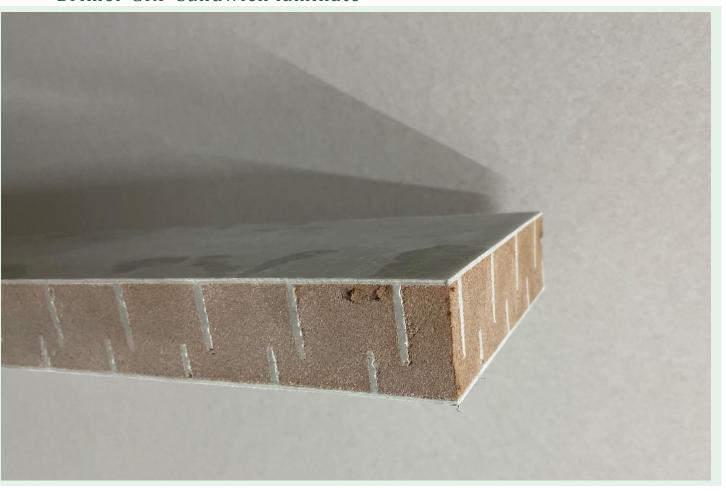


# **Environmental Product Declaration**

In accordance with 14025 and EN15804 +A2

Brimer GRP Sandwich laminate





BRIMER

The Norwegian **EPD Foundation**  Owner of the declaration:

**ENTEC Brimer** 

Product name:

Brimer GRP Sandwich laminate

Declared unit:

1 kg of GRP Sandwich laminate, modules A1-A3, C1-C4 and D

Product category /PCR:

NPCR Part A:2021 Construction products and services Ver 2

Program holder and publisher:

The Norwegian EPD foundation

**Declaration number:** 

NEPD-5572-4763-EN

**Registration Number:** 

NEPD-5572-4763-EN

Issue date:

09.01.2024

Valid to:

09.01.2029

#### -BRIMER

## General information

#### **Product:**

Brimer GRP Sandwich laminate

#### **Program Operator:**

The Norwegian EPD Foundation

Post Box 5250 Majorstuen, 0303 Oslo, Norway

Tlf: +47 23 08 80 00 e-mail: post@epd-norge.no

#### Declaration number:

NEPD-5572-4763-EN

# This declaration is based on Product Category Rules:

EN 15804+A2:2019 and NPCR Part A:2021 Construction products and services Ver 2.

#### Statements:

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

#### Declared unit with options:

1 kg of GRP Sandwich laminate, modules A1-A3, A4, C1-C4 and D.

#### **Functional unit:**

N/A

#### Verification:

Independent verification of the declaration and data, according to ISO14025:2010

internal ☐ external ■

Michael M. Zenne

Michael Myrvold Jenssen

Independent verifier approved by EPD Norway

#### Owner of the declaration:

**ENTEC Brimer** 

Contact person: Erika Skarbø Phone: +47 900 75 846

e-mail: erika.skarbo@entec.no

#### Manufacturer:

**ENTEC Brimer** 

Havna 7, 6087 Kvamsøy, Norway Phone: +47 700 15 500 e-mail: brimer@entec.no

## Place of production:

Saldus, Latvia and Kvamsøy, Norway

### Management system:

ISO 14001, ISO 9001

#### Organisation no:

914346401

#### Issue date:

09.01.2024

#### Valid to:

09.01.2029

#### Year of study:

2023

#### Comparability:

EPD of construction products may not be comparable if they do not comply with EN 15804+A2:2019.

