

ZEITRAUM

WAITER
WAITRESS

Design by Formstelle, 2003



Furniture Footprint

WAITER, WAITRESS

Design by Formstelle, 2003

WAITER and WAITRESS harmonise together in a wide range of situations. They also work well alone and are functional and nice to look at and touch.

ZEITRAUM furniture meets the highest quality and environmental standards and is primarily made of solid wood. All the materials we use come from responsible manufacturing and are for the most part sourced directly from Germany. The following describes the product: WAITER, WAITRESS. Due to the proportion of renewable raw materials, among other things, ZEITRAUM products can contribute to a good rating in certification programmes for sustainable buildings, such as LEED. For more information, please do not hesitate to contact us at any time.

Product details

Product category	Occasional furniture			
Weight (PLAISIR 2)	ca. 7 kg			

Environmental details

Recycled content/ renewable raw materials	ca. 99,2 % renewable materials			
Recyclability	100 % wood (waste wood category 2)			
Repairability	Due to the modular construction and the use of solid wood, the furniture can be repaired and refurbished almost indefinitely. We will be happy to assist with spare parts and service where necessary and possible.			

Manufacturing details

Furniture element	Production site	Production partner since	Visited by ZEITRAUM	Code of Conduct signed
Complete furniture	Bavaria, Germany	2012	Yes	Yes

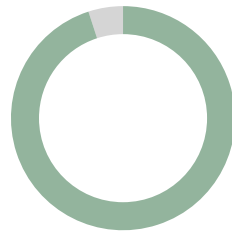
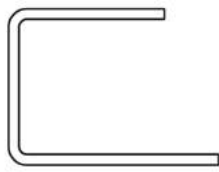
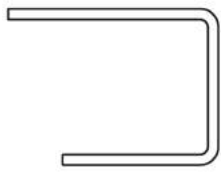
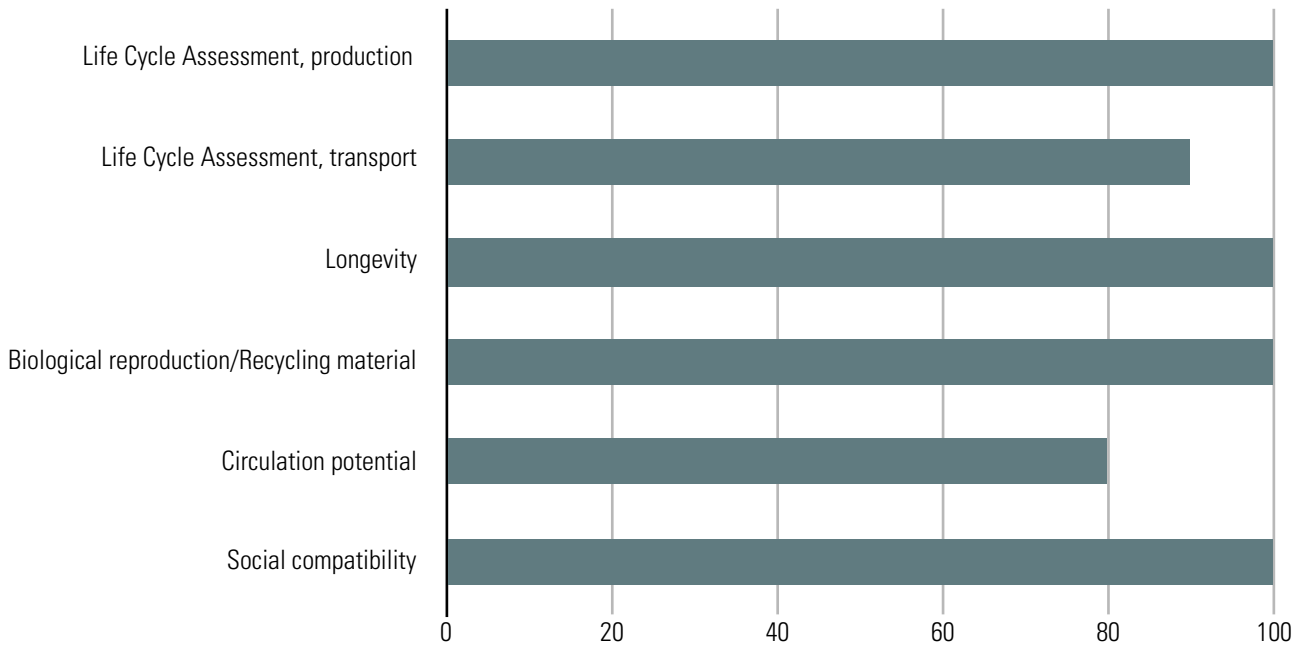
Packaging

