

X Series Vertical Storage Unit



Environmental Product Declaration

Date of Issue: October 4, 2023

Date of Expiration: October 4, 2028

Product Category Rule

BIFMA PCR for Storage, UNCPC 3812



Functional Unit

0.25 m³ of storage capacity for a period of 10 years.

This EPD was not written to support comparative assertions. EPDs based on different PCRs or different calculation models may not be comparable. When attempting to compare EPDs or life cycle impacts of products from different companies, the user should be aware of the uncertainty in the final results due to and not limited to the practitioner's assumptions, the source of the data used in the study and the software tool used to conduct the study.



Certified
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Product Declaration
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Program Operator	NSF Certification, LLC 789 N. Dixboro, Ann Arbor, MI 48105 sustainability@nsf.org
Manufacturer Name and Address	Haworth, Inc. One Haworth Center Holland, MI 49423 sustainability@haworth.com
Declaration Number	EPD 10873
Declared Product and Functional Unit	0.25 m ³ of storage capacity, for a 10-year period
Reference PCR and Version Number	BIFMA PCR for Storage: UNCPC 3812
Product's intended Application and Use	Commercial Furniture
Product RSL	10 years
Markets of Applicability	North America
Date of Issue	October 4, 2023
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	2022
LCA Software and Version Number	Sphera LCA FE (GaBi) 10.6
LCI Database and Version Number	Sphera MLC (GaBi) 2022.2
LCIA Methodology and Version Number	IPCC AR5 + 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 Tables: UNCPC 3812 serves as the core PCR. <input type="checkbox"/> Internal <input checked="" type="checkbox"/> External	 Jack Geibig jgeibig@ecoform.com
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: Environmental declarations from different programs (ISO 14025) may not be comparable. The PCR this EPD was based on was written to determine the potential environmental impacts of a furniture workspace product from cradle-to-grave. It was not written to support comparative assertions. EPDs based on different PCRs, or different calculation models, may not be comparable. When attempting to compare EPDs or life cycle impacts of products from different companies, the user should be aware of the uncertainty in the final results, due to and not limited to, the practitioner's assumptions, the source of the data used in the study, and the specifics of the product modeled. Additional information on the life cycle assessment can be found by contacting Haworth directly.</p>	

Company Description

Haworth strives to be a sustainable corporation. We believe operating a sustainable corporation will allow us to help people do great things for generations to come. We are on a journey—one that promotes longevity and delivers value to the people, communities, and planet that we serve. At our core, we are a family—and we weather challenges together. Haworth is built upon a culture that empowers members and all stakeholders to make positive changes. We strengthen existing partnerships and build new ones, while empowering our members and leveraging our global reach, as we continue our drive toward making positive changes for the people and communities, we serve all over the world.

Product Description

Haworth X Series office storage shelves offers a range of products that include office cabinets, office shelving, lockers, files, towers, personal storage, and small office storage cabinets. X Series office storage shelves adapts along with your changing workspace for a long-term solution. Its breadth and depth of storage elements in one product line—from office cabinets and lockers to personal storage, office shelving, and wardrobes—built from steel construction for durability, strength, and security. X Series Vertical Storage Unit is manufactured at Haworth’s facility in Holland, MI – an ISO 14001 certified manufacturing facility. This product can be easily disassembled at the end of its useful life. Components are identified with ISO recycling symbols and material information to assist in the recycling effort, where practical. And Haworth will take back X Series Vertical Storage Unit after their useful life and recycle the components.

The product reviewed is considered to fall within the requirements of the “general storage” sub-category, as defined by the BIMFA PCR for storage products. Results were calculated for a single configuration of the vertical storage unit (JUFS-3372-LL). The configuration selected was determined to have the highest potential impacts of all X Series Vertical Storage Unit configurations produced in North America, making the results in this EPD conservative and thus representative of all products listed. Product codes within the variation allowance include flipper door vertical storage units with steel or laminate fronts and steel end panels with product codes beginning with JUFS.

The composition of the storage is provided below, with a total product weight of 54.6 kg.

Material	[kg]	[%]	Post-Consumer Recycled Content [%]	Post-Industrial Recycled Content [%]	Recyclability [%]
Steel	37.18	68	14%	20%	90%
Fiberboard	14.64	27	70%	30%	100%
Paint	1.21	2	-	-	-
HPL	1.15	2	-	34%	-
ABS	0.22	<1	-	-	-
Other	0.20	<1	-	-	-

Additional Environmental Information

- [GREENGUARD Gold Certified](#)
- [BIFMA LEVEL 3 Certified](#)
- [FSC® Certified](#)

Functional Unit

The functional unit according to the PCR is 0.25 m³ of storage capacity, for a period of 10-years. In order to achieve the functional unit, 0.4 units of vertical storage units is required. The products under study have a 10-year service life under ANSI/BIFMA X5.9 and therefore do not require replacements to meet the functional unit. The area of each storage was calculated in accordance with the method outlined by section 4 of the PCR.

