

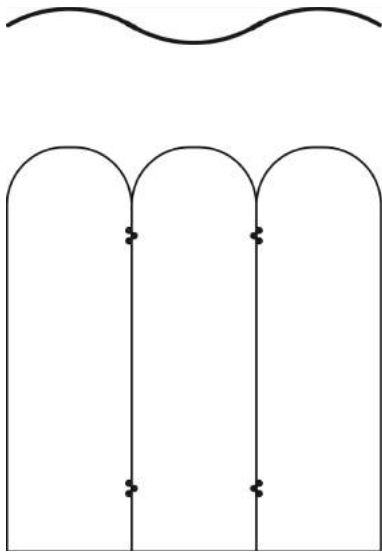
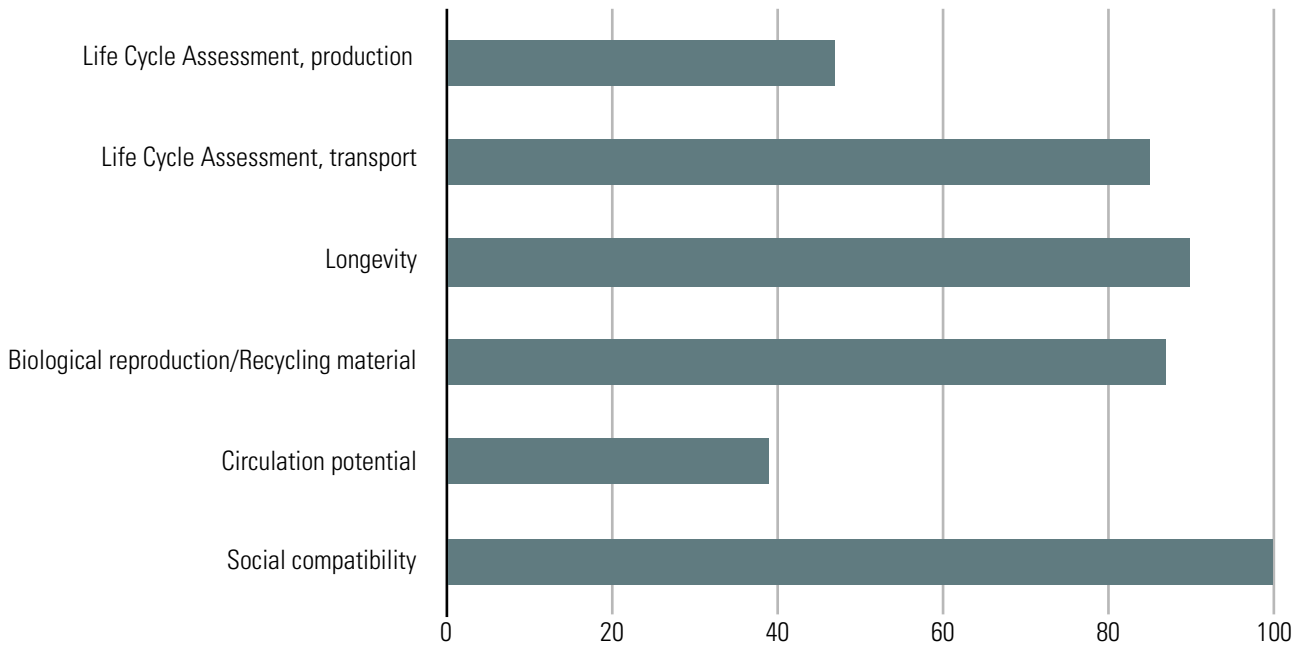
ZEITRAUM

AD JUST

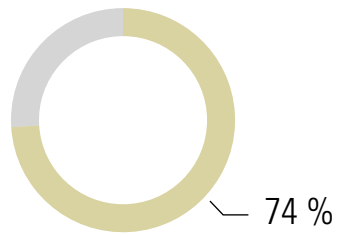
Design by Mathias Hahn, 2022



AD JUST



- wood/wood based material
- leather
- steel
- varnish

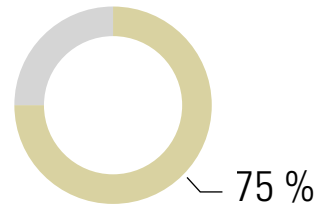


Flat pack

AD JUST	Material/Product rating				
	MDF (black, veneered)	Leather	Steel	Varnish	Weighted rating, %
Life Cycle Assessment, production	4,66	5	5,33	5	46,72504 %
Life Cycle Assessment, transport	8,5	10	4	9	85,0895 %
Longevity	9	9	10	9	90,009 %
Biological reproduction/Recycling material	9	9	9	0	86,931 %
Circulation potential	4	4	10	0	38,744 %
Social compatibility	10	9	8	9	99,608 %
Average rating, ø	7,526	7,666	7,721	5,333	Total weight
Share in kg	25,5	0,018	0,048	0,9	26,466
Share in %	96,35 %	0,06 %	0,18 %	3,4 %	
Weighted rating	7,251	0,004	0,013	0,181	
Product rating in %	74,49				



