KUSCH+CO

Environmental Product Declaration Type III ITB No. 580/2023

Issuance date: 28.12.2023
Validity date: 28.12.2028

V-TRAVEL BENCH 2U
(FULLY UPHOLSTERED SHELLS)

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.

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

Life cycle analysis (LCA):
A1-A3, C1-C4 and D modules, in accordance with EN 15804+A2
The year of preparing the EPD:
2023
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)
Declared unit:
1 piece
Reasons for performing LCA:
B2B
Representativeness:
European product, in Germany produced

Owner of the EPD:

Kusch+Co GmbH
Gundringhausen 5
59969 Hallenberg
Germany

EPD Program Operator:

Instytut Techniki Budowlanej (ITB)
Address: Filtrowa 1, 00-611 Warsaw, Poland
Website: www.itb.pl
Contact: Michał Piasecki
m.piasecki@itb.pl
energia@itb.pl

01/MANUFACTURER

Environmental Product Declaration Type III ITB No. 580/2023

OUR COMPANY

As one of the leading manufacturers, we produce high-quality seating furniture, tables and table systems for the object area. Administration and production, with around 200 employees today, have been located in Hallenberg, North Rhine-Westphalia, since the company was founded in 1939.

Since 2019, Kusch+Co has been part of the Nowy Styl group of companies, a leading European manufacturer of comprehensive furnishing solutions for offices and public spaces. The group's solutions are presented in 29 showrooms worldwide, including London, Paris, Warsaw, Munich, Prague and Dubai.

Our high design and functionality standards characterise the broad product portfolio, with which we adapt to the individual needs of users and constantly develop the collection accordingly. Especially in the furnishing areas of Working, Seminar, Dining, Waiting, Travel and Care, we have built up extensive expertise to date and consolidated it thanks to our high quality awareness: In the area of "Airport Seating", we are one of the world market leaders with the furnishing of waiting areas at over 260 international airports.

With the Kusch+Co fire prevention concept, contract furniture does not have to forego seating comfort and modern design even in fire-sensitive areas. Special wood varnish, fire protection fabric and fire-resistant cover materials ensure the highest level of safety.

The kuschmed® Hygienic-Line equips many products in the furniture range with certified hygiene properties, making them fit for use in medicine and care. Many of our chair lines offer greater seat heights and other features to support people with limited mobility.

As a result of successful collaboration with renowned designers, our products have been recognised with several international awards.

01/MANUFACTURER

Environmental Product Declaration Type III ITB No. 580/2023

ENVIRONMENTAL STANDARDS

Our furniture is characterised by durability - this is the most effective and cost-efficient way to conserve resources. With ecological foresight, we focus on sustainability from the very beginning. As early as the product development stage, we think ahead in terms of the potential environmental impact of manufacturing processes and product components. We always keep the entire product life cycle in mind - from production and delivery to the separability of materials for recycling. Back in the 1960s and 1970s, long before the certification era began, we were already pioneers, for example in the commissioning of the world's first water-based paint plant for chairs.

OUR COMMITMENT TO SUSTAINABLE PRODUCTION

The proportion of renewable raw materials, of materials that can be separated by type and easily recycled is very high in our products. For most of them, it is already over 90 %. It is also important to us to use materials that are completely or almost completely emission-free. But not only that: already in the construction process, we make sure to use as little material and energy as possible pioneers, for example in the commissioning of the world's first water-based paint plant for chairs.

We ensure the environmental suitability of our suppliers' products through supplier audits, concrete agreements, initial sample test reports and strict incoming goods inspections. Environmental protection is firmly anchored in our company and recorded in writing according to DIN EN ISO 14001. Every two years we have an environmental audit carried out by the German Association for the Certification of Management Systems.

- Quality management according to DIN EN ISO 9001
- Environmental management according to DIN EN ISO 14001
- Occupational health and safety management according to DIN EN ISO 45001

For us, sustainability is the feasible, sustainable and payable combination of ecology, economy and CSR, not only for products, but especially also for communication with people, employees and partners. Of course, all recyclable plastic components already receive the reference to material identification, recycling marks and date stamps for sorting and traceability in the drawing creation. Of course, we create and pursue environmental goals as part of the annually binding energy audit in accordance with ISO 50001. We voluntarily comply with the 10 principles of the Global Compact.