Flatpack	No
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Warehouse

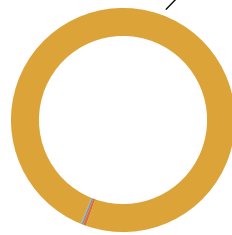
Country	Federal state
Germany	Bavaria

WAITER; oak



95 %

- wood/wood based material
- steel
- natural oil
- PVAC adhesive



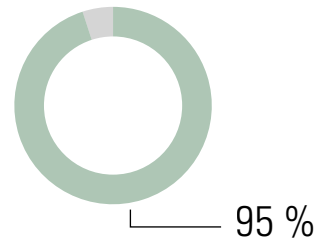
wood/wood based material

WAITER; oak	Material/Product rating				
	Oak	Wool fleece	Natural oil, Osmo	PVAC	Weighted rating, %
Life Cycle Assessment, production	10	5	5	10	99,66 %
Life Cycle Assessment, transport	9	5	9	6,5	89,787 %
Longevity	10	5	10	9	99,766 %
Biological reproduction/Recycling material	10	10	6	0	99,744 %
Circulation potential	8	10	10	4	80,056 %
Social compatibility	10	8	10	9	99,886 %
Average rating, $\bar{\sigma}$	9,5	7,166	8,333	6,416	Total weight
Share in kg	7,4	0,03	0,018	0,011	7,459
Share in %	99,2 %	0,4 %	0,24 %	0,14 %	
Weighted rating	9,424	0,028	0,019	0,008	
Product rating in %	94,79				

Packaging	Material/Product rating		
	Cardboard	PE fleece	Weighted rating, %
Life Cycle Assessment, production	10	3	96,812 %
Life Cycle Assessment, transport	9	6,5	88,856 %
Longevity	4	5	40,45 %
Biological reproduction/Recycling material	6	0	57,27 %
Circulation potential	10	10	99,99 %
Social compatibility	10	9	99,536 %
Average rating, $\bar{\sigma}$	8,166	5,583	Total weight
Share in kg	2,1	0,1	2,2
Share in %	95,45 %	4,54 %	
Weighted rating	7,794	0,253	
Product rating in %	80,47		



1 Oak



Tab. 1 A: Material data sheet, oak, general¹²

Material group	Natural material; wood; hardwood
Botanical name	<i>Quercus robur L./Q. patrea Liebl. (Fagaceae)</i>
Name	European Oak (GB, US); Eiche (D), Sommereiche (D); Chêne (F)
Material Norm. Ref.	DIN EN 13556: QCXE
Origin	Germany, (Central Europe)
Occurrence	Europe to Asia Minor; North America; most common European occurrence in France
Use	Solid and veneer, mainly sliced veneer; furniture and interior fittings; paneling and parquet; structural timber, etc.

¹ WAGENFUEHR, R. (2007) - Wood Atlas. (6) Leipzig: Hanser Wirtschaft, Fachbuchverlag Leipzig, pp. 255-277

² LOHMANN, U. (2010) - Wood encyclopedia. The standard work for wood and forestry. (4) Hamburg: Nikol-Verlag, pp. 284-285