#### The EPD has been worked out by:

Inger Adele Helseth and Kristine Bjordal, energyand environmental consultants at Asplan Viak AS

**Approved** 

Manager of EPD Norway



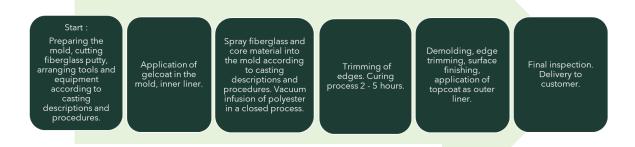
## **Product**

### Product description:

Sandwich laminate in glassfiber reinforced plastics (GRP) are composite materials designed specifically for the production of infrastructure components such as water basins, aquaculture tanks and industrial tanks. These laminates consist mainly of a combination of polymer resins, glassfibers and core, ensuring both strength and durability, tailored to withstand varying pressure and environmental conditions. The physical dimensions of laminates, including size and thickness, may vary based on the intended application. This variation often results in a modification of the composite layers to maintain the desired mechanical and physical properties. Typically, the laminates are supplied in sections, which are assembled on site, these are adapted to the diameter and height of specific project requirements.

Brimer has been manufacturing these products since 1974, with tests showing little or no deterioration during this period. The life span is at least 50 years.

The manufacturing process consists of serveral steps, described in the figure below.



### Product specification:

The EPD covers the production at two production plants, Saldus in Latvia, and Kvamsøy in Norway. The product composition is the same for both production sites. There is no variance in the products depending on application, as all raw materials are relative to the amount of glass fibre. Products from Saldus are packed before delivery to consumer, while products from Kvamsøy is delivered without packaging.

Materials	kg	%
Glass fiber	0,400	40,0 %
Polyester	0,455	45,5 %
Coat	0,050	5,0 %
Hardener	0,0150	1,5 %
Core	0,080	8,0 %



Total weight	1,000	100 %
Pallets	0,049	
Cardboard	0,001	
Plastic	0,001	
Total weight incl. packaging	1,051	

Technical data:

N/A

Market:

Norway.

Reference service life, product:

N/A

Reference service life, building:

N/A

## LCA: Calculation rules

#### Declared unit:

1 kg of GRP Sandwich laminate, modules A1-A3, A4, C1-C4 and D.

#### Data quality:

Data has been collected in 2023 and is representative for 2022. Data for the raw material and production and transport (A1-A3 and A4) is based on specific consumption data and technical data sheets from the suppliers for the factory in Saldus, Latvia and Kvamsøy, Norway. The yearly averages for 2022 are referred to. End-of-life scenarios have been established based on an estimate of the dismantling of a GRP silo and transportation to municipal landfill, as few products have reached their end of life. Generic data is from Ecoinvent 3.8 (October 2023) SimaPro v 9.4.0.2. All background data < 10 years. Characterization factors from EN 15804+ A2: 2019.

#### Allocation:

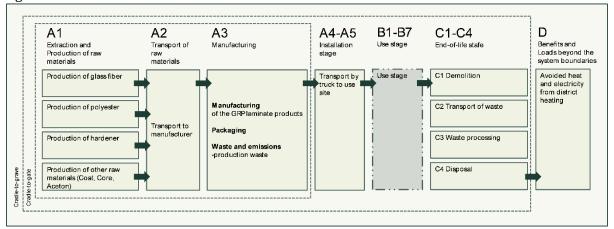
The allocation is made in accordance with the provisions of EN 15804+ A2: 2019. Incoming energy and water and waste production in-house is allocated equally among all products through mass allocation. Effects of primary production of recycled materials allocated to the main product in which the material was used.

The analysis covers the production processes at two manufacturing sites: Saldus in Latvia and Kvamsøy in Norway. To calculate the overall product impact, we have employed weighted averages based on production volume.

#### System boundary:



The system boundary is from cradle-to-gate with modules C1-C4 and module D as provided in EN 15804+A2:2019. The flow chart for production, transport and end of life is shown in the figure below.



#### Cut-off criteria:

All major raw materials and all the essential energy is included, as well as capital equipment. The production process for raw materials and energy flows that are included with very small amounts (<1%) are not included. This cut-off rule does not apply for hazardous materials and substances.

## LCA: Scenarios and additional technical information

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

Scenarios have been developed to account for downstream processes such as demolition and waste treatment in accordance with the requirements of EN15804+ A2: 2019 and NPCR PART A. The scenarios are currently in use and are representative for one of the most likely scenario alternatives.

