

Environmental product declaration

in accordance with ISO 14025 and EN 15804+A2

Femunden 65L



The Norwegian EPD Foundation

Owner of the declaration:

Røros Produkter AS

Product:

Femunden 65L

Declared unit:

1 pcs

This declaration is based on Product Category Rules:

CEN Standard EN 15804:2012+A2:2019 serves as core PCR

NPCR 026:2022 Part B for Furniture

Program operator:

The Norwegian EPD Foundation

Declaration number:

NEPD-6427-5691-EN

Registration number:

NEPD-6427-5691-EN

Issue date: 16.04.2024

Valid to: 16.04.2029

EPD software:

LCAno EPD generator ID: 212896

General information

Product

Femunden 65L

Program operator:

The Norwegian EPD Foundation
Post Box 5250 Majorstuen, 0303 Oslo, Norway
Phone: +47 977 22 020
web: www.epd-norge.no

Declaration number:

NEPD-6427-5691-EN

This declaration is based on Product Category Rules:

CEN Standard EN 15804:2012+A2:2019 serves as core PCR
NPCR 026:2022 Part B for Furniture

Statement of liability:

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

Declared unit:

1 pcs Femunden 65L

Declared unit (cradle to gate) with option:

A1-A3,A4,A5,B2,B3,B4,C1,C2,C3,C4,D

Functional unit:

Femunden waste disposal unit can be used in both privat and public places.

General information on verification of EPD from EPD tools:

Independent verification of data, other environmental information and the declaration according to ISO 14025:2010, § 8.1.3 and § 8.1.4. Verification of each EPD is made according to EPD-Norway's guidelines for verification and approval requiring that tools are i) integrated into the company's environmental management system, ii) the procedures for use of the EPD tool are approved by EPD-Norway, and iii) the process is reviewed annually by an independent third party verifier. See Appendix G of EPD-Norway's General Programme Instructions for further information on EPD tools

Verification of EPD tool:

Independent third party verification of the EPD tool, background data and test-EPD in accordance with EPDNorway's procedures and guidelines for verification and approval of EPD tools.

Third party verifier:

Elisabet Amat, GREENIZE projects

(no signature required)

Owner of the declaration:

Røros Produkter AS
Contact person: Beate Schjøberg
Phone: +47 994 85 684
e-mail: beate.schjolberg@rorosprodukter.no

Manufacturer:

Røros Produkter AS

Place of production:

Røros Produkter AS
Øverhagaen 6
7374 Røros, Norway

Management system:

Miljøfyrtårn

Organisation no:

NO 992169133 MVA

Issue date:

16.04.2024

Valid to:

16.04.2029

Year of study:

2023

Comparability:

EPD of construction products may not be comparable if they not comply with EN 15804 and seen in a building context.

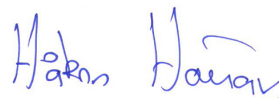
Development and verification of EPD:

The declaration is created using EPD tool lca.tools ver EPD2022.03, developed by LCA.no. The EPD tool is integrated in the company's management system, and has been approved by EPD Norway.

Developer of EPD: Andrea Mortensen

Reviewer of company-specific input data and EPD: Beate Schjøberg

Approved:



Håkon Hauan
Managing Director of EPD-Norway

Product

Product description:

Femunden is a smart and flexible waste recycling unit that can stand alone or together in modules. The units can be assembled into the different waste disposal stations you need.

The Femunden waste unit is available in 4 different sizes: 65 litres, 35 litres, 50 litres and 90 litres. This EPD is for the 65 liters, you will find the others as variants in this EPD.

Product specification

Femunden is a steel unit with wheels and removable top in different designs.

The Femunden waste disposal unit has many options for both tops and color combinations to create the expression the customer is looking for. The container is supplied with wheels for good mobility on the floor, or can be attached to the wall with its own bracket for easier cleaning.