1 MDF, medium density fiberboard (black, veneered), AD JUST



Tab. 1 A: Material data sheet, MDF, medium density fiberboard (black, veneered), AD JUST, general¹

Material group	Natural synthetic material; wood based panels; fiberboards
Name	Medium Density Fiberboard, MDF (GB, US); Mitteldichte Faserplatte, MDF (D)
Short name	MDF
Manufactured in	France
Origin of the wood	Europe (top veneer outside Germany if necessary)
Version	Black, veneered
Use	Predominantly for industrial furniture construction and interior finishing

¹ KALWEIT, A., a.o. (2012) - Handbook of Technical Product Design, Materials and Manufacturing - Decision Bases for Designers and Engineers (2) Berlin: Springer-Verlag Berlin Heidelberg GmbH

Tab. 1 B: Material data sheet, MDF, medium density fiberboard (black, veneered), AD JUST, specific²³**General description**

Certifications/Information	PEFC, E1 (Measured values comply with the requirement according to E1 (EU)), CARB (USA), CE	
Emission class	E1, CARB	
Formaldehyd emission (717-1)	≤ 0,05 ppm	
Fire resistance (EN-13501-1)	Fire behavior: D-s2,d0	
Thickness	11 - 41 mm	
Color	Anthracite to black, partly darker and lighter inlays	
Texture	Plain, fibrous mottled (top view), loose to very fine scatter (cross section)	
Life cycle assessment data MDF, average (GER)		4,66
Resource input per kg	A1-A3	
Total non-renewable primary energy (PENRT)	13,09 MJ	2
Use of freshwater resources (FW)	0,0037 m ³	2
Environmental impact per m³	A1-A3	
Global Warming Potential (GWP)	-0,088 Kg CO ₂ -eqv.	10
Environmental impact Transport, per 1000 kgkm (720 kg/m³)		8,5
Production site: France/ZEITRAUM		
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 CO ₂ -eqv.	
Main raw material origin: Europe/production site		
Truck - ca. 1500 km	A4	9
Total non-renewable primary energy (PENRT)	1812 MJ	
Use of freshwater resources (FW)	0,09582 m ³	
Global Warming Potential (GWP)	134,535 CO ₂ -eqv.	
Sustainability Assessment		
Longevity	Very durable/moderately repairable (> 20 years)	9
Biological reproduction/ recycled material	90 %	9

² BMI 2021: Oekobaudat. Database <https://www.oekobaudat.de/no_cache/en/database/search.html> Accessed, on 10/27/2021

³ WEZEL, O. (2019) - Strength properties of wood-based materials according to DIN EN 622 <<http://www.tischler-ole-welzel.de/Holzwerkstoffe/Faserplatten%20nach%20DIN%20EN%2013986.pdf>> Accessed, on 09/03/2019

Circulation potential	Only thermally recyclable	4
Socially compatible	Yes	10
Total average rating		7,52

Processing

Mechanical	Very good; can be sawed, drilled and milled with common machines	
Adhesion	Good	
Surface finishing	Moderately good; material tends to swell in combination with water, aqueous primers must therefore be intermediately sanded	
Biological durability use (EN 335)	Class: 1	

Physical properties

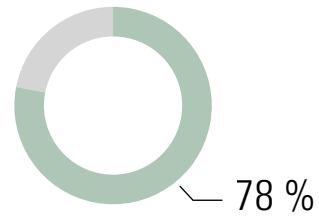
Bulk density according to EN 323	670... 750 kg/m ³	
Material moisture at delivery	3 - 7 %	

Mechanical properties

Flexural strength (σ_{bB})	17 - 22 N/mm ²	
E-modulus (E_b)	1900 - 2500 N/mm ²	



2 Reinhardt Leather, Jepard



Tab. 2 A: Material data sheet, Jepard, general⁴

Material group	Natural materials; animal products; mammalian leather, cowhide (mineral tanning)
Name	Jepard
Manufacturer	Leder Reinhardt GmbH
Manufactured in	Germany (GER)
Material origin	Italy
Version	13 different colors
Use	Clothing: jackets, pants, bags, backpacks, belts, etc.; jewelry; hats; caps; shoe soles, straps Furniture making: upholstery materials, seat shells, etc.; saddlery; automotive industry; book covers; art objects; etc.