Transport from production place to assembly/user (A4)

Туре	Capacity utilisation (incl. return) %	Type of vehicle	Distance KM	Fuel/Energy consumption	value (l/t)
Truck (from Saldus to market)	50 %	Truck (18 t, capacity of 30 t)	1300	0,020 l/tkm	26
Lorry (from Kvamsøy to market)	75 %	Lorry (18 t, capacity of 30 t)	300	0,015 l/tkm	4,5
Containership (from Kvamsøy to market)	12,18 %	Cargo containership (capacity of 480 t)	300	0,003 l/tkm	0,9

The scenario for transportation to use site is provided by Entec Brimer.

### End of Life (C1, C3, C4)

	Unit	Value
Hazardous waste disposed	Kg	-



Collected as mixed construction waste	Kg	-
Reuse	Kg	-
Recycling	Kg	-
Energy recovery	Kg	1,0
To landfill	Kg	0,4

The end-of-life scenario for GRP laminates is not well-documented today, as these products have a long lifespan, and only a few have reached their end-of-life stage. C1 is based on an estimate of dismantling a GRP silo. The end-of-life treatment scenario follows a conservative approach with municipal incineration and energy recovery (C3). Ashes and solids after incineration are then landfilled (C4). The energy recovered from C3 is assumed to substitute electricity and district heating (D).

Transport to waste processing (C2)

Туре	Capacity utilisation (incl. return) %	Type of vehicle	Distance KM	Fuel/Energy consumption	value (l/t)
Truck	50 %	Lorry 28 metric ton, EURO6	100	0,0436	4,4

It is assumed that the waste is transported the local municipal incineration.

Benefits and loads beyond the system boundaries (D)

	Unit	Value
Substitution of delivered electricity	0,62	MJ
Substitution of delivered district heating	17,86	MJ

Exported energy replaces the Norwegian district heating mix and electricity mix. All conversion factors for efficiencies and losses from waste to delivered energy are included.

#### Additional technical information

Not relevant.

## LCA: Results

The LCA results are presented below for the declared unit defined on page 2 of the EPD document. Impact assessment results are presented with core and additional impact indicators presented in EN15804+A2:2019. Reading example: 9,0 E-03 = 9,0\*10-3 = 0,009.

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

Product stage	Assembly stage	Use stage	End of life stage	Benefits & loads beyond system boundary
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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	А3	A4	A5	B1	B2	В3	B4	B5	В6	В7	C1	C2	С3	C4	D
X	X	X	X	MND	MND	MND	MND	MND	MND	MND	MND	X	X	X	X	X

Core environmental impact indicators

Indicator	Unit	A1	A2	А3	A1-A3	A4
GWP-total	kg CO2 eq.	4,9E+00	4,3E-01	1,3E-01	5,5E+00	7,1E-02
GWP-fossil	kg CO2 eq.	4,8E+00	4,2E-01	2,5E-01	5,5E+00	7,0E-02
GWP-biogenic	kg CO2 eq.	8,6E-02	5,5E-03	-1,2E-01	-2,5E-02	1,0E-04
GWP-LULUC	kg CO2 eq.	3,3E-03	1,2E-04	3,7E-04	3,8E-03	2,0E-05
ODP	kg CFC11 eq.	7,9E-07	3,7E-09	7,8E-09	8,0E-07	1,5E-09
AP	mol H <sup>+</sup> eq.	2,4E-02	3,8E-03	1,0E-03	2,9E-02	1,7E-04
EP-freshwater	kg P eq.	1,4E-04	1,7E-05	7,4E-06	1,7E-04	3,7E-07
EP-marine	kg N eq.	4,3E-03	9,5E-04	2,6E-04	5,5E-03	4,4E-05
EP-terrestial	mol N eq.	4,7E-02	9,4E-03	3,0E-03	5,9E-02	4,6E-04
POCP	kg NMVOC eq.	1,9E-02	2,9E-03	1,8E-03	2,3E-02	2,5E-04
ADP-M&M	kg Sb eq.	1,7E-04	5,1E-07	4,8E-06	1,8E-04	1,3E-07
ADP-fossil	MJ	8,8E+01	6,7E+00	4,1E+00	9,8E+01	9,9E-01
WDP	$m^3$	2,8E+00	5,0E+00	8,8E-02	7,9E+00	2,9E-03