<https://rorosprodukter.no/produkt/femunden/>

| Materials | kg | % | Recycled share in material (kg) | Recycled share in material (%) |
|-------------------------------|-------|-------|---------------------------------|--------------------------------|
| Metal - Stainless steel | 0,09 | 0,71 | 0,02 | 21,83 |
| Metal - Steel | 11,60 | 93,24 | 0,00 | 0,00 |
| Metall | 0,35 | 2,81 | 0,00 | 0,00 |
| Plastic - Polyethylene (LDPE) | 0,12 | 0,98 | 0,00 | 0,00 |
| Plastic - Polypropylene (PP) | 0,20 | 1,61 | 0,00 | 0,00 |
| Powder coating | 0,08 | 0,65 | 0,00 | 0,00 |
| Total | 12,44 | | 0,02 | |

| Packaging | kg | % | Recycled share in material (kg) | Recycled share in material (%) |
|-----------------------|-------|-------|---------------------------------|--------------------------------|
| Packaging - Cardboard | 0,58 | 95,25 | 0,21 | 36,00 |
| Packaging - Plastic | 0,01 | 1,48 | 0,00 | 0,00 |
| Packaging - Wood | 0,02 | 3,28 | 0,00 | 0,00 |
| Total incl. packaging | 13,05 | | 0,23 | |

Technical data:

| Kg | Hight | Width | Depth | Volume |
|------|-------|-------|-------|--------------------|
| 13,2 | 80 cm | 35 cm | 25 cm | 80 dm ³ |

Market:

Norway

Reference service life, product

30 years

Reference service life, building

LCA: Calculation rules

Declared unit:

1 pcs Femunden 65L

Cut-off criteria:

All major raw materials and all the essential energy is included. The production processes for raw materials and energy flows with very small amounts (less than 1%) are not included. These cut-off criteria do not apply for hazardous materials and substances.

Allocation:

The allocation is made in accordance with the provisions of EN 15804. Incoming energy and water and waste production in-house is allocated equally among all products through mass allocation. Effects of primary production of recycled materials is allocated to the main product in which the material was used. The recycling process and transportation of the material is allocated to this analysis.

Data quality:

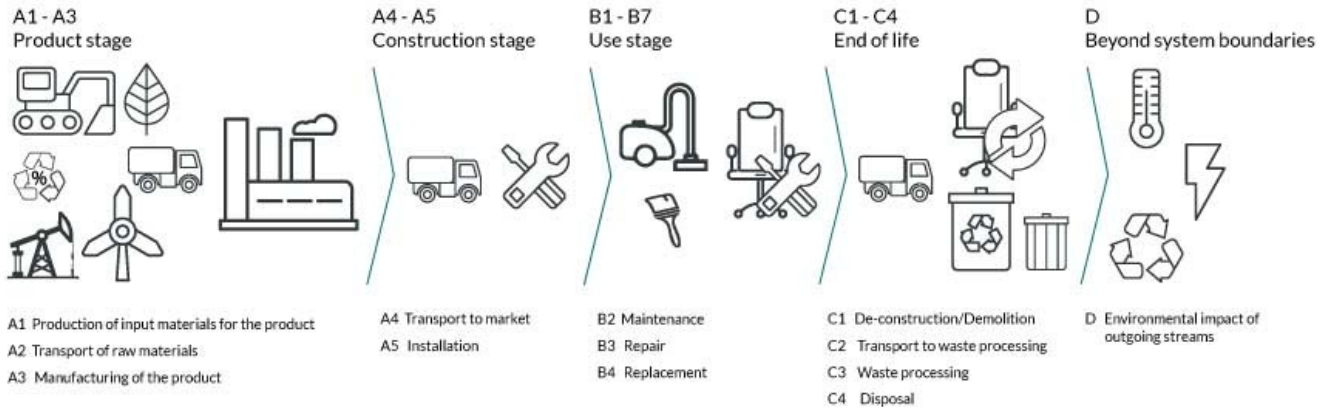
Specific data for the product composition are provided by the manufacturer. They represent the production of the declared product and were collected for EPD development in the year of study. Background data is based on registered EPDs according to EN 15804, Ostfold Research databases, ecoinvent and other LCA databases. The data quality of the raw materials in A1 is presented in the table below.