⁴ MATERIALARCHIV (2019) - Materialarchiv <<http://www.materialarchiv.ch/app-tablet/#search>> Accessed, on 03/01/2019

Tab. 2 B: Material data sheet, Jepard, specific⁵⁶**General description** (manufacturer spec.)

Certifications/Information	n.a.	
Fire resistance	Fire tests: CA TB 117-2013	
Appearance		
Size	4,2... 5,2 m ²	
Thickness	1,1... 1,3 mm	
Color	13 color versions	
Texture	Pappillary layer - smooth, scarred Reticular layer: fibrous (also called flesh side)	
Life cycle assessment data leather		5
Resource use per m²	A1-A3	
Total non-renewable primary energy (PENRT)	n.a.	
Use of freshwater resources (FW)	n.a.	
Environmental impact per m²	A1-A3	
Global Warming Potential (GWP)	n.a.	
Environmental impact Transport, per 1000 kgkm (approx. 0,9 kg/m²)		10
Production site: Germany/ZEITRAUM		
Truck - ca. 200 km	A4	10
Total non-renewable primary energy (PENRT)	241,6 MJ	
Use of freshwater resources (FW)	0,012776 m ³	
Global Warming Potential (GWP)	17,938 Kg CO ₂ -eqv.	
Main raw material origin: Germany/production site		
Truck - ca. 1000 km	A4	10
Total non-renewable primary energy (PENRT)	1208 MJ	
Use of freshwater resources (FW)	0,06388 m ³	
Global Warming Potential (GWP)	89,69 Kg CO ₂ -eqv.	
Sustainability Assessment		
Longevity	Very durable/moderately repairable (> 20 years)	9
Biological reproduction/ recycled material	> 95 % (chrome tanning)	9

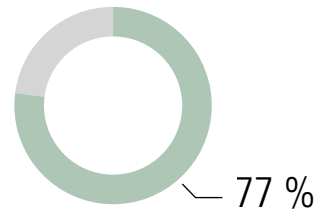
⁵ MATERIALARCHIV (2019) - Materialarchiv <<http://www.materialarchiv.ch/app-tablet/#search>> Accessed, on 03/01/2019

⁶ BMI 2021: Oekobaudat. Database <https://www.oekobaudat.de/no_cache/en/database/search.html> Accessed, on 10/27/2021

Circulation potential	40 - 70 % technological/downcycling	4
Socially compatible	Yes	9
Total average rating		7,66
Resistance to dirt	Not sensitive to dirt	
Processing		
Mechanically	Mechanical processing of the material with tools designed for this purpose; cutting possible; offcut (upholstered furniture) approx. 30-45 %	
Storage	Relative humidity: 50-70 %; Temperature: 5-15 %	
Adhesion	good; possible with suitable adhesives	
Surface processing	good; can be dyed; smooth leather can and should be greased, oiled or waxed to protect the der from drying out; too much grease can also cause the leather to dry out; leather can be cleaned with lukewarm water; avoid using solvents	
Other	Untreated leather is porous and permeable to water and air; direct sunlight can cause drying and color change	
Natural durability	With regular care, the service life of leather can be increased many times over	
Properties	Very tear-resistant; elastic; water-permeable; breathable	
Physical properties		
Density	400... 900 kg/m ³	
Mechanical properties		
Continuous folding behavior (EN ISO 5402)	30.000	
Light fastness (ISO 105-B02)	3	
Wet abrasion (ISO 11640)	20	
Dry abrasion (ISO 11640)	50	
Elongation at break (unwashed underleather)	n.a.	
Notes	The most important leather is cowhide; leather is largely a by-product of the meat industry; some animals are bred only for their leather, e.g. snakes, crocodiles or lizards	



3 Steel



Tab. 3 A: Material data sheet, steel, general⁷

Material group	Natural material; metals; transition metals
Parts origin	n.a.
Occurrence	Worldwide; South America, Western Australia, China and Eastern Europe, Canada
Use	According to application: building structural and tool steel, structural steel for machinery, vehicle and shipbuilding or mechanical engineering; line pipe, pressure vessel, etc.; handicraft and design; furniture making