Cut-off Criteria

Material and energy inputs greater than 1% were included within the scope of analysis. Material and energy inputs less than 1% were included if sufficient data was available to warrant inclusion and/or it was thought to have significant environmental impact. Cumulative excluded material inputs and environmental impacts are less than 5% based on total weight of the functional unit. Cumulative excluded energy inputs and environmental impacts are less than 5% based on total energy required to manufacture 1 unit of product. Furthermore, neglected energy or mass flows do not make up more than 5% of energy or mass flows per module.

The list of excluded materials and energy inputs include:

- For products where assembly is required, the tools used during the installation of the product are multi-use tools and can be reused after each installation, the per-declared unit impacts are considered negligible and therefore are not included.
- Some material inputs may have been excluded within the GaBi datasets used for this project. All GaBi datasets have been critically reviewed and conform to the exclusion requirement of the BIFMA PCR for storage.
- Production of capital goods, infrastructure, and personnel-related activities are excluded, as required by the BIFMA PCR for storage.

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 Haworth and upstream suppliers, as well as intermediate transport and packaging requirements.

Distribution, Storage, and Use | Includes an average distribution to customers. No additional storage is required. There are no impacts associated with use of the product.

End-of-Life | Includes transport to and disposal of product and packaging based on average US recycling rates.

