ENVIRONMENTAL PRODUCT DECLARATION

as per *ISO 14025* and *EN 15804+A2*

Owner of the Declaration	Modernfold Inc.
Publisher	Institut Bauen und Umwelt e.V. (IBU)
Programme holder	Institut Bauen und Umwelt e.V. (IBU)
Declaration number	EPD-MOF-20250310-CBA1-EN
Issue date	11/07/2025
Valid to	10/07/2030

Glass Wall System Acousti-Clear Motorized

Modernfold

Institut Bauen und Umwelt e.V.

ECO PLATFORM EPD VERIFIED

www.ibu-epd.com | https://epd-online.com

General Information

Modernfold

Programme holder

IBU – Institut Bauen und Umwelt e.V.
Hegelplatz 1
10117 Berlin
Germany

Declaration number

EPD-MOF-20250310-CBA1-EN

This declaration is based on the product category rules:

Room partition systems, 01/08/2021
(PCR checked and approved by the SVR)

Issue date

11/07/2025

Valid to

10/07/2030

Dipl.-Ing. Hans Peters
(Chairman of Institut Bauen und Umwelt e.V.)

Florian Pronold
(Managing Director Institut Bauen und Umwelt e.V.)

Glass Wall System Acousti-Clear Motorized

Owner of the declaration

Modernfold Inc.
West New Road 215
46140 Greenfield
United States

Declared product / declared unit

1 square meter of the Glass Wall System Acousti-Clear Motorized consisting of the following items:

- Rail assembly
- Glass panes
- Product packaging

Scope:

This Environmental Product Declaration refers to Glass Wall System Acousti-Clear Motorized manufactured by Modernfold. The production site is located in Dyersville, IA (USA).

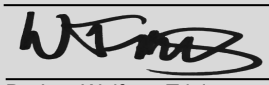
The data represents the year 2024.

The owner of the declaration shall be liable for the underlying information and evidence; the IBU shall not be liable with respect to manufacturer information, life cycle assessment data and evidences.

The EPD was created according to the specifications of EN 15804+A2. In the following, the standard will be simplified as *EN 15804*.

Verification

The standard EN 15804 serves as the core PCR
Independent verification of the declaration and data according to ISO 14025:2011
☐ internally ☒ externally



Dr.-Ing. Wolfram Trinius,
(Independent verifier)

Product

Product description/Product definition

Acousti-Clear® Glass – Modernfold's premier movable acoustical glass product offering features a family of acoustical glass wall products that provide 45 and 51 STC. Offered in Motorized, Automatic, and Demountable versions, Acousti-Clear® canbe utilized in a variety of spaces that require a combination of user needs. Acousti-Clear® glass panels feature customizable tempered glass with contemporary aluminum frames which can be powder coated to over 180 RAL Classic powder coat colors (optional).
For the use and application of the product the respective national provisions at the place of use apply:

- *Sound Transmission Class (STC)*
- *Americans with Disabilities Act (ADA)*

Application

Modernfold Acousti-Clear movable wall systems are intended for interior applications including commercial office environments, education, healthcare, hospitality, and multi-purpose spaces and provide the primary function of partitioning interior spaces. Acousti-Clear motorized uses top and bottom horizontal seals that are activated by electric motors.

Technical Data

Technical specifications of the products included in the LCA scope, as well as product performance testing results are available on the manufacturer's website (https://www.modernfold.com/en-US/downloads/product-documents).

Name	Value	Unit
Airborne sound reduction	45	dB
Weight of wall load	9.41	kN/m^2

Performance data of the product with respect to its characteristics in accordance with the relevant technical provision which can be applied are mentioned above.

Base materials/Ancillary materials

Name	Value	Unit
Glass	52	%
Bitumen	17	%
Aluminium	14	%
Steel	6	%
Plastics	6	%
Packaging	5	%

The product includes partial articles which contain substances listed in the Candidate List of REACH Regulation *1907/2006/EC* (date: 25.01.2025) exceeding 0.1 percentage by mass: No

The Candidate List can be found on the ECHA website address: https:echa.europa.eu/de/home.

Reference service life

The reference service life of Acousti-Clear Motorized is about 20 years, depending on the application and frequency of use (approx. 50 closing cycles per year). For repairs and renewals,suitable spare parts are available.

LCA: Calculation rules

Declared Unit

The declared unit is 1 square meter of the product: Acousti-Clear Motorized Glass including packaging

Name	Value	Unit
Declared unit	1	m^2
Grammage	47.15	kg/m^2
Weight (per sqft)	9.66	lbs
Weight (per sqm)	103.99	lbs
Weight (per sqft)	4.38	kg
Layer thickness	0.127	m

1 m^2 = 10,7639 sqft
1 kg/m² = 0.205 lbs/sqft
1 Inch = 0.0254 m

System boundary

The type of EPD is: cradle to gate with options, modules C1–C4, and module D (A1–A3 + C + D and additional modules: A4+ A5, B6)

Production - Module A1-A3

The product stage includes: — A1, raw material extraction, processing and mechanical treatments, processing of secondary material input (e.g. recycling processes), — A2, transport to the manufacturer, — A3, manufacturing and assembly including provision of all materials, products and energy, as well as waste processing up to the end-of- waste state.