| Materials | Source | Data quality | Year |
|-------------------------------|------------------------|--------------|------|
| Metal - Stainless steel | ecoinvent 3.6 | Database | 2019 |
| Metal - Steel | ecoinvent 3.6 | Database | 2019 |
| Metall | ecoinvent 3.6 | Database | 2019 |
| Packaging - Cardboard | ecoinvent 3.6 | Database | 2019 |
| Packaging - Plastic | ecoinvent 3.6 | Database | 2019 |
| Packaging - Wood | Modified ecoinvent 3.6 | Database | 2019 |
| Plastic - Polyethylene (LDPE) | ecoinvent 3.6 | Database | 2019 |
| Plastic - Polypropylene (PP) | ecoinvent 3.6 | Database | 2019 |
| Powder coating | Ecoinvent 3.6 | Database | 2019 |

System boundaries (X=included, MND=module not declared, MNR=module not relevant)

| Product stage | | | Construction installation stage | | Use stage | | | | | | End of life stage | | | | Beyond the system boundaries | |
|---------------|-----------|---------------|---------------------------------|----------|-----------|-------------|--------|-------------|---------------|------------------------|-----------------------|----------------------------|-----------|------------------|------------------------------|------------------------------------|
| Raw materials | Transport | Manufacturing | Transport | 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 | X | X | X | MND | MND | MND | X | X | X | X | X |

System boundary:



Additional technical information:

LCA: Scenarios and additional technical information














The following information describe the scenarios in the different modules of the EPD.














B-scenario is 0 as it's not applicable for this product

| Transport from production place to user (A4) | Capacity utilisation (incl. return) % | Distance (km) | Fuel/Energy Consumption | Unit | Value (Liter/tonne) |
|--|---------------------------------------|---------------|-------------------------|-------|---------------------|
| Truck, 16-32 tonnes, EURO 6 (km) | 36,7 % | 300 | 0,043 | l/tkm | 12,90 |
| Assembly (A5) | | | | | |
| | Unit | Value | | | |
| Waste, packaging, corrugated board box, to average treatment (kg) | kg | 0,58 | | | |
| Waste, packaging, pallet, EUR wooden pallet, reusable, average treatment (kg) | kg | 0,02 | | | |
| Waste, packaging, plastic film (LDPE), to average treatment - A5 (kg) | kg | 0,01 | | | |
| Transport to waste processing (C2) | | | | | |
| | Capacity utilisation (incl. return) % | Distance (km) | Fuel/Energy Consumption | Unit | Value (Liter/tonne) |
| Truck, 16-32 tonnes, EURO 6 (km) | 36,7 % | 85 | 0,043 | l/tkm | 3,66 |
| Waste processing (C3) | | | | | |
| | Unit | Value | | | |
| Waste treatment per kg Non-hazardous waste, incineration with fly ash extraction - C3 (kg) | kg | 0,43 | | | |
| Waste treatment per kg Polyethylene, PE, incineration with fly ash extraction - C3 (kg) | kg | 0,12 | | | |
| Waste treatment per kg Polypropylene (PP), incineration with fly ash extraction - C3 (kg) | kg | 0,20 | | | |
| Waste treatment per kg Scrap steel, incineration with fly ash extraction (kg) | kg | 11,69 | | | |
| Waste, materials to recycling (kg) | kg | 3,97 | | | |
| Disposal (C4) | | | | | |
| | Unit | Value | | | |
| Landfilling of ashes and residues from incineration of Scrap steel (kg) | kg | 7,72 | | | |
| Landfilling of ashes from incineration of Non-hazardous waste, process per kg ashes and residues - C4 (kg) | kg | 0,10 | | | |
| Landfilling of ashes from incineration of Polyethylene, PE, process per kg ashes and residues - C4 (kg) | kg | 0,00 | | | |
| Landfilling of ashes from incineration of Polypropylene, PP, process per kg ashes and residues - C4 (kg) | kg | 0,01 | | | |
| Benefits and loads beyond the system boundaries (D) | | | | | |
| | Unit | Value | | | |
| Substitution of electricity, in Norway (MJ) | MJ | 0,82 | | | |
| Substitution of primary steel with net scrap (kg) | kg | 3,85 | | | |
| Substitution of thermal energy, district heating, in Norway (MJ) | MJ | 12,38 | | | |

