



Environmental Product Declaration

Volpaneel 54 (VP54)

Issue Date

01-07-2024

Owner of Declaration

Faay Vianen B.V.

Publisher

Hedgehog Company B.V.

According to

ISO14025 and EN15804+A2

Program Operator

N.a.

Calculation number

EPD-2024-7802



General information

Company

Manufacturer	Faay Vianen B.V.
Product Location	Netherlands
Address	Mijlweg 3, 4131 PJ Vianen
E-mail	info@faay.nl
Website	www.faay.nl

EPD information

EPD for	Faay Volpaneel VP54
Project Number	EPD-2024-7802
Date of Issue	01-07-2024
Product Category Rules	EN15804+A2 / Assessment Method v1.1
Declared Unit	1 m2
Reference Service Life	75 years

Scope of declaration

Production stage	A1	x	Raw material supply
	A2	x	Transport
	A3	x	Production
Construction stage	A4	x	Transport to site
	A5	x	Construction - installation process
Use stage	B1	x	Use
	B2	x	Maintenance
	B3	x	Repair
	B4	x	Replacement
	B5	x	Refurbishment
	B6	MND	Operational energy use
	B7	MND	Operational water use
End-of-life stage	C1	x	Deconstruction demolition
	C2	x	Transport
	C3	x	Waste processing
	C4	x	Disposal
Benefits and loads beyond the system boundaries	D	x	Reuse - Recovery - Recycling potential

Verification statement of the background LCA

CEN standard EN1580+A2 serves as core PCR. Independent verification of the background LCA report and data, according to EN ISO14040/14044

- ☐ Internal
☒ External

Third party verifier:



Tim Mol, EcoReview NL B.V.

Product description

VP54 is a space-saving (54mm) storey high partition wall. The wall consists of a solid flax straw core with a 9,5 mm plasterboard panel on either side. Framework, insulation and end cladding have all been incorporated into the panel. As the top layer is made of plaster, a wide variety of finishes can be applied.

Components (>1%)	%
Gypsum	classified
Flaxboard	classified
Glue	classified

Declaration of material content of SVHC

No substances of very high concern of authorisation to declare.

Biogenic carbon content

The biogenic carbon content of the VP54 is 5,40 kg C per m² panel.

Allocation

For the modelling of the used flax board in the VP54, flax production was modelled based on Carus & de Beus (2019). The impact of this production was allocated to the used flax shives for the flax board production based on economic values, as presented in Carus & de Beus (2019)¹.

¹ Carus, M., de Beus, N. (2019) "Carbon Footprint and Sustainability of Different Natural Fibres for Biocomposites and Insulation Material", Nova-Institute.

Calculation rules

The method used to quantify the environmental performance of the product in question is the life cycle assessment (LCA) regulated by ISO 14040 and ISO 14044. Process data over the year of 2023 is used to model the product system. Ecoinvent v3.6 and NMD v3.8 are used as background databases.

Production (A1-A3)

The Volpaneel VP54 is produced at the production site of Faay in Vianen. Within these modules, the following is included:

- The provision of resources, additives and energy;
- Transport of the above items to the production site;
- On-site production processes, including energy;
- Transport and treatment of production residues

Construction stage (A4-A5)

Transport to the construction site is based on the pre-described transport distance 150 km, in accordance with the Bepalingsmethode. Additives and materials required during the installation stage are included in module A5.

Use stage (B1-B5)

No relevant material and energy inputs are required in this module. Neither any hazardous emissions to air, soil or water are emitted during the use phase. The potential impact of this stage is therefore negligible and declared as 0.

Destruction stage (C1)

The deconstruction phase is performed manually. Thus, the impacts within this module are also negligible.

End-of-life stage (C2-C4)

This EPD includes the transport from the demolition site to the sorting, waste treatment and final disposal locations in accordance with the Bepalingsmethode. This stage includes an 85% product take back rate for Faay, of which 92% can be recycled. The non-collected products are treated according to the prescribed waste scenarios from the Bepalingsmethode.

Loads and benefits outside the system boundaries (D)

The potential loads and benefits of recycling and reuse of materials are included in this EPD. Next to that, the potential benefits from incineration are calculated and included as well.

Environmental impact per declared unit

The LCA results are presented in accordance with the Assessment Method. Set 1 is in accordance with EN15804+A1:2013, and is supplemented with the correct characterization factors as described in the PCR. Set 2, in accordance with EN15804+A2:2019, is an addition to the first set and contains additional environmental impact categories.