Construction stage - Modules A4-A5

The construction process stage includes:
— A4, transport to the building site; — A5, installation into the building; including provision of all materials, products and energy, as well as waste processing up to the end-of-waste state or disposal of final residues during the construction process stage.

Use stage - Module B6

The use stage related to the operation of the building includes:
— B6, operational energy use

End-of-life stage– Modules C1-C4 and D

The end-of-life stage includes: — C1, de-construction, demolition: — C2, transport to waste processing; — C3, waste processing for reuse, recovery and/or recycling; — C4, disposal; including provision and all transport, provision of all materials, products and related energy and water use. Module D (Benefits and loads beyond the system boundary) includes:
— D, recycling potentials, expressed as net impacts and benefits.

Geographic Representativeness

Land or region, in which the declared product system is manufactured, used or handled at the end of the product´s lifespan: Global

Comparability
Basically, a comparison or an evaluation of EPD data is only possible if all the data sets to be compared were created according to *EN 15804* and the building context, respectively the product-specific characteristics of performance, are taken into account. Background database: GaBi, CUP 2024.2.

LCA: Scenarios and additional technical information

Characteristic product properties of biogenic carbon

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Name	Value	Unit
Biogenic carbon content in product	0	kg C
Biogenic carbon content in accompanying packaging	0.966 / 2.13	kg C / lbs C

Dyersville, IA (USA) is considered for A3.

Note: 1 kg (2.20 lbs) of biogenic carbon is equivalent to 44/12 kg of CO_2.

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Transport to the building site (A4)

Name	Value	Unit
Litres of fuel	0.0276	l/tkm
Transport distance	100	km
Transport distance	62.1	mi
Capacity utilisation (including empty runs)	55	%

The product is transported via truck. The main distribution region is US. In order to allow scaling to a specific point of installation 100 km / 62.1 mi are declared.

Installation into the building (A5)

Name	Value	Unit
Waste packaging (paper)	1.085 / 0.222	kg per sqm / lbs per sqft
Waste packaging (wood)	1.231 / 0.252	kg per sqm / lbs per sqft

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Reference service life

Name	Value	Unit
Reference service life	20	a

Operational energy use (B6)

Name	Value	Unit
Electricity consumption for 1 year (per sqft)	0.381	kWh
Days per year in use	260	days
On mode power	44	W
On mode per day	0.033	hrs
Off mode per day	23.967	hrs

End of life (C1-C4)

Name	Value	Unit
Collected separately waste type	44.8 / 98.8	kg / lbs
Recycling	9.63 / 21.2	kg / lbs
Energy recovery	10.6 / 23.4	kg / lbs
Landfilling	24.6 / 54.2	kg / lbs

The product is disassembled in a recycling process. Material recycling is then assumed for the metals, and electronics. The plastic components are assumed to be incinerated with energy recovery. Glass and electromechanics are assumed to be landfilled. Region for the End of Life is: Global

Reuse, recovery and/or recycling potentials (D), relevant scenario information

Name	Value	Unit
Recycling	100	%

The collection rate is 100 %.

LCA: Results

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DESCRIPTION OF THE SYSTEM BOUNDARY (X = INCLUDED IN LCA; MND = MODULE OR INDICATOR NOT DECLARED; MNR = MODULE NOT RELEVANT)

Product stage			Construction process stage		Use stage							End of life stage				Benefits and loads beyond the system boundaries
Raw material supply	Transport	Manufacturing	Transport from the gate to the site	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction 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
X	X	X	X	X	MND	MND	MNR	MNR	MNR	X	MND	X	X	X	X	X

RESULTS OF THE LCA - ENVIRONMENTAL IMPACT according to EN 15804+A2: 1 m²/pce Glass Wall System Acousti-Clear Motorized