QUALITY ASSURED

We set high standards - and have done so for over 80 years. A chair, armchair, lounge furniture or table from Kusch+Co should not only fulfil the legally prescribed standards and regulations, it must also comply with our principle "Quality is irreplaceable". Our products therefore usually meet higher test requirements than those stipulated in the normative tests. The most stringent tests in our own test laboratory, which go far beyond the standards, tested continuous load-bearing capacity of up to 150 kg in a wide range of programmes, as well as the GS certificate and declarations of conformity are standard for us.

02/PRODUCT DESCRIPTION

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V-TRAVEL BENCH 2U

V-TRAVEL BENCH 2U
(FULLY UPHOLSTERED SHELLS)

PRODUCT DESCRIPTION:
Benches V-Travel
Versions: 2-seater bench
Frame: anodized extruded aluminium beam
Legs: polished or powder coated die-cast aluminium
Armrests: die-cast aluminium
Seat shell: fully upholstered
Tops (optional): full core HPL
Glides: plastic
Floor fixation (optional): invisibly incorporated in glide or leg

CERTIFICATES:
GS Mark

APPLICATIONS:
Public Areas, Airports

All specific product technical data is available at manufacturer www.kusch.com

03/LIFE CYCLE ASSESSMENT (LCA)

Environmental Product Declaration Type III ITB No. 580/2023

GENERAL RULES APPLIED

ALLOCATION

The allocation rules used for this EPD are based on general ITB-PCR A v. 1.6. Production line process is carried out in Hallenberg (Germany). 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 Kusch+Co factory. Were inventoried. Utilization of packaging material was taken into consideration. Module A2 includes transport of raw materials such as aluminium, wood, polymer components, steel elements, papers, additives, ancillary materials and packaging materials from their suppliers to Kusch+Co manufacturing plant in Hallenberg. 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.

SYSTEM LIMITS

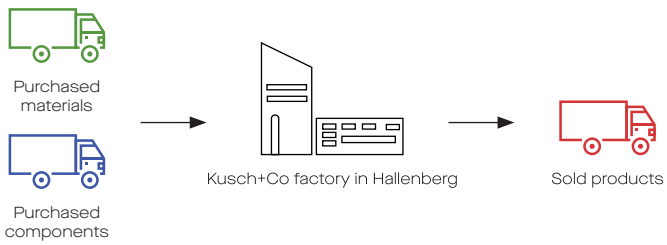
The life cycle analysis of the declared products covers “Product Stage”, A1-A3, C1, C2, C3, C4 and D modules (Cradle-to-Gate with options) accordance with ISO 14040 and PCR A v.1.6. The details of systems limits are provided in product technical report. Energy and water consumption, emissions as well 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 v. 1.6., 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 AND TRANSPORT

Aluminium, wood, polymer components, PU, steel elements, papers, additives, ancillary materials and packaging materials come from EU suppliers. Means of transport include lorries. European standards for average combustion were used for calculations.

A3 PRODUCTION

As shown in the scheme of Kusch+Co manufactures products in Hallenberg. Purchased elements are made of aluminium (80%), PU (17%), plastics (1%) and other. In a production process Grid electricity is consumed and natural gas and biomass for a heat production.



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 Kusch+Co GmbH. 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 specific product.

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 Kusch+Co GmbH covers a period of 01.01.2022 – 31.12.2022 (1 year). The life cycle assessments were prepared for Germany and Europe as reference area.

DATA QUALITY

The data selected for LCA analysis originate from ITB-LCI questionnaires completed by Kusch+Co GmbH 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 ITB LCA-tool.

DATA BASES

The data for the processes come from the following databases: Ecoinvent v.3.9, specific EPDs, ITB-Data. specific data quality analysis was a part of the external audit.

RESULTS

DECLARED UNIT

The declaration refers to declared unit (DU):
1 VTRAVEL BENCH 2U
(E-AA/POL BS-CT-AN4366 ARM-EI-POL
GD FFR2 ASM-U FSCMIX)
produced
by Kusch+Co GmbH (with approx. mass of 37.2 kg)

Table 2 provides a system boundaries
for the environmental characteristic
of the VTRAVEL BENCH 2U produced
by Kusch+Co GmbH in Hallenberg.