GWP-total: Global Warming Potential; 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; See "additional Norwegian requirements" for indicator given as PO4 eq. EP-marine: Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-terrestial: Eutrophication potential, Accumulated Exceedance; POCP: Formation potential of tropospheric ozone; ADP-M&M: Abiotic depletion potential for non-fossil resources (minerals and metals); ADP-fossil: Abiotic depletion potential for fossil resources; WDP: Water deprivation potential, deprivation weighted water counsumption

Indicator	Unit	C1	C2	С3	C4	D
GWP-total	kg CO2 eq.	8,4E-01	1,9E-02	1,8E+00	1,7E-02	-1,6E-01
GWP-fossil	kg CO2 eq.	8,3E-01	1,9E-02	1,8E+00	1,7E-02	-1,1E-01
GWP-biogenic	kg CO2 eq.	5,7E-04	4,9E-05	1,2E-03	8,9E-05	-5,8E-02



GWP-LULUC	kg CO2 eq.	1,3E-04	9,2E-06	1,1E-05	3,5E-06	-4,3E-04
ODP	kg CFC11 eq.	3,8E-09	4,0E-10	2,8E-09	3,6E-10	-2,8E-09
AP	mol H⁺ eq.	3,3E-03	4,0E-05	2,5E-04	5,5E-05	-1,0E-03
EP-freshwater	kg P eq.	4,8E-06	1,5E-07	4,2E-07	6,2E-07	-5,6E-06
EP-marine	kg N eq.	1,5E-03	9,9E-06	1,1E-04	2,0E-05	-3,3E-04
EP-terrestial	mol N eq.	1,7E-02	1,0E-04	1,2E-03	1,9E-04	-3,8E-03
POCP	kg NMVOC eq.	4,8E-03	6,3E-05	3,1E-04	8,0E-05	-1,0E-03
ADP-M&M	kg Sb eq.	1,5E-06	6,0E-08	6,9E-08	2,2E-08	-3,1E-06
ADP-fossil	MJ	2,6E+00	2,6E-01	1,9E-01	2,5E-01	-1,6E+00
WDP	m³	1,4E-02	1,1E-03	6,7E-03	7,9E-04	-3,2E-02

GWP-total: Global Warming Potential; 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; See "additional Norwegian requirements" for indicator given as PO4 eq. EP-marine: Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-terrestial: Eutrophication potential, Accumulated Exceedance; POCP: Formation potential of tropospheric ozone; ADP-M&M: Abiotic depletion potential for non-fossil resources (minerals and metals); ADP-fossil: Abiotic depletion potential for fossil resources; WDP: Water deprivation potential, deprivation weighted water counsumption

#### Additional environmental impact indicators

Indicator	Unit	A1	A2	A3	A1-A3	A4
PM	Disease incidence	2,2E-07	3,2E-08	1,5E-08	2,7E-07	2,7E-09
IRP	kBq U235 eq.	1,4E-01	2,0E-03	8,7E-03	1,5E-01	3,6E-04
ETP-fw	CTUe	9,2E+01	1,5E+01	1,3E+00	1,1E+02	4,8E-01
НТР-с	CTUh	3,8E-09	1,5E-10	1,9E-09	5,8E-09	2,1E-11
HTP-nc	CTUh	2,0E-07	7,1E-09	4,8E-09	2,1E-07	6,2E-10
SQP	Dimensionless	3,2E-03	4,4E-04	1,4E-04	3,8E-03	1,8E-05

**PM:** Particulate matter emissions; **IRP:** Ionising radiation, human health; **ETP-fw:** Ecotoxicity (freshwater); **ETP-c:** Human toxicity, cancer effects; **HTP-nc:** Human toxicity, non-cancer effects; **SQP:** Land use related impacts / soil quality