Parameter	Unit	A1-A3	A4	A5	B6	C1	C2	C3	C4	D
GWP-total	kg CO_2 eq	8.45E+01	4.87E-01	1.75E+00	3.51E+00	0	2.32E-01	2.67E+01	3.72E-01	-1.17E+01
GWP-fossil	kg CO_2 eq	8.8E+01	4.66E-01	3.58E-02	3.5E+00	0	2.22E-01	2.67E+01	3.69E-01	-1.17E+01
GWP-biogenic	kg CO_2 eq	-3.59E+00	2.03E-02	1.71E+00	6.85E-04	0	9.64E-03	-1.35E-04	1.17E-03	-4.93E-02
GWP-luluc	kg CO_2 eq	3.2E-02	1.82E-05	2.38E-05	3.28E-04	0	8.66E-06	1.72E-03	2.21E-03	1.06E-04
ODP	kg CFC11 eq	3.44E-09	4.06E-14	2.1E-13	2.15E-11	0	1.93E-14	9.74E-12	9.94E-13	-9.46E-11
AP	mol H^+ eq	4.52E-01	5.14E-04	4.28E-04	4.76E-03	0	2.45E-04	4.53E-03	2.62E-03	-2.84E-02
EP-freshwater	kg P eq	1.33E-04	1.19E-07	5.98E-08	2.11E-06	0	5.66E-08	2.26E-06	8.38E-07	-1.54E-05
EP-marine	kg N eq	1.1E-01	1.83E-04	1.57E-04	1.07E-03	0	8.73E-05	1E-03	6.74E-04	-2.93E-03
EP-terrestrial	mol N eq	1.25E+00	2.08E-03	1.96E-03	1.16E-02	0	9.92E-04	2.1E-02	7.42E-03	-3.15E-02
POCP	kg NMVOC eq	2.77E-01	5.38E-04	4.17E-04	3.13E-03	0	2.56E-04	2.8E-03	2.06E-03	-9.58E-03
ADPE	kg Sb eq	6.85E-04	1.21E-08	2.22E-09	3.64E-07	0	5.76E-09	8.8E-08	2.39E-08	-4.45E-04
ADPF	MJ	1.57E+03	6.5E+00	4.73E-01	5.94E+01	0	3.1E+00	1.33E+01	4.86E+00	-1.98E+02
WDP	m^3 world eq deprived	8.6E+00	9.36E-04	1.91E-01	8.06E-01	0	4.45E-04	2.51E+00	4.22E-02	-1.25E+00

GWP = Global warming potential; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential of land and water; EP = Eutrophication potential; POCP = Formation potential of tropospheric ozone photochemical oxidants; ADPE = Abiotic depletion potential for non-fossil resources; ADPF = Abiotic depletion potential for fossil resources; WDP = Water (user) deprivation potential)

RESULTS OF THE LCA - INDICATORS TO DESCRIBE RESOURCE USE according to EN 15804+A2: 1 m²/pce Glass Wall System Acousti-Clear Motorized

Parameter	Unit	A1-A3	A4	A5	B6	C1	C2	C3	C4	D
PERE	MJ	2.38E+02	3.13E-02	2.92E+01	1.61E+01	0	1.49E-02	4.8E+00	8.48E-01	-7.05E+01
PERM	MJ	2.9E+01	0	-2.9E+01	0	0	0	0	0	0
PERT	MJ	2.67E+02	3.13E-02	1.29E-01	1.61E+01	0	1.49E-02	4.8E+00	8.48E-01	-7.05E+01
PENRE	MJ	1.5E+03	6.5E+00	4.73E-01	5.94E+01	0	3.1E+00	7.78E+01	4.86E+00	-1.98E+02
PENRM	MJ	6.45E+01	0	0	0	0	0	-6.45E+01	0	0
PENRT	MJ	1.57E+03	6.5E+00	4.73E-01	5.94E+01	0	3.1E+00	1.33E+01	4.86E+00	-1.98E+02
SM	kg	9.17E+00	0	0	0	0	0	0	0	6.59E-01
RSF	MJ	0	0	0	0	0	0	0	0	0
NRSF	MJ	0	0	0	0	0	0	0	0	0
FW	m^3	3.22E-01	3.82E-05	4.49E-03	2.46E-02	0	1.82E-05	6.01E-02	1.29E-03	-7.92E-02

PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials; PENRM = Use of non-renewable primary energy resources used as raw materials; PENRT = Total use of non-renewable primary energy resources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water

RESULTS OF THE LCA – WASTE CATEGORIES AND OUTPUT FLOWS according to EN 15804+A2: 1 m²/pce Glass Wall System Acousti-Clear Motorized

Parameter	Unit	A1-A3	A4	A5	B6	C1	C2	C3	C4	D
HWD	kg	2.85E-06	2.01E-10	2.7E-10	3.25E-08	0	9.55E-11	1.09E-08	1.21E-09	-6.09E-08
NHWD	kg	9.75E+00	6.22E-04	4.83E-02	2.02E-02	0	2.96E-04	2.68E+00	2.46E+01	-1.83E-01
RWD	kg	3.37E-02	7.23E-06	2.38E-05	6.08E-03	0	3.44E-06	4.22E-04	5.1E-05	-1.51E-02
CRU	kg	0	0	0	0	0	0	0	0	0
MFR	kg	3.6E+00	0	0	0	0	0	2.96E+00	0	0
MER	kg	0	0	0	0	0	0	0	0	0
EEE	MJ	1.36E-01	0	2.33E+00	0	0	0	4.03E+01	0	0

