASSESSMENT (LCA)

Environmental Product Declaration Type III ITB No. 901/2026

RESULTS

TABLE 7

Life cycle assessment (LCA) results for specific product.

Vapaa										
Environmental impacts (DU): 1 Vapaa frame chair HKR 4L & HKR CFS (weight: 18.09 kg*)										
IMPACT CATEGORIES	UNIT	A1	A2	A3	A1-A3	C1	C2	C3	C4	D
Global Warming Potential	eq. kg CO ₂	2,11E+01	1,65E+00	5,58E+00	2,83E+01	1,25E-02	2,96E-01	4,30E+00	2,17E-01	-1,82E+01
Greenhouse gas potential - fossil	eq. kg CO ₂	2,43E+01	1,64E+00	4,73E+00	3,07E+01	1,22E-02	2,95E-01	1,06E+00	2,17E-01	-1,69E+01
Greenhouse gas potential - biogenic	eq. kg CO ₂	-3,24E+00	5,61E-03	8,45E-01	-2,39E+00	3,55E-04	1,01E-03	3,24E+00	1,55E-04	-1,31E+00
Global warming potential - land use and land use change	eq. kg CO ₂	3,73E-02	6,44E-04	9,18E-04	3,89E-02	4,26E-06	1,16E-04	1,67E-04	1,16E-05	-2,14E-02
Stratospheric ozone depletion potential	eq. kg CFC 11	1,61E-06	3,80E-07	1,37E-07	2,13E-06	2,49E-10	6,83E-08	1,30E-06	5,23E-10	-1,17E-06
Soil and water acidification potential	eq. mol H ⁺	1,35E-01	6,66E-03	5,19E-02	1,94E-01	1,35E-04	1,20E-03	8,84E-03	1,44E-04	-1,07E-01
Eutrophication potential - freshwater	eq. kg P	8,41E-03	1,10E-04	7,95E-03	1,65E-02	2,31E-05	1,99E-05	7,18E-06	2,16E-06	-9,06E-03
Eutrophication potential - seawater	eq. kg N	2,63E-02	2,01E-03	7,98E-03	3,63E-02	1,95E-05	3,62E-04	3,00E-02	4,79E-04	-2,00E-02
Eutrophication potential - terrestrial	eq. mol N	2,29E-01	2,19E-02	7,20E-02	3,23E-01	1,65E-04	3,95E-03	5,68E-02	5,87E-04	-1,78E-01
Potential for photochemical ozone synthesis	eq. kg NMVOC	9,04E-02	6,71E-03	2,41E-02	1,21E-01	4,62E-05	1,21E-03	1,24E-02	2,55E-04	-6,67E-02
Potential for depletion of abiotic resources - non-fossil resources	eq. kg Sb	6,24E-04	5,81E-06	4,42E-06	6,34E-04	5,93E-08	1,05E-06	2,40E-07	4,56E-08	-3,49E-04
Abiotic depletion potential - fossil fuels	MJ	5,74E+02	2,43E+01	1,21E+02	7,19E+02	2,06E-01	4,38E+00	1,01E+00	4,50E-01	-3,96E+02
Water deprivation potential	eq. m ³	2,23E+01	1,13E-01	1,49E+00	2,39E+01	4,26E-03	2,03E-02	2,36E-02	2,14E-03	-1,31E+01
Environmental impacts (DU): 1 Vapaa frame chair HKR 4L & HKR CFS (weight: 18.09 kg*)										
IMPACT CATEGORIES	UNIT	A1-A3		A4-A5		C1-C4		D		
Particulate matter	Disease incidence	INA		INA		INA		INA		
Potential human exposure efficiency relative to U235	eg. kBq U235	INA		INA		INA		INA		
Potential comparative toxic unit for ecosystems	CTUe	INA		INA		INA		INA		
Potential comparative toxic unit for humans (cancer effects)	CTUh	INA		INA		INA		INA		
Potential comparative toxic unit for humans (non- cancer effects)	CTUh	INA		INA		INA		INA		
Potential soil quality index	dimensionless	INA		INA		INA		INA		

*Product weight includes: material, packaging waste and all packaging materials

03/LIFE CYCLE ASSESSMENT (LCA)

Environmental Product Declaration Type III ITB No. 901/2026

RESULTS

TABLE 8

Life cycle assessment (LCA) results for specific product.