Tab. 1 B: Material data sheet, oak, specific³

General description

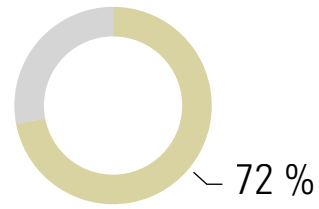
Certifications/Information	FSC and PEFC on request	
Life cycle assessment data hardwood, average (GER)		10
Resource input per kg	A1-A3	
Total non-renewable primary energy (PENRT)	2,18 MJ	10
Use of freshwater resources (FW)	0,00048 m ³	10
Environmental impact per m³		
Global Warming Potential (GWP)	-1,74 Kg CO ₂ -eqv.	10
Environmental impact Transport, per 1000 kgkm (690 kg/m³)		9
Production site: Germany/ZEITRAUM		
Truck - ca. 300 km	A4	10
Total non-renewable primary energy (PENRT)	362,4 MJ	
Use of freshwater resources (FW)	0,019164 m ³	
Global Warming Potential (GWP)	26,907 Kg CO ₂ -eqv.	
Main raw material origin: Germany, Central Europe/Production site		
Truck - ca. 1500 km	A4	8
Total non-renewable primary energy (PENRT)	1812 MJ	
Use of freshwater resources (FW)	0,09582 m ³	
Global Warming Potential (GWP)	134,535 Kg CO ₂ -eqv.	
Sustainability Assessment		
Longevity	Very durable/repairable (> 20 years)	10
Biological reproduction/ recycled material	100 %	10
Circulation potential	70 % - 99 % (technological/recycling)	8
Socially compatible	Yes	10
Total average rating		9,5
Processing		
Mechanical	Good; can be cut and peeled, suitable for turning and carving; pre-drill thin wood for nailing	
Drying	Moderately good; slow; tendency to tear and warp; predrying outdoors favorable; good durability	

³ BMI 2021: Oekobaudat. Database <https://www.oekobaudat.de/no_cache/en/database/search.html> Accessed, on 10/27/2021

Adhesion	Good; alkalis can cause stains	
Surface finishing	Good; can be stained and varnished, if necessary use pore filler when varnishing; tinting of wood color by smoking	
Natural durability DIN EN 350-2	durable; sapwood low; heartwood durable; also in water; durability class 2	
Physical properties		
Kiln density (0 % wood moisture content)	390... 650... 930 kg/m ³	
Bulk density (12 - 15 % wood moisture)	430... 690... 960 kg/m ³	
Pore ratio	ca. 57 %	
Shrinkage rate at 1 % moisture reduction	radial - 0,20 %; tangential - 0,32 %; volume - 0,45 %	
Mechanical properties		
Compressive strength (σ_{dB})	Q. robur: 54... 61... 67 N/mm ² Q. petraea: 48... 65... 70 N/mm ²	
Flexural strength (σ_{bB})	Q. robur: 74... 88... 105 N/mm ² Q. petraea: 78... 110... 117 N/mm ²	
Tensile strength ($\sigma_{zB} $)	50... 90... 180 N/mm ²	
Tensile strength ($\sigma_{zB} \perp$)	2,6... 4,0... 9,6 N/mm ²	
Shear strength (τ_{aB})	6,0... 11,0... 13,0 N/mm ²	
Hardness (HB)	50... 66 N/mm ²	
Hardness (HB \perp)	25... 34 N/mm ²	
E-modulus ($E_b $)	Q. robur: 10000... 11700... 13200 N/mm ² Q. petraea: 9200... 13000... 13500 N/mm ²	



2 Sheep wool fleece (conventional)



Tab. 2 A: Material data sheet, fleece of virgin sheep's wool (conventional), general⁴⁵

Material group	Natural material; Textile fiber material; Natural fiber; Animal fiber
Name	Wool (GB, US); Wolle (D); Laine (FR)
Material abbreviation	WO (wool); WV (virgin wool)
Further processed in	n.a.
Occurrence	Worldwide (depending on the type of wool, or the animal of origin) Highest sheep wool production: Australia; New Zealand; China; South Africa and Argentina
Use	Clothing: light and durable clothing; underwear; outerwear; jackets and coats; scarves and hats; blankets; carpets; upholstery fabrics; upholstery material; insulation material

⁴ BOBETH, W. (1993) - Textile Fibers (2) Berlin: Springer-Verlag Berlin Heidelberg GmbH

⁵ URBANA (2019) - Commodities <<https://www.urbanara.de/blogs/magazin/warenkunde>> Accessed, on 03/13/2019

Tab. 2 B: Material data sheet, fleece of virgin sheep's wool (conventional), specific⁶⁷⁸**General description**

Certifications/Information	n.a.	
Fire resistance	Very fire resistant by nature	
Fiber type	Natural fiber	
Natural fiber type	Animal fiber	
Fiber length	ca. 4 - 14 mm	
Fiber diameter	ca. 20 - 50 µm	
Color	Whitish, gray to brown but also grayish brown, gray to black	

Life cycle assessment data virgin wool 5

Resource input per kg	A1-A3	
Total non-renewable primary energy (PENRT)	16,4 MJ	
Use of freshwater resources (FW)	n.a.	

