



canelle

Environmental Product Declaration

Date of Issue: 11/1/2021

Date of Expiration: 11/1/2026

PRODUCT CATEGORY RULE

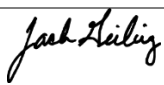
BIFMA PCR for Seating, UNCPC 3811

FUNCTIONAL UNIT

1 unit of seating to seat one individual, maintained for a 10-year period.



Certified
Environmental
Product Declaration
www.nsf.org

Program Operator	NSF Certification, LLC 789 N. Dixboro, Ann Arbor, MI 48105 sustainability@nsf.org
Manufacturer Name and Address	Bernhardt Design 1839 Morganton Blvd, Lenoir NC, 28645
Declaration Number	EPD10661
Declared Product and Functional Unit	1 unit of seating to seat one individual, maintained for a 10 year period.
Reference PCR and Version Number	BIFMA PCR for Seating: UNCPC 3811
Product's intended Application and Use	Commercial Furniture
Product RSL	10 year
Markets of Applicability	North America
Date of Issue	November 1, 2021
Period of Validity	5 years from date of issue
EPD Type	Product Specific
Intended Audience	Business-to-Business, Business-to-Consumer
Range of Dataset Variability	N/A
EPD Scope	Cradle to Grave
Year of reported manufacturer primary data	2020
LCA Software and Version Number	GaBi 10.0.0.20
LCI Database and Version Number	GaBi Database Version 2021.1
LCIA Methodology and Version Number	TRACI 2.1
The sub-category PCR review was conducted by:	Thomas Gloria, PhD (chair) Jack Geibig, P.E. Michael Overcash, PhD
This declaration was independently verified in accordance with ISO 14025: 2006. The BIFMA PCR for Office Furniture Seating Products: UNCPC 3811 serves as the core PCR. <input type="checkbox"/> Internal <input checked="" type="checkbox"/> External	 Tony Favilla afavilla@nsf.org
This life cycle assessment was conducted in accordance with ISO 14044 and the reference PCR by:	WAP Sustainability Consulting
This life cycle assessment was independently verified in accordance with ISO 14044 and the reference PCR by:	 Jack Geibig jgeibig@ecoform.com
<p>Limitations:</p> <p>Environmental declarations from different programs (ISO 14025) may not be comparable. Comparison of the environmental performance of products using EPD information shall be based on the product's use and impacts at the building level, and therefore EPDs may not be used for comparability purposes when not considering the building energy use phase as instructed under this PCR. Full conformance with the PCR allows EPD comparability only when all stages of a life cycle have been considered. However, variations and deviations are possible". Example of variations: Different LCA software and background LCI datasets may lead to differences results for upstream or downstream of the life cycle stages declared.</p> <p>Additional information on the life cycle assessment can be found by contacting Bernhardt directly.</p>	

Company Description

Bernhardt Furniture Company was founded in 1889 by John M. Bernhardt. Orphaned at 13, John Bernhardt left for Oregon to become a government surveyor but returned home three years later to pursue a career as a logger and timber cutter. After buying a sawmill, he saw an opportunity to use timber in the manufacture of sturdy oak bedroom furniture. The company he started quickly found a market in such urban centers as Chicago and New York City. As the business grew under the leadership of the Bernhardt family, new product categories, dining room and living room furniture were added and additional facilities were built or purchased from other furniture manufacturers.



In 1983, Bernhardt Furniture added a line of commercial furniture, Bernhardt Design, manufacturing quality conservatively styled casegoods, conference and occasional tables, guest, lounge and wood guest chairs for the corporate and legal markets. Gradually, the product line expanded stylistically, adding more contemporary products and multi-purpose tables and seating and conference chairs. Bernhardt Design markets to the architectural and design communities and is known for its excellence in design, winning many awards through the years. Its products are sold globally through sales representatives and selected dealers. The 20,000 sq. ft. flagship showroom is located on Madison Avenue in New York City.

Product Description

Canelle lounge chairs come in a variety of options. Canelle chairs have options of maple or walnut wood bases, and polished aluminum or powder-coated aluminum base. All seats are fully upholstered molded foam over plywood for the seating and molded foam over metal for the back. The products covered by this EPD are the Canelle 4756, 4756P, 4756K, 4756PK, 4757M, 4757PM, 4757W and 4757PW. Results are reported for the 4756, 4757PM, and 4757 PW products, which were the largest by mass within each grouping. All options within each style have impacts within 10% of the reported configuration and are therefore covered by this EPD.

Additional Environmental Information

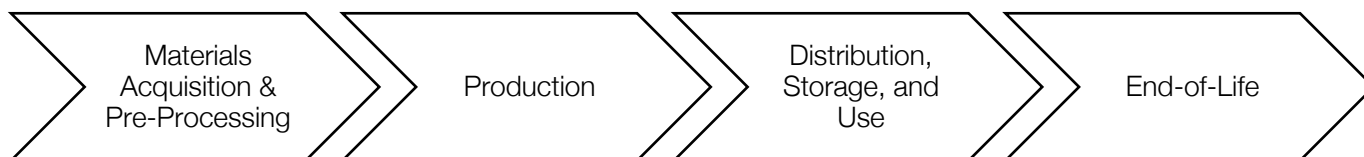
Canelle chairs are GREENGUARD Gold Certified and comply with ANSI/BIFMA e3-2014e Credits 7.6.1, 7.6.2, and 7.6.3 along with CDPH Standard Method v1.2-2017. Additionally, Canelle chairs are LEVEL 1 Certified under the ANSI/BIFMA e3-2019 Furniture Sustainability Standard.