LCA: Results

The LCA results are presented below for the declared unit defined on page 2 of the EPD document.

| Environmental impact | | | | | | | |
|--|------------------------|-----------|----------|----------|----|----|--|
| Indicator | Unit | A1-A3 | A4 | A5 | B2 | B3 | |
|  GWP-total | kg CO ₂ -eq | 4,99E+01 | 6,47E-01 | 1,03E+00 | 0 | 0 | |
|  GWP-fossil | kg CO ₂ -eq | 5,08E+01 | 6,47E-01 | 1,01E-02 | 0 | 0 | |
|  GWP-biogenic | kg CO ₂ -eq | -9,65E-01 | 2,68E-04 | 1,02E+00 | 0 | 0 | |
|  GWP-luluc | kg CO ₂ -eq | 3,00E-02 | 2,30E-04 | 3,17E-06 | 0 | 0 | |
|  ODP | kg CFC11 -eq | 3,40E-06 | 1,47E-07 | 2,03E-09 | 0 | 0 | |
|  AP | mol H ⁺ -eq | 4,27E-01 | 1,86E-03 | 4,56E-05 | 0 | 0 | |
|  EP-FreshWater | kg P -eq | 2,90E-03 | 5,17E-06 | 7,90E-08 | 0 | 0 | |
|  EP-Marine | kg N -eq | 5,55E-02 | 3,68E-04 | 1,56E-05 | 0 | 0 | |
|  EP-Terrestrial | mol N -eq | 1,33E+00 | 4,11E-03 | 1,64E-04 | 0 | 0 | |
|  POCP | kg NMVOC -eq | 2,37E-01 | 1,58E-03 | 4,71E-05 | 0 | 0 | |
|  ADP-minerals&metals ¹ | kg Sb-eq | 2,79E-02 | 1,79E-05 | 2,33E-07 | 0 | 0 | |
|  ADP-fossil ¹ | MJ | 5,88E+02 | 9,78E+00 | 1,35E-01 | 0 | 0 | |
|  WDP ¹ | m ³ | 1,50E+03 | 9,46E+00 | 1,78E-01 | 0 | 0 | |

| Indicator | Unit | B4 | C1 | C2 | C3 | C4 | D |
|--|------------------------|----|----|----------|-----------|----------|-----------|
|  GWP-total | kg CO ₂ -eq | 0 | 0 | 1,83E-01 | 1,94E+00 | 8,37E-02 | -4,32E+00 |
|  GWP-fossil | kg CO ₂ -eq | 0 | 0 | 1,83E-01 | 1,94E+00 | 8,36E-02 | -4,31E+00 |
|  GWP-biogenic | kg CO ₂ -eq | 0 | 0 | 7,59E-05 | 1,16E-03 | 6,32E-05 | -2,49E-03 |
|  GWP-luluc | kg CO ₂ -eq | 0 | 0 | 6,52E-05 | 3,39E-05 | 2,58E-05 | -4,37E-03 |
|  ODP | kg CFC11 -eq | 0 | 0 | 4,15E-08 | 1,26E-08 | 2,66E-08 | -5,23E-03 |
|  AP | mol H ⁺ -eq | 0 | 0 | 5,27E-04 | 6,56E-04 | 6,04E-04 | -2,17E-02 |
|  EP-FreshWater | kg P -eq | 0 | 0 | 1,46E-06 | 2,57E-06 | 8,21E-07 | -2,67E-04 |
|  EP-Marine | kg N -eq | 0 | 0 | 1,04E-04 | 2,57E-04 | 2,16E-04 | -4,55E-03 |
|  EP-Terrestrial | mol N -eq | 0 | 0 | 1,17E-03 | 2,74E-03 | 2,39E-03 | -4,66E-02 |
|  POCP | kg NMVOC -eq | 0 | 0 | 4,47E-04 | 7,71E-04 | 6,88E-04 | -2,18E-02 |
|  ADP-minerals&metals ¹ | kg Sb-eq | 0 | 0 | 5,06E-06 | 6,69E-07 | 1,49E-06 | -7,38E-05 |
|  ADP-fossil ¹ | MJ | 0 | 0 | 2,77E+00 | 7,91E-01 | 1,96E+00 | -3,67E+01 |
|  WDP ¹ | m ³ | 0 | 0 | 2,68E+00 | -8,33E-01 | 3,60E+00 | 2,07E+02 |