⁷ KALWEIT, A., a.o. (2012) - Handbook of Technical Product Design, Materials and Manufacturing - Decision Bases for Designers and Engineers (2) Berlin: Springer-Verlag Berlin Heidelberg GmbH

Tab. 3 B: Material data sheet, steel, specific⁸⁹

General description

Certifications/Information	n.a.	
Emission class (formaldehyde)	Formaldehyde free	
Surface	smooth, hard	
Color	Grey	
Life cycle assessment data Steel profile, (GER)		5,33
Resource input per kg	A1-A3	
Total non-renewable primary energy (PENRT)	10,99 MJ	4
Use of freshwater resources (FW)	0,002314 m ³	4
Environmental impact per kg	A1-A3	
Global Warming Potential (GWP)	0,9944 Kg CO ₂ -eqv.	8
Environmental impact Transport, per 1000 kgkm (7850 kg/m³)		4
Production site: Europe/ZEITRAUM		
Truck ø - 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 Kg CO ₂ -eqv.	
Main raw material origin: China/production location		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	
Use of freshwater resources (FW)	0,005636 m ³	
Global Warming Potential (GWP)	90,11 Kg CO ₂ -eqv.	

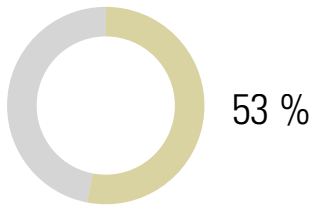
Sustainability Assessment

⁸ BMI 2021: Oekobaudat. Database <https://www.oekobaudat.de/no_cache/en/database/search.html> Accessed, on 10/27/2021

⁹ MATERIALARCHIV (2019) - Materialarchiv <<http://www.materialarchiv.ch/app-tablet/#search>> Accessed, on 03/01/2019

Longevity	Very durable/repairable (> 20 years)	10
Biological reproduction/ recycled material	80 - 90 %	9
Circulation potential	100 % (technological)	10
Socially compatible	Yes	8
Total average rating		7,72
Notes	The life cycle assessment of iron improves the more often the material has been recycled or the proportion of recycled material increases	

4 Varnish (moulded plywood)



Tab. 4 A: Material data sheet, varnish (moulded plywood), general¹⁰¹¹

Material group	Synthetic material; coating materials; varnish
Name	varnish (GB, US); Lack (D)
Manufacturer	Heidelberg Coatings Dr. Rentzsch GmbH
Manufactured in	Germany (GER)
Version	HD-AQUA TOP colorless
Use	For the varnishing of heavily stressed surfaces in furniture and interior finishing, for hotel and school furnishings, for kitchen and sanitary furniture

¹⁰ KALWEIT A. (2012) - Handbook of technical product design - materials and manufacturing. Berlin: Springer Verlag

¹¹ ADLER (2019) - ADLER PUR-Antiscratch HQ <<https://www.adler-lacke.com/de>> Accessed, on 02/03/2019

Tab. 4 B: Material data sheet, varnish (moulded plywood), specific¹²¹³

General description		
Certifications/Information	DIN EN 71 - 3, DIN 68861 - 1, DIN EN 13501 - 1, DIN 4102 B1	
Emission class (formaldehyde)	Formaldehyde-free	
VOC's	5,76 %	
Delivery forms	Liquid	
Color	Transparent, colorless	
Texture	Glossy to matt (cured)	
Life cycle assessment data n.a. (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 nicht erneuerbare Primärenergie (PENRT)	172,12 MJ	
Einsatz von Süßwasserressourcen (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 nicht erneuerbare Primärenergie (PENRT)	3624 MJ	
Einsatz von Süßwasserressourcen (FW)	0,19164 m ³	
Global Warming Potential (GWP)	296,07 Kg CO ₂ -eqv.	
Sustainability Assessment		
Longevity	Very durable/moderately repairable (> 20 years)	9
Biological reproduction/ recycled material	0 %	0
Circulation potential	Hazardous waste	0

¹² BMI 2021: Oekobaudat. Database <https://www.oekobaudat.de/no_cache/en/database/search.html> Accessed, on 10/27/2021

¹³ MATERIALARCHIV (2019) - Materialarchiv <<http://www.materialarchiv.ch/app-tablet/#search>> Accessed, on 03/01/2019

Socially compatible	Yes	9
Total average rating		5,33

Processing

Apply	Spray gun	
Storage	Can be stored up to 5 years with tight closure	
Notes	For hardly combustible or hardly flammable superstructures	

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.