Bernhardt Design products are designed and engineered to last for many years. Frequently, whether designed under the Design for the Environment program or a legacy product, the life span of the product is longer than customers require, resulting in the issue of disposal. While disposal in a landfill can occur, Bernhardt Design offers alternatives to discarding products as found at <https://bernhardtdesign.com/environmental/recovery/>.

Functional Unit

One unit of seating to seat one individual, maintained for a 10-year period. The product under study has a 10-year service life under ANSI/BIFMA X5.1 and therefore does not require additional units of seating to meet the functional unit.

LCA Stages



Materials Acquisition & Pre-Processing | Includes raw material extraction, pre-processing of materials, and transport to production.

Production | Includes component and final assembly manufacturing operations, both by Bernhardt and upstream suppliers, as well as intermediate transport and packaging requirements.

Distribution, Storage, and Use | Includes the production-weighted average distribution to customers. No additional storage is required, and no use phase impacts are incurred.

End-of-Life | Includes transport to and disposal of product and packaging based on average US recycling rates for homogenous materials, and an 80/20 landfill/incineration rate for non-homogenous materials.

Canelle 4756

Product Composition

This lounge chair consists of an upholstered shell of molded foam over plywood for the seating and molded foam over metal for the back and a polished or powder coated aluminum base and comes in a variety of finishes. The composition of the chair is provided in the table below, with a total product weight of 21.7 kg. The exact composition of the purchased product may be slightly different based on the configuration chosen. However, this EPD will still be applicable to the purchased configuration due to the minimal impact on the results.

Material	Mass %	Weight (kg)	Resource Type
Aluminum	62.4%	13.6	Virgin Non-Renewable
Foam over Metal	19.3%	4.3	Virgin Non-Renewable
Chromeplated Metal	6.3%	1.4	Virgin Non-Renewable
Foam over Plywood	5.2%	1.1	Virgin Non-Renewable
Plywood	4.4%	1.0	Renewable
PET Fabric	1.3%	0.3	Virgin Non-Renewable
Zinc	0.5%	0.1	Virgin Non-Renewable
Other	<0.5%	<0.1	Virgin Non-Renewable



Though materials may contain recycled content, minimum contents are not specified for any materials contained in the product, therefore it is affected by variability in the market. Best available industry data was used to model the upstream production of these materials.

LCA Results

All results are given per functional unit, which is one chair for a period of 10 years.

TRACI Results

Impact Category	Unit	Material Acquisition	Production	Distribution, Storage, Use	End-of-Life	Total
Acidification Potential	kg SO ₂ -eq	1.68E+00	1.99E-01	1.63E-02	1.31E-02	1.91E+00
Eutrophication Potential	kg N-eq	5.05E-02	2.12E-02	1.55E-03	3.62E-03	7.69E-02
Global Warming Potential, incl biogenic C	kg CO ₂ -eq	3.47E+02	4.40E+01	3.50E+00	5.22E+00	4.00E+02
Global Warming Potential, excl biogenic C	kg CO ₂ -eq	3.44E+02	3.39E+01	3.49E+00	6.40E+00	3.88E+02
Ozone Depletion Potential	kg CFC-11 eq	1.04E-07	8.94E-11	6.95E-16	4.13E-15	1.04E-07
Smog Formation Potential	kg O ₃ -eq	1.96E+01	3.44E+00	3.76E-01	1.06E-01	2.35E+01

LCI Indicators

Impact Category	Unit	Material Acquisition	Production	Distribution, Storage, Use	End-of-Life	Total
Primary Energy Demand, renewable	MJ	2.45E+02	6.54E+02	2.03E+00	1.53E+00	9.03E+02
Primary Energy Demand, non-renewable	MJ	3.41E+03	7.54E+02	4.92E+01	1.99E+01	4.24E+03
Net Fresh Water Usage	kg	1.34E+03	2.88E+02	8.67E+00	1.31E+01	1.65E+03

Canelle 4757M

Product Composition

This lounge chair consists of an upholstered shell of molded foam over plywood for the seating and molded foam over metal for the back and a maple wood base and comes in a variety of finishes. The composition of the chair is provided in the table below, with a total product weight of 12.1 kg. The exact composition of the purchased product may be slightly different based on the configuration chosen. However, this EPD will still be applicable to the purchased configuration due to the minimal impact on the results.