EET	MJ	2.43E-01	0	4.22E+00	0	0	0	9.34E+01	0	0

HWD = Hazardous waste disposed; NHWD = Non-hazardous waste disposed; RWD = Radioactive waste disposed; CRU = Components for re-use; MFR = Materials for recycling; MER = Materials for energy recovery; EEE = Exported electrical energy; EET = Exported thermal energy

RESULTS OF THE LCA – additional impact categories according to EN 15804+A2-optional: 1 m²/pce Glass Wall System Acousti-Clear Motorized

Parameter	Unit	A1-A3	A4	A5	B6	C1	C2	C3	C4	D
PM	Disease incidence	3.47E-06	4.71E-09	2.35E-09	4.35E-08	0	2.24E-09	5.22E-08	3.28E-08	-3.18E-07
IR	kBq U235 eq	3.97E+00	9.9E-04	3.75E-03	5.02E-01	0	4.71E-04	4.5E-02	5.91E-03	-2.64E+00
ETP-fw	CTUe	1.25E+03	4.82E+00	2.07E-01	1.3E+01	0	2.29E+00	5.09E+00	2.8E+00	-3.14E+01
HTP-c	CTUh	5.45E-08	8.71E-11	1.23E-11	4.84E-10	0	4.14E-11	4.14E-10	6.61E-11	-2.78E-09
HTP-nc	CTUh	7.08E-07	2.73E-09	2.43E-10	7.98E-09	0	1.3E-09	3.13E-08	2.56E-09	-6.67E-08
SQP	SQP	4.07E+02	2.24E-02	1.44E-01	5.81E+00	0	1.07E-02	4.38E+00	1.34E+00	-3.11E+01

PM = Potential incidence of disease due to PM emissions; IR = Potential Human exposure efficiency relative to U235; ETP-fw = Potential comparative Toxic Unit for ecosystems; HTP-c = Potential comparative Toxic Unit for humans (cancerogenic); HTP-nc = Potential comparative Toxic Unit for humans (not cancerogenic); SQP = Potential soil quality index

Disclaimer 1 – for the indicator “Potential Human exposure efficiency relative to U235”. This impact category deals mainly with the eventual impact of low-dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure or radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, radon and from some construction materials is also not measured by this indicator.

Disclaimer 2 – for the indicators “abiotic depletion potential for non-fossil resources”, “abiotic depletion potential for fossil resources”, “water (user) deprivation potential, deprivation-weighted water consumption”, “potential comparative toxic unit for ecosystems”, “potential comparative toxic unit for humans – cancerogenic”, “Potential comparative toxic unit for humans - not cancerogenic”, “potential soil quality index”. The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high as there is limited experience with the indicator.

This EPD was created using a software tool.

References

ADA
Americans with Disabilities Act 1990
https:/www.ada.gov/

STC
Sound Transmission Class
https://asastandards.org/terms/sound-transmission-class/

EN 15804
EN 15804:2012+A1 2013, Sustainability of construction works — Environmental Product Declarations — Core rules for the product category of construction products.

EN 15804
EN 15804:2012+A2:2019+AC:2021, Sustainability of construction works — Environmental Product Declarations — Core rules for the product category of construction products.

ISO 14025
EN ISO 14025:2011, Environmental labels and declarations — Type III environmental declarations — Principles and procedures.

Further References

IBU 2021
General Instructions for the EPD programme of Institut Bauenund Umwelt e.V. Version 2.0, Berlin: Institut Bauen und Umwelte.V., 2021. www.ibu-epd.com.

GaBi ts software
Sphera Solutions GmbH GaBi Software System and Database for Life Cycle Engineering 1992-2020
Version 10.0.0.71
University of Stuttgart
Leinfelden-Echterdingen

GaBi ts documentation
GaBi life cycle inventory data documentation (https://www.gabisoftware.com/support/gabi/gabidatabase2020-lcidocumentation/).

LCA-tool dormakaba
Tool No.: dormakaba tool 2025
Developed by Sphera Solutions GmbH

PCR Part A
PCR – Part A: Calculation Rules for the Life Cycle Assessmentand Requirements on the Project Re-port according to EN15804+A2:2019,Version 1.0, 2020, Institut Bauen und Umwelt e.V., www.ibu-epd.com.

PCR Part B
PCR – Part B: Requirements on the EPD for Room partition systems, version 08/2021, Institut Bauen und Umwelt e.V., www.ibu-epd.com.
The literature referred to in the Environmental Product Declaration must be listed in full.Standards already fully quoted in the EPD do not need to be listed here again.
The current version of PCR Part A and PCR Part B of the PCR document on which they are based must be referenced.

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