Environmental impacts (DU): 1 Vapaa frame chair HKR 4L & HKR CFS (weight: 18.09 kg*)										
ASPECTS	UNIT	A1	A2	A3	A1-A3	C1	C2	C3	C4	D
Consumption of renewable primary energy - excluding renewable primary energy sources used as raw materials	MJ	6,02E+01	3,49E-01	2,17E+01	8,23E+01	1,53E-02	6,29E-02	1,85E-02	6,75E-03	-4,52E+01
Consumption of renewable primary energy resources used as raw materials	MJ	8,22E+01	0,00E+00	0,00E+00	8,22E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-4,52E+01
Total consumption of renewable primary energy resources (primary energy and primary energy resources used as raw materials)	MJ	1,53E+02	3,49E-01	2,17E+01	1,76E+02	1,53E-02	6,29E-02	1,85E-02	6,75E-03	-9,65E+01
Consumption of non-renewable primary energy, excluding non-renewable primary energy resources used as raw materials	MJ	2,39E+02	2,43E+01	8,15E+01	3,45E+02	2,07E-01	4,38E+00	4,89E+01	-7,04E+01	-1,90E+02
Consumption of non-renewable primary energy resources used as raw materials	MJ	1,65E+02	0,00E+00	3,91E+01	2,04E+02	0,00E+00	0,00E+00	4,99E+01	7,08E+01	-1,12E+02
Total consumption of non-renewable primary energy resources (primary energy and primary energy resources used as raw materials)	MJ	5,56E+02	2,43E+01	1,21E+02	7,01E+02	2,07E-01	4,38E+00	1,01E+00	4,50E-01	-3,85E+02
Consumption of secondary materials	kg	4,31E+00	8,16E-03	1,84E-02	4,34E+00	1,88E-05	1,47E-03	4,55E-04	1,63E-04	-2,38E+00
Consumption of renewable secondary fuels	MJ	2,37E+00	8,99E-05	4,09E+00	6,46E+00	1,05E-07	1,62E-05	6,18E-06	3,05E-06	-3,55E+00
Consumption of non-renewable secondary fuels	MJ	1,14E+01	0,00E+00	0,00E+00	1,14E+01	1,67E-04	0,00E+00	0,00E+00	0,00E+00	-6,26E+00
Net consumption of freshwater resources	m³	3,06E-01	3,06E-03	2,10E-01	5,19E-01	5,60E-05	5,52E-04	8,90E-04	-6,69E-03	-2,86E-01
Environmental impacts (DU): 1 Vapaa frame chair HKR 4L & HKR CFS (weight: 18.09 kg*)										
WASTES	UNIT	A1	A2	A3	A1-A3	C1	C2	C3	C4	D
Hazardous waste, neutralised	kg	4,46E+00	2,73E-02	8,69E-01	5,35E+00	2,13E-06	4,92E-03	7,22E-08	7,96E-04	-2,94E+00
Non-hazardous waste, neutralised	kg	3,37E+01	4,85E-01	3,89E+01	7,30E+01	1,11E-04	8,73E-02	1,89E-01	8,99E+00	-4,02E+01
Radioactive waste	kg	3,55E-03	1,82E-06	1,55E-05	3,57E-03	1,55E-07	3,27E-07	5,37E-06	1,11E-07	-1,96E-03
Components for re-use	kg	1,40E-02	0,00E+00	0,00E+00	1,40E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-7,68E-03
Materials for recycling	kg	6,83E-02	7,54E-05	1,94E-03	7,03E-02	2,13E-07	1,36E-05	6,72E-06	7,61E-06	-3,87E-02
Materials for energy recovery	kg	4,27E-03	6,10E-07	1,72E-06	4,28E-03	1,87E-09	1,10E-07	8,38E-08	3,11E-08	-2,35E-03
Energy exported	MJ	8,46E-01	0,00E+00	5,97E-02	9,05E-01	6,15E-04	0,00E+00	1,03E+00	9,49E-05	-4,98E-01

*Product weight includes: material, packaging waste and all packaging materials

04/VERIFICATION

Environmental Product Declaration Type III ITB No. 901/2026

The process of verification of this EPD was in accordance with ISO 14025 and ISO 21930. After verification, this EPD is valid for a 5-year-period. EPD does not have to be recalculated after 5 years if the data have not changed significantly.

The basis for LCA analysis was ISO 14040 and ITB PCR A

Independent verification corresponding to ISO 14025 (subclause 8.1.3.)

☒ external ☐ internal

External verification of EPD: Ph.D. Eng. Halina Prejzner

LCI audit and verification: M.Sc. Eng. Michał Chwedaczuk

LCA, LCI audit and input data verification: Ph.D, D.Sc.Eng. Michał Piasecki

Note 1: The declaration owner has the sole ownership, liability, and responsibility for the information provided and contained in EPD. Declarations of construction products may not be comparable if they do not comply with EN 15804+A2. For further information about comparability, see EN 15804+A2 and ISO 14025.

Note 2: ITB is a public Research Organization and Notified Body (EC Reg. no 1488) to the European Commission and to other Member States of the European Union designated for the tasks concerning the assessment of building products' performance. ITB acts as the independent, third-party verification organization (see ISO 17025/17065/17029). ITB-EPD program is recognized and registered member of The European Platform - Association of EPD program operators and ITB-EPD declarations are registered and stored in the international ECO-PORTAL.

NORMATIVE REFERENCES

- >> ITB PCR A General Product Category Rules for Construction Products
- >> EN 15804:2012+A2:2019 Sustainability of construction works – Environmental product declarations – Core rules for the product category of construction products
- >> ISO 14025:2006, Environmental labels and declarations – Type III environmental declarations – Principles and procedures
- >> PN-EN 15942:2012 Sustainability of construction works – Environmental product declarations – Communication format business-to-business
- >> ISO 14040:2006 Environmental management – Life cycle assessment – Principles and framework
- >> KOBiZE Emission factors of CO₂, SO₂, NO_x, CO and total dust for electricity, December 2023
- >> ISO 14044:2006 Environmental management – Life cycle assessment – Requirements and guidelines



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