Environmental impact per kg	A1-A3	
Global Warming Potential (GWP)	n.a.	

Environmental impact Transport, per 1000 kgkm (1.32 g/cm³) 5**Production site: Germany/ZEITRAUM**

Truck - ca. 500 km	A4	10
Total non-renewable primary energy (PENRT)	430,3 MJ	
Use of freshwater resources (FW)	00,0302615 m ³	
Global Warming Potential (GWP)	32,055 Kg CO ₂ -eqv.	

Hauptrohstoff-Ursprung: Australien/Herstellungsort 0

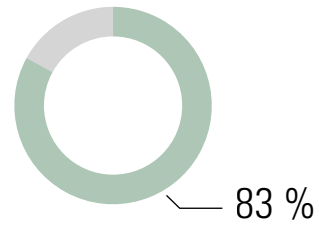
Truck - ca. 2000 km	A4	
Total non-renewable primary energy (PENRT)	2416 MJ	
Use of freshwater resources (FW)	0,12776 m ³	
Global Warming Potential (GWP)	179,38 Kg CO ₂ -eqv.	
Container ship - ca. 10000 km	A4	
Total non-renewable primary energy (PENRT)	1094 MJ	

⁶ BOBETH, W. (1993) - Textile Fibers (2) Berlin: Springer-Verlag Berlin Heidelberg GmbH⁷ BMI 2021: Oekobaudat. Database <https://www.oekobaudat.de/no_cache/en/database/search.html> Accessed, on 10/27/2021⁸ MATERIALARCHIV (2019) - Materialarchiv <<http://www.materialarchiv.ch/app-tablet/#search>> Accessed, on 03/01/2019

Use of freshwater resources (FW)	0,005636 m ³	
Global Warming Potential (GWP)	90,11 Kg CO ₂ -eqv.	
Sustainability Assessment		
Longevity	Permanent (10 - 20 years)	5
Biological reproduction/ recycled material	100 %	10
Circulation potential	100 % (biodegradable)	10
Socially compatible	Yes	8
Total average rating		7,16
Resistance to dirt	Not sensitive to dirt/self-cleaning	
Physical properties		
Weight	1,32 g/cm ³	
Mechanical properties		
Tensile strength	130 - 210 N/mm ²	
Elongation at break	28 - 48 %	
Water absorption	< 33 %	
General characteristics	Highly water repellent; good acid resistance; poor alkali resistance; insulating against heat loss; elastic; does not tend to wrinkle; high water absorption capacity; inherently self-cleaning and dirt repellent; flame retardant; color resistant; hardly absorbs odors; very wind permeable; tends to felt when exposed to heat	
Notes	"Wool" is the name given not only to the hair of sheep, but also of many other animals	



3 Osmo, hard wax oil



Tab. 3 A: Material data sheet, Osmo, hard wax oil, general⁹¹⁰

Material group	Coating materials; Oils
Name	Hard wax oil (GB, US); Hartwachsöl (D)
Manufacturer	Osmo Holz und Color GmbH & Co. KG
Manufactured in	Germany (GER)
Version	Osmo Hard Wax Oil 3032 satin, 3062 matt
Use	Furniture construction; for interior use; also suitable for parquet, cork and terracotta

⁹ KALWEIT A. (2012) - Handbook of technical product design - materials and manufacturing. Berlin: Springer Verlag

¹⁰ Osmo (2019) - Osmo Hard Wax Oil 3032 satin, 3062 matte <<https://www.osmo.de>> Accessed, on 03/02/2019