GWP-total = Global Warming Potential total; GWP-fossil = Global Warming Potential fossil fuels; GWP-biogenic = Global Warming Potential biogenic; GWP-luluc = Global Warming Potential land use and land use change; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential, Accumulated Exceedance; EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption







"Reading example: 9,0 E-03 = 9,0*10⁻³ = 0,009"







*INA Indicator Not Assessed

1. The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator

Remarks to environmental impacts

Additional environmental impact indicators

| Indicator | Unit | A1-A3 | A4 | A5 | B2 | B3 |
|---|-------------------|----------|----------|----------|----|----|
|  PM | Disease incidence | 5,13E-06 | 3,96E-08 | 6,76E-10 | 0 | 0 |
|  IRP ² | kgBq U235 -eq | 1,54E+00 | 4,27E-02 | 5,77E-04 | 0 | 0 |
|  ETP-fw ¹ | CTUe | 2,26E+03 | 7,25E+00 | 1,79E-01 | 0 | 0 |
|  HTP-c ¹ | CTUh | 3,55E-07 | 0,00E+00 | 5,00E-12 | 0 | 0 |
|  HTP-nc ¹ | CTUh | 1,73E-06 | 7,92E-09 | 2,25E-10 | 0 | 0 |
|  SQP ¹ | dimensionless | 2,17E+02 | 6,84E+00 | 9,35E-02 | 0 | 0 |











| Indicator | Unit | B4 | C1 | C2 | C3 | C4 | D |
|---|-------------------|----|----|----------|----------|----------|-----------|
|  PM | Disease incidence | 0 | 0 | 1,12E-08 | 2,15E-08 | 1,11E-08 | -3,88E-07 |
|  IRP ² | kgBq U235 -eq | 0 | 0 | 1,21E-02 | 2,41E-03 | 7,83E-03 | 8,66E-03 |
|  ETP-fw ¹ | CTUe | 0 | 0 | 2,05E+00 | 7,30E+00 | 1,12E+00 | -2,42E+02 |
|  HTP-c ¹ | CTUh | 0 | 0 | 0,00E+00 | 6,52E-10 | 3,80E-11 | -2,05E-08 |
|  HTP-nc ¹ | CTUh | 0 | 0 | 2,24E-09 | 5,21E-09 | 1,02E-09 | 4,38E-07 |
|  SQP ¹ | dimensionless | 0 | 0 | 1,94E+00 | 1,82E-01 | 4,24E+00 | -9,53E+00 |











PM = Particulate Matter emissions; IRP = Ionizing radiation – human health; ETP-fw = Eco toxicity – freshwater; HTP-c = Human toxicity – cancer effects; HTP-nc = Human toxicity – non cancer effects; SQP = Soil Quality (dimensionless)

"Reading example: 9,0 E-03 = 9,0*10⁻³ = 0,009"

*INA Indicator Not Assessed

1. The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator
2. 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 nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator.




| Resource use | | | | | | | | |
|---|-------|----------------|----------|----------|-----------|----|----|--|
| Indicator | | Unit | A1-A3 | A4 | A5 | B2 | B3 | |
|  | PERE | MJ | 8,22E+01 | 1,40E-01 | 2,25E-03 | 0 | 0 | |
|  | PERM | MJ | 5,04E+00 | 0,00E+00 | -5,04E+00 | 0 | 0 | |
|  | PERT | MJ | 8,73E+01 | 1,40E-01 | -5,04E+00 | 0 | 0 | |
|  | PENRE | MJ | 5,76E+02 | 9,78E+00 | 1,35E-01 | 0 | 0 | |
|  | PENRM | MJ | 1,21E+01 | 0,00E+00 | -3,82E-01 | 0 | 0 | |
|  | PENRT | MJ | 5,88E+02 | 9,78E+00 | -2,47E-01 | 0 | 0 | |
|  | SM | kg | 2,28E-01 | 0,00E+00 | 0,00E+00 | 0 | 0 | |
|  | RSF | MJ | 1,20E+00 | 5,01E-03 | 7,39E-05 | 0 | 0 | |
|  | NRSF | MJ | 3,37E+01 | 1,79E-02 | 3,03E-04 | 0 | 0 | |
|  | FW | m ³ | 6,21E-01 | 1,05E-03 | 6,38E-05 | 0 | 0 | |