Set 1	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	C1	C2	C3	C4	D
ADPE	kg Sb eq	2,55E-04	1,46E-05	3,41E-05	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,63E-05	4,45E-07	2,79E-07	-3,20E-05
ADPF	MJ	2,27E+02	8,74E+00	2,78E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	9,75E+00	7,32E-01	7,45E-01	-8,74E+00
GWP	kg CO2 eq	1,17E+01	5,71E-01	1,67E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	6,38E-01	2,29E-01	1,01E-01	-7,51E-01
ODP	kg CFC-11 eq	2,02E-06	1,01E-07	2,14E-07	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,13E-07	1,01E-08	8,37E-09	-2,20E-07
POCP	kg C2H4 eq	1,10E-02	3,45E-04	2,31E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	3,85E-04	1,57E-04	4,38E-05	-1,10E-03
AP	kg SO2 eq	5,96E-02	2,51E-03	9,35E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,80E-03	8,63E-04	1,97E-04	-8,67E-03
EP	kg PO4--- eq	1,12E-02	4,94E-04	1,49E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	5,51E-04	2,16E-04	5,52E-05	-2,68E-03
<i>Toxicity indicators for the Dutch market</i>														
HTP	kg 1,4-DB eq	4,53E+00	2,41E-01	1,14E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,69E-01	1,06E-01	1,47E-02	-7,40E-01
FAETP	kg 1,4-DB eq	6,32E-01	7,02E-03	3,68E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	7,84E-03	3,14E-03	2,96E-04	-1,01E-01
MAETP	kg 1,4-DB eq	4,20E+02	2,53E+01	6,84E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,82E+01	4,19E+00	1,12E+00	-3,06E+01
TETP	kg 1,4-DB eq	1,79E-01	8,50E-04	7,46E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	9,49E-04	1,56E-04	4,23E-05	-4,40E-02
ECI	Euro	1,44E+00	6,89E-02	2,52E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	7,69E-02	2,73E-02	7,91E-03	-1,75E-01
ADPF	kg Sb eq	1,09E-01	4,20E-03	1,34E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	4,69E-03	3,52E-04	3,58E-04	-4,20E-03

ADPE = Abiotic depletion potential for non-fossil resources; **ADPF** = Abiotic depletion potential for fossil resources; **GWP** = Global warming potential; **ODP** = Depletion potential of the stratospheric ozone layer; **POCP** = Formation potential of tropospheric ozone photochemical oxidants; **AP** = Acidification potential of land and water; **EP** = Eutrophication potential; **HTP** = Human toxicity potential; **FAETP** = Freshwater aquatic ecotoxicity potential; **MAETP** = Marine aquatic ecotoxicity potential; **TETP** = Terrestrial ecotoxicity potential; **ECI** = Environmental Costs Indicator; **ADPF** = Abiotic depletion potential for fossil resources

Set 2	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	C1	C2	C3	C4	D
GWP-total	kg CO2 eq	-7,95E+00	5,76E-01	-1,39E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	6,43E-01	2,14E+01	1,83E+00	-1,26E+00
GWP-f	kg CO2 eq	1,18E+01	5,76E-01	1,67E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	6,43E-01	2,30E-01	2,88E-02	-7,75E-01
GWP-b	kg CO2 eq	-1,98E+01	0,00E+00	-3,05E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,12E+01	1,80E+00	0,00E+00
GWP-luluc	kg CO2 eq	4,44E-02	2,11E-04	-8,42E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,36E-04	3,05E-05	1,05E-05	-4,89E-01
ODP	kg CFC11 eq	2,09E-06	1,27E-07	2,46E-07	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,42E-07	1,05E-08	1,05E-08	-2,02E-07
AP	mol H+ eq	7,85E-02	3,34E-03	1,20E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	3,73E-03	1,26E-03	2,61E-04	-1,30E-02
EP-fw	kg P eq	4,53E-04	5,81E-06	7,07E-05	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	6,49E-06	1,98E-06	4,34E-07	-6,68E-05
EP-m	kg N eq	1,96E-02	1,18E-03	2,70E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,31E-03	5,59E-04	1,21E-04	-3,83E-03
EP-t	mol N eq	2,32E-01	1,30E-02	3,37E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,45E-02	6,41E-03	9,79E-04	-5,54E-02
POCP	kg NMVOC eq	6,12E-02	3,71E-03	1,07E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	4,14E-03	1,68E-03	3,10E-04	-9,93E-03
ADP-mm	kg Sb eq	2,47E-04	1,46E-05	3,40E-05	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,63E-05	4,45E-07	2,79E-07	-2,78E-05
ADP-f	MJ	2,70E+02	8,69E+00	2,80E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	9,70E+00	6,48E-01	7,45E-01	-1,57E+01
WDP	m3 depriv.	8,49E+00	3,11E-02	1,04E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	3,47E-02	2,24E-02	3,29E-02	-1,70E-01
PM	disease inc.	1,91E-06	5,18E-08	3,35E-07	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	5,78E-08	1,05E-08	5,01E-09	-1,50E-07
IR	kBq U-235 eq	1,05E+00	3,64E-02	1,01E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	4,06E-02	1,89E-03	3,00E-03	-1,11E-01
ETP-fw	CTUe	2,98E+02	7,75E+00	3,67E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	8,65E+00	3,40E+00	5,83E-01	-1,18E+02
HTP-c	CTUh	3,17E-08	2,51E-10	7,58E-09	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,81E-10	7,71E-09	1,47E-11	-1,34E-09
HTP-nc	CTUh	2,24E-07	8,48E-09	3,24E-08	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	9,46E-09	4,29E-09	5,15E-10	-4,93E-08
SQP	Pt	2,07E+02	7,54E+00	4,58E+02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	8,41E+00	1,88E-01	1,64E+00	-3,32E+02