#### Additional environmental impact indicators

Indicator	Unit	C1	C2	C3	C4	D
PM	Disease incidence	8,1E-09	1,1E-09	1,8E-09	8,5E-10	-6,2E-08
IRP	kBq U235 eq.	2,6E-03	1,3E-04	3,1E-04	1,2E-04	-1,3E-02
ETP-fw	CTUe	1,4E+00	1,4E-01	9,2E-02	9,1E-01	-8,3E-01



НТР-с	CTUh	4,1E-10	8,4E-12	2,4E-11	4,7E-11	-1,5E-10
HTP-nc	CTUh	6,5E-09	2,4E-10	5,4E-10	1,4E-09	-7,4E-09
SQP	Dimensionless	5,4E-04	4,4E-06	4,3E-05	1,7E-05	-1,8E-04

**PM:** Particulate matter emissions; **IRP:** Ionising radiation, human health; **ETP-fw:** Ecotoxicity (freshwater); **ETP-c:** Human toxicity, cancer effects; **HTP-nc:** Human toxicity, non-cancer effects; **SQP:** Land use related impacts / soil quality

# Classification of disclaimers to the declaration of core and additional environmental impact indicators

ILCD classification	Indicator	Disclaimer		
	Global warming potential (GWP)	None		
ILCD type / level 1	Depletion potential of the stratospheric ozone layer (ODP)	None		
	Potential incidence of disease due to PM emissions (PM)	None		
	Acidification potential, Accumulated Exceedance (AP)	None		
	Eutrophication potential, Fraction of nutrients reaching marine end compartment (EP-marine)	None		
ILCD type / level 2	Eutrophication potential, Accumulated Exceedance (EP-terrestrial)			
	Formation potential of tropospheric ozone (POCP)	None		
	Potential Human exposure efficiency relative to U235 (IRP)	1		
	Abiotic depletion potential for non-fossil resources (ADP-minerals&metals)	2		
	Abiotic depletion potential for fossil resources (ADP-fossil)	2		
	Water (user) deprivation potential, deprivation-weighted water consumption (WDP)	2		
ILCD type / level 3	Potential Comparative Toxic Unit for ecosystems (ETP-fw)	2		
	Potential Comparative Toxic Unit for humans (HTP-c)	2		
	Potential Comparative Toxic Unit for humans (HTP-nc)	2		
	Potential Soil quality index (SQP)	2		

**Disclaimer 1** – 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. **Disclaimer 2** – 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

#### Resource use

Parameter	Unit	A1	A2	А3	A1-A3	A4
RPEE	MJ	4,5E+00	2,2E-01	3,6E+00	8,4E+00	1,0E-02
RPEM	MJ	4,3E-03	0,0E+00	2,4E-01	2,4E-01	0,0E+00
TPE	MJ	4,5E+00	2,2E-01	3,8E+00	8,6E+00	1,0E-02
NRPE	MJ	5,6E+01	6,7E+00	4,0E+00	6,7E+01	9,9E-01



NRPM	MJ	3,1E+01	0,0E+00	6,2E-04	3,1E+01	0,0E+00
TRPE	MJ	8,8E+01	6,7E+00	4,0E+00	9,8E+01	9,9E-01
SM	kg	0,0E+00	0,0E+00	0,0E+00	0,0E+00	0,0E+00
RSF	MJ	0,0E+00	0,0E+00	0,0E+00	0,0E+00	0,0E+00
NRSF	MJ	0,0E+00	0,0E+00	0,0E+00	0,0E+00	0,0E+00
W	$m^3$	7,2E-02	1,2E-01	7,1E-03	2,0E-01	1,0E-04

RPEE Renewable primary energy resources used as energy carrier; RPEM Renewable primary energy resources used as raw materials; TPE Total use of renewable primary energy resources; NRPE Non renewable primary energy resources used as energy carrier; NRPM Non renewable primary energy resources used as materials; TRPE 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; W Use of net fresh water