Tab. 3 B: Material data sheet, Osmo, hard wax oil, specific^{11,12}

General description		
Certifications/Information	ISO 9001, ISO 14001, ISO 18001	
Emission class (formaldehyde)	Formaldehyde-free	
VOC's	< 500 g/l (volatile components emit during curing)	
Delivery forms	Liquid	
Color	yellowish (transparent/yellowish in cured form)	
Texture	Glossy to matt (cured)	
Contents		
50 - 60 % solids	Natural oils and waxes (sunflower oil, soybean oil, safflower oil, carnauba and candellila wax) Paraffins	
Additives	Siccatives (desiccants) and water-repellent additives	
Solvent	Desaromatized white spirit (gasoline-free - according to the purity requirements of the European Pharmacopoeia)	
Life cycle assessment data hard wax oil (GER)		5
Resource input per kg	A1-A3	
Total non-renewable primary energy (PENRT)	n.a.	
Use of freshwater resources (FW)	n.a.	
Environmental impact per kg	A1-A3	
Global Warming Potential (GWP)	n.a.	
Environmental impact Transport, per 1000 kgkm		9
Production site: Germany/ZEITRAUM		
Truck - ca. 200 km	A4	10
Total non-renewable primary energy (PENRT)	172,12 MJ	
Use of freshwater resources (FW)	0,012106 m ³	
Global Warming Potential (GWP)	12,822 Kg CO ₂ -eqv.	
Main raw material origin: n.a./production site		
n.a. - ø 3000 km	A4	8
Total non-renewable primary energy (PENRT)	3624 MJ	
Use of freshwater resources (FW)	0,19164 m ³	

¹¹ BMI 2021: Oekobaudat. Database <https://www.oekobaudat.de/no_cache/en/database/search.html> Accessed, on 10/27/2021

¹² MATERIALARCHIV (2019) - Materialarchiv <<http://www.materialarchiv.ch/app-tablet/#search>> Accessed, on 03/01/2019

Global Warming Potential (GWP)	296,07 Kg CO ₂ -eqv.	
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Sustainability Assessment

Longevity	Very durable/repairable (> 20 years, with good care)	10
Biological reproduction/ recycled material	51 - 60 %	6
Circulation potential	100 % (biodegradable)	10
Socially compatible	Yes	10
Total average rating		8,33

Processing

Application	With brush, spatula or spray gun	
Storage	Can be stored up to 5 years with tight closure	

Properties

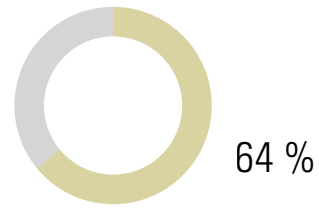
Density	0,89 g/cm ³	
Viscosity	Thixotropic, creamy	
Consistency	Medium viscosity	
Moisture resistance	Good	

Notes

Osmo Polyx®-Oil is based on natural vegetable oils and waxes; Osmo Polyx®-Oil contains neither biocides nor preservatives. It is harmless to humans, animals and plants when dry and complies with DIN 53160 (sweat- and saliva-proof) and EURO-NORM EN 71 (suitable for children's toys)



4 PVAc dispersion adhesive, D3



Tab. 4 A: Material data sheet, PVAc dispersion adhesive, D3, general^{13,14}

Material group	Synthetic material; adhesives; dispersion adhesives
Name	Dispersion Adhesive (GB, US); Dispersionsklebstoff, PVAc-(Polyvinylacetat) Klebstoffe, Weißleim (D)
Manufacturer	Kleiberit Klebstoffe GmbH
Manufactured in	Germany (GER)
Version	Kleiberit 303, D3-adhesive
Use	Furniture construction; especially for interiors; staircase construction, ship interior finishing; surface bonding of HWS; door and window production

¹³ KALWEIT A. (2012) - Handbook of technical product design - materials and manufacturing. Berlin: Springer Verlag

¹⁴ KEIBERIT (2019) - KLEIBERIT 303, D3, PVAc Adhesive <https://interior-construction.kleiberit.com/fileadmin/Content/Documents/DE/Infoblaetter/303_D3_Leim_D.pdf> Accessed, on 02/03/2019

Tab. 4 B: Material data sheet, PVAc dispersion adhesive, D3, specific¹⁵¹⁶

General description

Certifications/Information	ISO 9001, ISO 14001, ISO 50001	
Emission class (formaldehyde)	Formaldehyde-free	
Delivery forms	Liquid	
Color	Whitish (transparent in cured form)	
Texture	Glossy	

Life cycle assessment data Dispersion-based solvent-free adhesives, coatings and sealants (GER) 10

Resource input per kg A1-A3

Total non-renewable primary energy (PENRT)	26,7 MJ	10
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Use of freshwater resources (FW)	0,00758 m ³	10
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Environmental impact per kg A1-A3

Global Warming Potential (GWP)	0,955 Kg CO ₂ -eqv.	10
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Environmental impact Transport, per 1000 kgkm 6,5