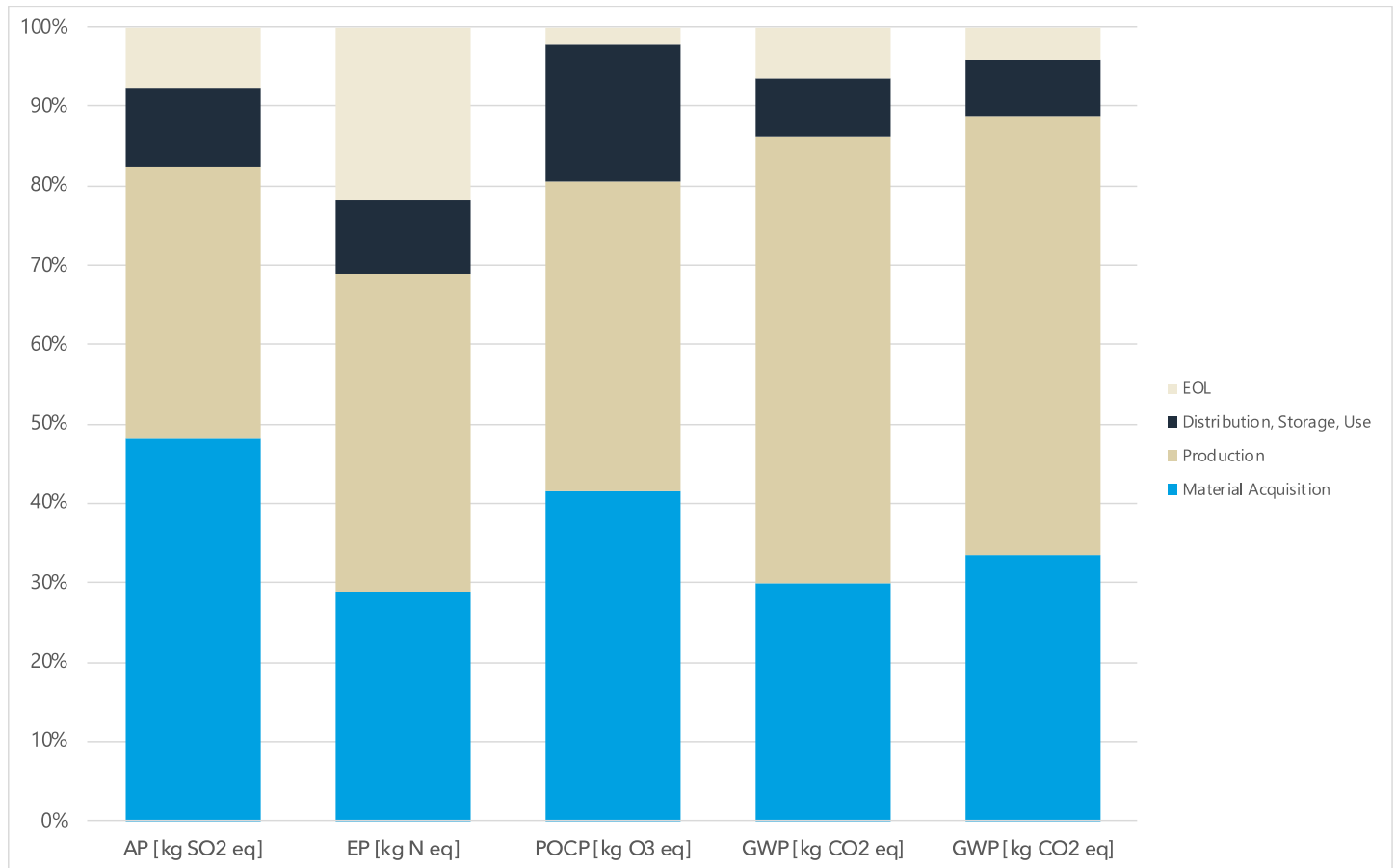
LCA Results

All results are given per functional unit, which is 0.25 m³ of storage capacity, for a period of 10 years. Results are reported separately by life cycle stage.

Impact Category	Material Acquisition	Production	Distribution, Storage, Use	EOL	Total
<i>IPCC AR5 LCIA Impacts</i>					
Global Warming Potential, incl biogenic [kg CO ₂ eq]	2.59E+01	4.84E+01	6.32E+00	5.64E+00	8.63E+01
Global Warming Potential, excl biogenic [kg CO ₂ eq]	2.96E+01	4.87E+01	6.36E+00	3.53E+00	8.83E+01
<i>TRACI LCIA Impacts (North America)</i>					
Acidification Potential [kg SO ₂ eq]	1.04E-01	7.39E-02	2.14E-02	1.63E-02	2.16E-01
Eutrophication Potential [kg N eq]	4.76E-03	6.65E-03	1.53E-03	3.63E-03	1.66E-02

Impact Category	Material Acquisition	Production	Distribution, Storage, Use	EOL	Total
Ozone Depletion Potential [kg CFC 11 eq]	1.62E-08	1.41E-12	1.94E-10	1.70E-14	1.64E-08
Smog Formation Potential [kg O ₃ eq]	1.32E+00	1.24E+00	5.50E-01	6.77E-02	3.18E+00
<i>Resource Use Indicators</i>					
Renewable primary resources used as an energy carrier [MJ]	1.21E+02	1.15E+02	5.73E+00	5.86E-01	2.43E+02
Renewable primary resources with energy content used as a material [MJ]	0.00E+00	4.16E+00	3.02E-01	0.00E+00	4.46E+00
Renewable primary resources, total [MJ]	1.21E+02	1.19E+02	6.04E+00	5.86E-01	2.48E+02
Non-renewable primary resources used as an energy carrier [MJ]	2.95E+02	7.04E+02	8.69E+01	5.55E+00	1.09E+03
Non-renewable primary resources with energy content used as a material [MJ]	8.79E+01	1.71E+00	3.56E+00	0.00E+00	9.31E+01
Non-renewable primary resources, total [MJ]	3.83E+02	7.05E+02	9.04E+01	5.55E+00	1.18E+03
Recovered energy [MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Net fresh water usage [kg]	1.95E-01	2.78E-01	1.50E-02	5.09E-03	4.93E-01
Primary Energy Demand, renewable and non-renewable energy [MJ]	6.95E+02	1.36E+03	1.54E+02	1.02E+01	2.22E+03

The chart below presents the relative contribution of each life cycle stage to the TRACI and IPCC environmental impact categories.



References

1. ISO 14040: 2006/ Amd 1:2020: Environmental Management – Life cycle assessment – Requirements and Guidelines.
2. ISO 14044: 2006/ Amd 1:2017/ Amd 2:2020: Environmental Management – Life cycle assessment – Requirements and Guidelines – Amendment 1.
3. ISO 14025:2006 Environmental labels and declarations – Type III environmental declarations – Principles and Procedures.
4. ISO 21930:2017 Sustainability in buildings and civil engineering works – Core rules for environmental product declarations of construction products and services.
5. IPCC, 2013: Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Stocker, T.F., D. Qin, G.-K. Plattner, M. Tignor, S.K. Allen, J. Boschung, A. Nauels, Y. Xia, V. Bex and P.M. Midgley (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA, 1535 pp.
6. TRACI: The Tool for the Reduction and Assessment of Chemical and Other Environmental Impacts. Version 2.1 – User Guide – <https://nepis.epa.gov/Adobe/PDF/P100HN53.pdf>.
7. US EPA, 2022. *Facts and Figures about Materials, Waste and Recycling*.- <https://www.epa.gov/facts-and-figures-about-materials-waste-and-recycling/national-overview-facts-and-figures-materials>
8. NSF International. BIFMA PCR for Storage: UNCPC 3812, Version 2.0 valid through September 30, 2027.