| Indicator | | Unit | B4 | C1 | C2 | C3 | C4 | D |
|---|-------|----------------|----|----|----------|-----------|----------|-----------|
|  | PERE | MJ | 0 | 0 | 3,97E-02 | 4,66E-02 | 3,52E-02 | -9,23E+00 |
|  | PERM | MJ | 0 | 0 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 |
|  | PERT | MJ | 0 | 0 | 3,97E-02 | 4,66E-02 | 3,52E-02 | -9,23E+00 |
|  | PENRE | MJ | 0 | 0 | 2,77E+00 | 8,35E-01 | 1,96E+00 | -3,67E+01 |
|  | PENRM | MJ | 0 | 0 | 0,00E+00 | -1,17E+01 | 0,00E+00 | 0,00E+00 |
|  | PENRT | MJ | 0 | 0 | 2,77E+00 | -1,09E+01 | 1,96E+00 | -3,67E+01 |
|  | SM | kg | 0 | 0 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 |
|  | RSF | MJ | 0 | 0 | 1,42E-03 | 1,01E-03 | 9,34E-04 | 1,52E-01 |
|  | NRSF | MJ | 0 | 0 | 5,07E-03 | 0,00E+00 | 4,51E-02 | 4,08E+00 |
|  | FW | m ³ | 0 | 0 | 2,96E-04 | 1,05E-03 | 1,77E-03 | -1,66E-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 materials; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Net use of fresh water

"Reading example: 9,0 E-03 = 9,0*10⁻³ = 0,009"

*INA Indicator Not Assessed






| End of life - Waste | | | | | | | | |
|---|------|------|----------|----------|----------|----|----|--|
| Indicator | | Unit | A1-A3 | A4 | A5 | B2 | B3 | |
|  | HWD | kg | 3,56E-01 | 5,04E-04 | 0,00E+00 | 0 | 0 | |
|  | NHWD | kg | 2,21E+01 | 4,76E-01 | 5,91E-01 | 0 | 0 | |
|  | RWD | kg | 1,57E-03 | 6,66E-05 | 0,00E+00 | 0 | 0 | |






| Indicator | | Unit | B4 | C1 | C2 | C3 | C4 | D |
|---|------|------|----|----|----------|----------|----------|-----------|
|  | HWD | kg | 0 | 0 | 1,43E-04 | 0,00E+00 | 7,78E+00 | -2,21E-02 |
|  | NHWD | kg | 0 | 0 | 1,35E-01 | 4,31E-01 | 6,20E-02 | -1,76E+00 |
|  | RWD | kg | 0 | 0 | 1,89E-05 | 0,00E+00 | 1,22E-05 | 6,31E-06 |

HWD = Hazardous waste disposed; NHWD = Non-hazardous waste disposed; RWD = Radioactive waste disposed

*Reading example: 9,0 E-03 = $9,0 \cdot 10^{-3} = 0,009$

*INA Indicator Not Assessed

| End of life - Output flow | | | | | | | | |
|---|-----|------|----------|----------|----------|----|----|--|
| Indicator | | Unit | A1-A3 | A4 | A5 | B2 | B3 | |
|  | CRU | kg | 0,00E+00 | 0,00E+00 | 1,90E-02 | 0 | 0 | |
|  | MFR | kg | 1,60E+00 | 0,00E+00 | 5,45E-01 | 0 | 0 | |
|  | MER | kg | 3,20E-03 | 0,00E+00 | 4,16E-02 | 0 | 0 | |
|  | EEE | MJ | 2,62E-03 | 0,00E+00 | 3,39E-02 | 0 | 0 | |
|  | EET | MJ | 3,96E-02 | 0,00E+00 | 5,13E-01 | 0 | 0 | |