Production site: Germany/ZEITRAUM

Truck - ca. 200 km A4 10

Total non-renewable primary energy (PENRT)	172,12 MJ	
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Use of freshwater resources (FW)	0,012106 m ³	
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Global Warming Potential (GWP)	12,822 Kg CO ₂ -eqv.	
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Main raw material origin: n.a./production site

n.a. - ø > 7000 km A4 3

Total non-renewable primary energy (PENRT)	8456 MJ	
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Use of freshwater resources (FW)	0,44716 m ³	
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Global Warming Potential (GWP)	627,83 Kg CO ₂ -eqv.	
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Sustainability Assessment

Longevity	Very durable/moderately repairable (> 20 years)	9
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Biological reproduction/ recycled material	0 %	0
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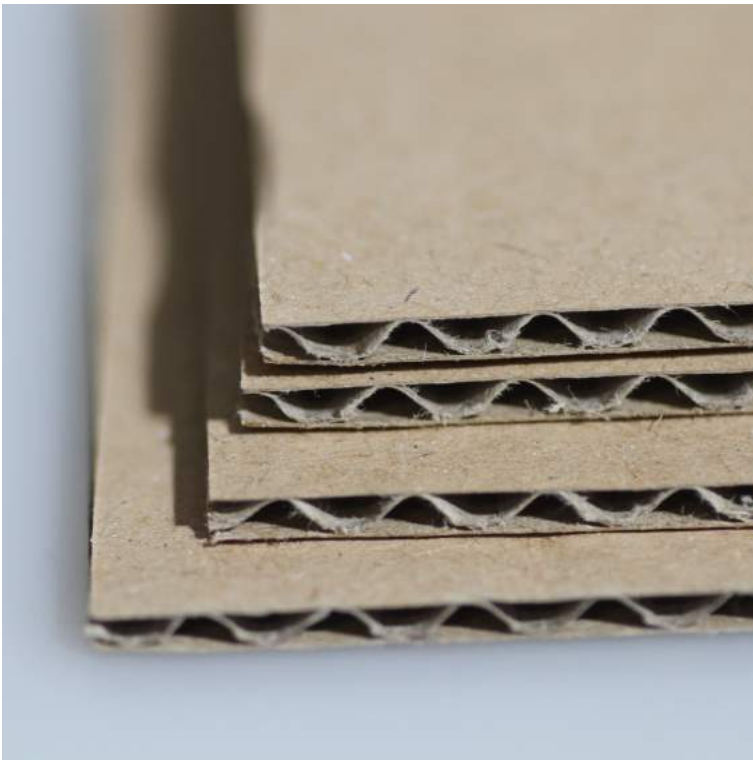
Circulation potential	Only thermally recyclable	4
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Socially compatible	Yes	9
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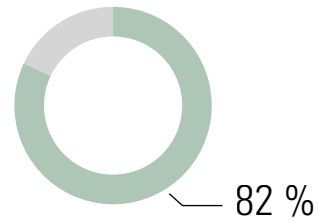
¹⁵ BMI 2021: Oekobaudat. Database <https://www.oekobaudat.de/no_cache/en/database/search.html> Accessed, on 10/27/2021

¹⁶ MATERIALARCHIV (2019) - Materialarchiv <<http://www.materialarchiv.ch/app-tablet/#search>> Accessed, on 03/01/2019

Total average rating		6,41
Processing		
Adhesion	With brush, spatula or glue roller	
Properties		
Density	1,1 g/cm ³	
PH level	3	
Consistency	Medium viscosity	
Moisture resistance	D3	
Heat resistance	Up to 120 °C	
Notes	PVAc adhesive is available solvent-free and solvent-based	



5 Cardboard, beds, tables & storage



Tab. 5 A: Cardboard, beds, tables & storage, general

Material group	Packaging
Name	Cardboard (GB, US); Karton (D)
Manufacturer	Monowell GmbH & Co. KG
Manufactured in	Germany (GER)
Use	Packing material for individual wrapping of the furniture

Tab. 5 B: Cardboard, beds, tables & storage, specific¹⁷¹⁸**General description**

Certifications/Information	ISO 9001, ISO 50001, ISO 22000 DE, ISO 22000 EN, FSC	
Color	Brown	
Texture	matt	
Contents		
60 %	Recycled paper	
40 %	Primary raw material	

Life cycle assessment data „Kraftpapier“ (GER) 10

Resource input per kg	A1-A3	
Total non-renewable primary energy (PENRT)	5,888 MJ	
Use of freshwater resources (FW)	0,004899 m ³	

Environmental impact per kg	A1-A3	
Global Warming Potential (GWP)	-0,8973 Kg CO ₂ -eqv.	