GWP-total = Climate change; **GWP-f** = Climate change - Fossil; **GWP-b** = Climate change - Biogenic; **GWP-luluc** = Climate change - Land use and LU change; **ODP** = Ozone depletion; **AP** = Acidification; **EP-fw** = Eutrophication, freshwater; **EP-m** = Eutrophication, marine; **EP-T** = Eutrophication, terrestrial; **POCP** = Photochemical ozone formation; **ADP-mm** = Resource use, minerals and metals; **ADP-f** = Resource use, fossils; **WDP** = Water use; **PM** = Particulate matter; **IR** = Ionising radiation; **ETP-fw** = Ecotoxicity, freshwater; **HTP-c** = Human toxicity, cancer; **HTP-nc** = Human toxicity, non-cancer; **SQP** = Land use;

Resource use														
Parameter	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	C1	C2	C3	C4	D
PERE	MJ	-1,18E+02	0,00E+00	-9,96E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,17E-02	5,24E-02	1,88E-03	-1,22E+02
PERM	MJ	1,18E+02	0,00E+00	9,96E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PERT	MJ	4,46E+01	8,33E-02	6,72E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	9,02E-02	1,64E-02	6,23E-03	-2,91E+01
PENRE	MJ	-9,45E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,84E+00	1,13E+00	1,13E-01	-1,14E+01
PENRM	MJ	9,45E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PENRT	MJ	1,81E+02	7,06E+00	1,31E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	7,65E+00	2,56E-01	6,37E-01	-1,79E+00
PET	MJ	2,26E+02	7,15E+00	8,04E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	7,74E+00	2,73E-01	6,43E-01	-3,09E+01
SM	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
RSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
NRSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
FW	m3	1,49E-01	8,10E-04	9,10E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	8,78E-04	1,01E-03	6,37E-04	-3,33E-03
Waste flows														
Parameter	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	C1	C2	C3	C4	D
HWD	kg	1,89E-04	1,69E-05	2,91E-05	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,83E-05	9,92E-07	9,03E-07	-1,23E-05
NHWD	kg	1,41E+00	4,22E-01	3,53E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	4,57E-01	1,45E-02	3,67E+00	-9,33E-02
RWD	kg	7,34E-04	4,37E-05	6,02E-05	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	4,73E-05	1,04E-06	3,85E-06	-7,54E-05
Output flows														
Parameter	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	C1	C2	C3	C4	D
CRU	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
MFR	kg	0,00E+00	0,00E+00	5,06E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,69E+01	0,00E+00	0,00E+00
MER	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
EEE	MJ	0,00E+00	0,00E+00	1,88E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	6,27E+00	0,00E+00	0,00E+00
EET	MJ	0,00E+00	0,00E+00	3,24E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,08E+01	0,00E+00	0,00E+00

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; **PET** = Total Energy; **SM** = Use of secondary material; **RSF** = Use of renewable secondary fuels; **NRSF** = Use of non-renewable secondary fuels; **FW** = Use of net fresh water; **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 energy, electric; **EET** = Exported energy, thermal