Table 2 System boundaries in a product environmental assessment

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

V-TRAVEL BENCH 2U										
Environmental impacts : (DU) 1 VTRAVEL BENCH 2U (E-AA/POL BS-CT-AN4366 ARM-EI-POL GD FFR2 ASM-U FSCMIX) / weight : 37.2 kg*										
IMPACT CATEGORIES	UNIT	A1	A2	A3	A1-A3	C1	C2	C3	C4	D
Global Warming Potential	eq. kg CO2	9.13E+01	5.58E+00	4.97E-01	9.74E+01	1.13E-02	8.17E-01	3.33E+00	1.97E-02	-3.25E+01
Greenhouse gas potential - fossil	eq. kg CO2	9.13E+01	5.56E+00	4.18E-01	9.72E+01	1.13E-02	1.87E-01	3.33E+00	1.95E-02	-3.20E+01
Greenhouse gas potential - biogenic	eq. kg CO2	-9.19E-01	1.90E-02	2.66E-02	-8.74E-01	3.20E-04	6.39E-04	4.80E-04	1.96E-04	-1.70E-01
Global warming potential - land use and land use change	eq. kg CO2	1.33E+00	2.18E-03	4.40E-04	1.33E+00	3.84E-06	7.34E-05	3.63E-04	1.97E-05	-3.61E-01
Stratospheric ozone depletion potential	eq. kg CFC 11	8.24E-06	1.29E-06	3.78E-08	9.57E-06	2.24E-10	4.33E-08	2.81E+01	5.92E-09	-2.25E-06
Soil and water acidification potential	eq. mol H+	1.07E+00	2.26E-02	8.84E-04	1.09E+00	1.22E-04	7.59E-04	4.14E-02	1.64E-04	-2.81E-01
Eutrophication potential - freshwater	eq. kg P	6.29E-02	3.74E-04	3.79E-04	6.37E-02	2.08E-05	1.26E-05	1.56E-05	5.65E-06	-1.52E-02
Eutrophication potential - seawater	eq. kg N	1.09E-01	6.81E-03	2.36E-04	1.16E-01	1.76E-05	2.29E-04	7.69E-02	5.67E-05	-2.90E-02
Eutrophication potential - terrestrial	eq. mol N	1.07E+00	7.43E-02	1.89E-03	1.15E+00	1.49E-04	2.50E-03	2.51E-01	6.16E-04	-2.91E-01
Potential for photochemical ozone synthesis	eq. kg NMVOC	3.71E-01	2.27E-02	3.15E-03	3.97E-01	4.16E-05	7.66E-04	5.84E-02	1.78E-04	-1.09E-01
Potential for depletion of abiotic resources - non-fossil resources	eq. kg Sb	1.02E-03	1.97E-05	3.37E-07	1.04E-03	5.34E-08	6.63E-07	5.21E-07	6.59E-08	-2.53E-04
Abiotic depletion potential - fossil fuels	MJ	1.66E+03	8.25E+01	7.37E+00	1.75E+03	1.86E-01	2.78E+00	2.18E+00	4.50E-01	-3.85E+02
Water deprivation potential	eq. m3	1.12E+02	3.81E-01	5.09E-02	1.13E+02	3.84E-03	1.28E-02	6.29E-02	2.61E-03	-2.81E+01