Environmental impact Transport, per 1000 kgkm 9**Production site: Germany/ZEITRAUM**

Truck - ca. 200 km	A4	10
Total non-renewable primary energy (PENRT)	172,12 MJ	
Use of freshwater resources (FW)	0,012106 m ³	
Global Warming Potential (GWP)	12,822 Kg CO ₂ -eqv.	

Main raw material origin: Germany, Central Europe/Production site

Truck - ca. 1500 km	A4	8
Total non-renewable primary energy (PENRT)	1812 MJ	
Use of freshwater resources (FW)	0,09582 m ³	
Global Warming Potential (GWP)	134,535 Kg CO ₂ -eqv.	

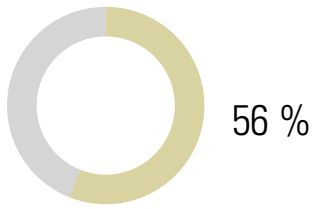
Sustainability Assessment

Longevity	Moderately durable/repairable (< 10 years)	4
Biological reproduction/ recycled material	60 %	6
Circulation potential	100 % (technological)	10

¹⁷ BMI 2021: Oekobaudat. Database <https://www.oekobaudat.de/no_cache/en/database/search.html> Accessed, on 10/27/2021¹⁸ MATERIALARCHIV (2019) - Materialarchiv <<http://www.materialarchiv.ch/app-tablet/#search>> Accessed, on 03/01/2019

Socially compatible	Yes	10
Total average rating		8,16
Disposal note	Waste paper	

6 Polyester fleece



Tab. 6 A: Material data sheet, polyester fleece, general

Material group	Packaging
Name	Polyester fleece (GB); Polyestervlies (D)
Material abbreviation	PES
Manufactured in	Germany (GER)
Use	Packing material for protection

Tab. 6 B: Material data sheet, polyester fleece, specific¹⁹²⁰

General description

Certifications/Information	n.a.	
Delivery form	Mats, wadding, etc.	
Texture	soft, fibrous	
Life cycle assessment data Comparative material for PE wadding (no data available) - PE nonwoven (GER)		3
Resource input per kg	A1-A3	
Total non-renewable primary energy (PENRT)	22 MJ	
Use of freshwater resources (FW)	0,00252 m ³	
Environmental impact per kg	A1-A3	
Global Warming Potential (GWP)	0,73 Kg CO ₂ -eqv.	
Environmental impact Transport, per 1000 kgkm (approx. 0.5 kg/m²)		6,5
Production site: Germany/ZEITRAUM		
Truck - ca. 500 km	A4	10
Total non-renewable primary energy (PENRT)	430,3 MJ	
Use of freshwater resources (FW)	0,030265 m ³	
Global Warming Potential (GWP)	32,055 Kg CO ₂ -eqv.	
Main raw material origin: n.a./production site		3
n.a. - ø > 7000 km	A4	
Total non-renewable primary energy (PENRT)	8456 MJ	
Use of freshwater resources (FW)	0,44716 m ³	
Global Warming Potential (GWP)	627,83 Kg CO ₂ -eqv.	
Sustainability Assessment		
Longevity	Durable (10 - 20 years)	5
Biological reproduction/ recycled material	0 %	0
Circulation potential	100 % (technological)	10
Socially compatible	Yes	9
Total average rating		5,58

¹⁹ BMI 2021: Oekobaudat. Database <https://www.oekobaudat.de/no_cache/en/database/search.html> Accessed, on 10/27/2021

²⁰ MATERIALARCHIV (2019) - Materialarchiv <<http://www.materialarchiv.ch/app-tablet/#search>> Accessed, on 03/01/2019

Disposal note

Recyclable waste

Information on all materials used by ZEITRAUM
can be found in our material library at:

www.zeitraum-moebel.com

Important note: Our Furniture Footprint product data sheets have no scientific claim and are to be understood as a guide for our customers and us. All data are marked with corresponding source information. The contents of our Furniture Footprint product database have been compiled with the utmost care. However, we do not guarantee the accuracy, completeness and timeliness of the content, so we do not assume any liability for incorrect, outdated or incomplete information.