| Indicator | | Unit | B4 | C1 | C2 | C3 | C4 | D |
|---|-----|------|----|----|----------|----------|----------|----------|
|  | CRU | kg | 0 | 0 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 |
|  | MFR | kg | 0 | 0 | 0,00E+00 | 3,97E+00 | 0,00E+00 | 0,00E+00 |
|  | MER | kg | 0 | 0 | 0,00E+00 | 1,24E+01 | 0,00E+00 | 0,00E+00 |
|  | EEE | MJ | 0 | 0 | 0,00E+00 | 8,86E-01 | 0,00E+00 | 0,00E+00 |
|  | EET | MJ | 0 | 0 | 0,00E+00 | 1,34E+01 | 0,00E+00 | 0,00E+00 |

CRU = Components for re-use; MFR = Materials for recycling; MER = Materials for energy recovery; EEE = Exported energy electrical; EET = Exported energy thermal

*Reading example: 9,0 E-03 = $9,0 \cdot 10^{-3} = 0,009$

*INA Indicator Not Assessed

| Biogenic Carbon Content | | |
|---|------|---------------------|
| Indicator | Unit | At the factory gate |
| Biogenic carbon content in product | kg C | 0,00E+00 |
| Biogenic carbon content in accompanying packaging | kg C | 2,77E-01 |

Note: 1 kg biogenic carbon is equivalent to 44/12 kg CO₂

Additional requirements

Greenhouse gas emissions from the use of electricity in the manufacturing phase

National production mix from import, low voltage (production of transmission lines, in addition to direct emissions and losses in grid) of applied electricity for the manufacturing process (A3).

| Electricity mix | Data source | Amount | Unit |
|---------------------------|---------------|--------|---------------------------|
| Electricity, Norway (kWh) | ecoinvent 3.6 | 24,33 | g CO ₂ -eq/kWh |

Dangerous substances

The product contains no substances given by the REACH Candidate list.

Indoor environment

The product will not affect the indoor climate

Additional Environmental Information

Key Environmental Indicators

| Key environmental indicators | Unit | A1-A3 | A4 | A1-C4 | A1-D |
|------------------------------|------------------------|--------|------|--------|--------|
| GWPtotal | kg CO ₂ -eq | 49,90 | 0,65 | 53,78 | 49,46 |
| Total energy consumption | MJ | 692,96 | 9,94 | 708,78 | 667,10 |
| Amount of recycled materials | % | 1,72 | | | |

Additional environmental impact indicators required in NPCR Part A for construction products

| Indicator | Unit | A1-A3 | A4 | A5 | B2 | B3 |
|-----------|------------------------|----------|----------|----------|----|----|
| GWPIOBC | kg CO ₂ -eq | 5,09E+01 | 6,47E-01 | 1,01E-02 | 0 | 0 |

| Indicator | Unit | B4 | C1 | C2 | C3 | C4 | D |
|-----------|------------------------|----|----|----------|----------|----------|-----------|
| GWPIOBC | kg CO ₂ -eq | 0 | 0 | 1,83E-01 | 1,48E+00 | 8,46E-02 | -6,42E+00 |

GWP-IOBC: Global warming potential calculated according to the principle of instantaneous oxidation. In order to increase the transparency of biogenic carbon contribution to climate impact, the indicator GWP-IOBC is required as it declares climate impacts calculated according to the principle of instantaneous oxidation. GWP-IOBC is also referred to as GWP-GHG in context to Swedish public procurement legislation.






Variants and Options

Key environmental indicators (A1-A3) for variants of this EPD

| Variants | Weight (kg) | GWPtotal (kg CO ₂ -eq) | Total energy consumption (MJ) | Amount of recycled materials (%) |
|--------------|-------------|-----------------------------------|-------------------------------|----------------------------------|
| Femunden 35L | 7,20 | 26,61 | 398,77 | 3,19 |
| Femunden 50L | 9,80 | 36,87 | 528,41 | 2,34 |
| Femunden 90L | 17,20 | 66,07 | 897,39 | 1,33 |

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