Table 4 Life cycle assessment (LCA) results for specific product

Environmental impacts : (DU) 1 VTRAVEL BENCH 2U (E-AA/POL BS-CT-AN4366 ARM-EI-POL GD FFR2 ASM-U FSCMIX) / weight : 37.2 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	INA	INA	INA	INA	INA	INA	INA	INA	INA
Consumption of renewable primary energy resources used as raw materials	MJ	INA	INA	INA	INA	INA	INA	INA	INA	INA
"Total consumption of renewable primary energy resources (primary energy AND primary energy resources used as raw materials)"	MJ	4.79E+02	1.18E+00	7.98E-01	4.81E+02	1.38E-02	3.98E-02	4.01E-02	7.90E-03	-1.06E+02
"Consumption of non-renewable primary energy, excluding non-renewable primary energy resources used as raw materials"	MJ	INA	INA	INA	INA	INA	INA	INA	INA	INA
Consumption of non-renewable primary energy resources used as raw materials	MJ	INA	INA	INA	INA	INA	INA	INA	INA	INA
„Total consumption of non-renewable primary energy resources (primary energy and primary energy resources used as raw materials)"	MJ	1.64E+03	8.25E+01	7.69E+00	1.73E+03	1.86E-01	2.78E+00	2.19E+00	4.86E-01	-3.85E+02
Consumption of secondary materials	kg	2.01E+01	2.77E-02	6.66E-04	2.01E+01	1.70E-05	9.31E-04	9.87E-04	0.00E+00	3.15E+01
Consumption of renewable secondary fuels	MJ	1.89E+00	3.05E-04	3.74E-06	1.89E+00	9.45E-08	1.03E-05	1.34E-05	0.00E+00	-1.54E-03
Consumption of non-renewable secondary fuels	MJ	9.68E+00	0.00E+00	0.00E+00	9.68E+00	1.50E-04	0.00E+00	0.00E+00	0.00E+00	-2.58E-02
Net consumption of freshwater resources	m3	2.26E+00	1.04E-02	1.37E-02	2.28E+00	5.04E-05	3.49E-04	1.93E-03	7.02E-05	-6.29E-01
Environmental impacts : (DU) 1 VTRAVEL BENCH 2U (E-AA/POL BS-CT-AN4366 ARM-EI-POL GD FFR2 ASM-U FSCMIX) / weight : 37.2 kg*										
WASTES	UNIT	A1	A2	A3	A1-A3	C1	C2	C3	C4	D
Hazardous waste, neutralised	kg	2.45E+00	9.26E-02	9.06E-03	2.55E+00	1.92E-06	3.12E-03	1.57E-07	7.08E-07	-6.01E+00
Non-hazardous waste, neutralised	kg	2.05E+01	1.64E+00	1.80E+00	2.39E+01	9.98E-05	5.53E-02	4.10E-01	1.85E+00	-3.26E+00
Radioactive waste	kg	2.08E-02	6.16E-06	2.81E-05	2.09E-02	1.39E-07	2.07E-07	1.17E-05	2.74E-06	-4.84E-03
Components for re-use	kg	1.24E-02	0.00E+00	5.73E-02	6.97E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for recycling	kg	6.45E-02	2.55E-04	5.00E-02	1.15E-01	1.92E-07	8.60E-06	1.46E-05	0.00E+00	-1.93E-03
Materials for energy recovery	kg	3.82E-03	2.07E-06	1.14E-02	1.52E-02	1.68E-09	6.95E-08	1.82E-07	0.00E+00	-8.29E-06
Energy exported	MJ	1.27E+00	0.00E+00	2.11E-03	1.27E+00	5.54E-04	0.00E+00	2.23E+00	0.00E+00	-2.48E-01

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

04/VERIFICATION

Environmental Product Declaration Type III ITB No. 580/2023

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 EN 15804 and ITB PCR A

Independent verification corresponding to ISO 14025 (subclause 8.1.3.)

[X] external [ ] internal

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

LCA, LCI audit and input data verification:
Ph.D, D.Sc.Eng. Michał Piasecki.
m.piasecki@itb.pl

Signature Not Verified
Dokument podpisany przez Michał Piasecki, ITB
Data: 2024.01.22 12:55:17 CET

The declaration owner has the sole ownership, liability, and responsibility for the declaration. 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 and ISO 14025.

Instytut Techniki Budowlanej
00-611 Warsaw, Filtrowa 1

Thermal Physics, Acoustics and Environment Department
02-656 Warsaw, Ksawerów 21

CERTIFICATE № 580/2023
of TYPE III ENVIRONMENTAL DECLARATION

Products:
VTRAVEL BENCH 2U
(E-AA/POL BS-CT-AN4366 ARM-EI-POL GD FFR2 ASM-U FSCMIX)

Manufacturer:
Kusch+Co GmbH
Gundringhausen 5, 59969 Hallenberg, Germany

confirms the correctness of the data included in the development of Type III Environmental Declaration and accordance with the requirements of the standard

EN 15804+A2

Sustainability of construction works.
Environmental product declarations.
Core rules for the product category of construction products.

This certificate, issued on 28th December 2023 is valid for 5 years or until amendment of mentioned Environmental Declaration

Head of the Thermal Physic, Acoustics and Environment Department
Agnieszka Winkler-Skalna, PhD

INSTYTUT TECHNIKI BUDOWLANEJ

Deputy Director for Research and Innovation
Krzysztof Kuczyński, PhD

Warsaw, December 2023

REFERENCES NORMATIVES

- >> ITB PCR A General Product Category Rules for Construction Products
- >> ISO 14025:2006, Environmental labels and declarations – Type III environmental declarations – Principles and procedures
- >> ISO 14040:2006 Environmental management – Life cycle assessment – Principles and framework
- >> ISO 14044:2006 Environmental management – Life cycle assessment – Requirements and guidelines
- >> EN 15804:2012+A2:2019 Sustainability of construction works – Environmental product declarations – Core rules for the product category of construction products
- >> PN-EN 15942:2012 Sustainability of construction works – Environmental product declarations – Communication format business-to-business
- >> KOBiZE Wskaźniki emisyjności CO2, SO2, NOx, CO i pyłu całkowitego dla energii elektrycznej, grudzień 2021 r.

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00-611 Warszawa, ul. Filtrowa 1