Material	Mass %	Weight (kg)	Resource Type
Maple Wood	41.2%	5.0	Renewable
Foam over Metal	34.7%	4.2	Virgin Non-Renewable
Foam over Plywood	9.3%	1.1	Virgin Non-Renewable
Plywood	7.9%	1.0	Renewable
PET Fabric	2.9%	0.3	Virgin Non-Renewable
Stain	2.0%	0.2	Virgin Non-Renewable
Zinc	1.2%	0.2	Virgin Non-Renewable
Other	<1%	<0.1	Virgin Non-Renewable



Though materials may contain recycled content, minimum contents are not specified for any materials contained in the product, therefore it is affected by variability in the market. Best available industry data was used to model the upstream production of these materials.

LCA Results

All results are given per functional unit, which is one chair for a period of 10 years.

TRACI Results

Impact Category	Unit	Material Acquisition	Production	Distribution, Storage, Use	End-of-Life	Total
Acidification Potential	kg SO ₂ -eq	6.16E-02	1.31E-01	1.54E-02	3.87E-02	2.46E-01
Eutrophication Potential	kg N-eq	5.85E-03	1.81E-02	1.47E-03	1.09E-02	3.63E-02
Global Warming Potential, incl biogenic C	kg CO ₂ -eq	2.45E+01	2.77E+01	3.32E+00	7.70E+00	6.32E+01
Global Warming Potential, excl biogenic C	kg CO ₂ -eq	1.22E+01	1.76E+01	3.31E+00	1.25E+01	4.56E+01
Ozone Depletion Potential	kg CFC-11 eq	1.06E-07	8.93E-11	6.59E-16	2.01E-15	1.06E-07
Smog Formation Potential	kg O ₃ -eq	1.11E+00	2.21E+00	3.57E-01	1.38E-01	3.81E+00

LCI Indicators

Impact Category	Unit	Material Acquisition	Production	Distribution, Storage, Use	End-of-Life	Total
Primary Energy Demand, renewable	MJ	1.79E+02	6.23E+02	1.92E+00	7.87E-01	8.05E+02
Primary Energy Demand, non-renewable	MJ	4.74E+02	5.66E+02	4.67E+01	1.07E+01	1.10E+03
Net Fresh Water Usage	kg	1.36E+02	1.88E+02	8.22E+00	1.20E+01	3.44E+02

Canelle 4757W

Product Composition

This lounge chair consists of an upholstered shell of molded foam over plywood for the seating and molded foam over metal for the back and a walnut wood base and comes in a variety of finishes. The composition of the chair is provided in the table below, with a total product weight of 12 kg. The exact composition of the purchased product may be slightly different based on the configuration chosen. However, this EPD will still be applicable to the purchased configuration due to the minimal impact on the results.

Material	Mass %	Weight (kg)	Resource Type
Walnut Wood	41.2%	5.0	Renewable
Foam over Metal	34.7%	4.2	Virgin Non-Renewable
Foam over Plywood	9.3%	1.1	Virgin Non-Renewable
Plywood	7.9%	1.0	Renewable
PET Fabric	2.9%	0.3	Virgin Non-Renewable
Stain	2.0%	0.2	Virgin Non-Renewable
Zinc	1.2%	0.1	Virgin Non-Renewable
Other	<1%	<0.1	Virgin Non-Renewable



Though materials may contain recycled content, minimum contents are not specified for any materials contained in the product, therefore it is affected by variability in the market. Best available industry data was used to model the upstream production of these materials.

LCA Results

All results are given per functional unit, which is one chair for a period of 10 years.

TRACI Results

Impact Category	Unit	Material Acquisition	Production	Distribution, Storage, Use	End-of-Life	Total
Acidification Potential	kg SO ₂ -eq	6.24E-02	1.31E-01	1.04E-02	3.87E-02	2.42E-01
Eutrophication Potential	kg N-eq	5.91E-03	1.81E-02	9.90E-04	1.09E-02	3.58E-02
Global Warming Potential, incl biogenic C	kg CO ₂ -eq	2.44E+01	2.77E+01	2.24E+00	7.70E+00	6.20E+01
Global Warming Potential, excl biogenic C	kg CO ₂ -eq	1.19E+01	1.76E+01	2.23E+00	1.25E+01	4.42E+01
Ozone Depletion Potential	kg CFC-11 eq	1.06E-07	8.93E-11	4.44E-16	2.01E-15	1.06E-07
Smog Formation Potential	kg O ₃ -eq	1.16E+00	2.21E+00	2.40E-01	1.38E-01	3.74E+00

LCI Indicators

Impact Category	Unit	Material Acquisition	Production	Distribution, Storage, Use	End-of-Life	Total
Primary Energy Demand, renewable	MJ	1.83E+02	6.23E+02	1.30E+00	7.87E-01	8.08E+02
Primary Energy Demand, non-renewable	MJ	4.71E+02	5.66E+02	3.15E+01	1.07E+01	1.08E+03
Net Fresh Water Usage	kg	1.36E+02	1.88E+02	5.54E+00	1.20E+01	3.41E+02

References

Life Cycle Assessment of Bernhardt Furniture Products. WAP Sustainability. July 2021.

BIFMA PCR for Seating, UNCPC 3811. NSF International.

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.