#### Resource use

Parameter	Unit	C1	C2	C3	C4	D
RPEE	MJ	1,0E-01	4,1E-03	1,1E-02	4,1E-03	-9,2E+00
RPEM	MJ	0,0E+00	0,0E+00	0,0E+00	0,0E+00	0,0E+00
TPE	MJ	1,0E-01	4,1E-03	1,1E-02	4,1E-03	-9,2E+00
NRPE	MJ	2,6E+00	2,6E-01	1,9E-01	2,5E-01	-1,6E+00
NRPM	MJ	0,0E+00	0,0E+00	0,0E+00	0,0E+00	0,0E+00
TRPE	MJ	2,6E+00	2,6E-01	1,9E-01	2,5E-01	-1,6E+00
SM	kg	0,0E+00	0,0E+00	0,0E+00	0,0E+00	0,0E+00
RSF	MJ	0,0E+00	0,0E+00	0,0E+00	0,0E+00	0,0E+00
NRSF	MJ	0,0E+00	0,0E+00	0,0E+00	0,0E+00	0,0E+00
W	$m^3$	5,1E-04	3,5E-05	4,2E-04	7,9E-06	-2,7E-02

RPEE Renewable primary energy resources used as energy carrier; RPEM Renewable primary energy resources used as raw materials; TPE Total use of renewable primary energy resources; NRPE Non renewable primary energy resources used as energy carrier; NRPM Non renewable primary energy resources used as materials; TRPE 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; W Use of net fresh water

#### End of life - Waste

Parameter	Unit	A1	A2	А3	A1-A3	A4
HW	KG	1,6E-03	5,4E-04	1,9E-02	2,4E-02	1,8E-05
NHW	KG	3,9E-01	1,2E-01	8,2E-02	5,9E-01	3,8E-02
RW	KG	1,1E-04	9,6E-07	5,7E-06	1,1E-04	2,3E-07

HW Hazardous waste disposed; NHW Non hazardous waste disposed; RW Radioactive waste disposed

#### End of life - Waste

Parameter	Unit	C1	C2	C3	C4	D
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HW	KG	1,6E-04	6,6E-06	1,9E-04	4,8E-01	-7,2E-04
NHW	KG	4,9E-02	1,3E-02	3,8E-03	1,8E-02	-3,8E-02
RW	KG	1,6E-06	8,6E-08	2,1E-07	7,5E-08	-6,3E-06

HW Hazardous waste disposed; NHW Non hazardous waste disposed; RW Radioactive waste disposed

End of life – output flow

Parameter	Unit	A1	A2	A3	A1-A3	A4
CR	kg	0,0E+00	0,0E+00	0,0E+00	0,0E+00	0,0E+00
MR	kg	0,0E+00	0,0E+00	1,7E-02	1,7E-02	0,0E+00
MER	kg	0,0E+00	0,0E+00	9,2E-02	9,2E-02	0,0E+00
EEE	MJ	0,0E+00	0,0E+00	0,0E+00	0,0E+00	0,0E+00
ЕТЕ	MJ	0,0E+00	0,0E+00	0,0E+00	0,0E+00	0,0E+00

CR Components for reuse; MR Materials for recycling; MER Materials for energy recovery; EEE Exported electric energy; ETE Exported thermal energy

End of life – output flow

	o drop dro 110 tt					
Parameter	Unit	C1	C2	С3	C4	D
CR	kg	0,0E+00	0,0E+00	0,0E+00	0,0E+00	0,0E+00
MR	kg	0,0E+00	0,0E+00	0,0E+00	0,0E+00	0,0E+00
MER	kg	0,0E+00	0,0E+00	1,0E+00	0,0E+00	0,0E+00
EEE	MJ	0,0E+00	0,0E+00	6,2E-01	0,0E+00	0,0E+00
ETE	MJ	0,0E+00	0,0E+00	1,8E+01	0,0E+00	0,0E+00

CR Components for reuse; MR Materials for recycling; MER Materials for energy recovery; EEE Exported electric energy; ETE Exported thermal energy

Information describing the biogenic carbon content at the factory gate

	7 0	
Biogenic carbon content	Unit	Value
Biogenic carbon content in product	kg C	0
Biogenic carbon content in the accompanying packaging	kg C	0

## Additional Norwegian requirements

Greenhous gas emission from the use of electricity in the manufacturing phase National production mix from import, medium voltage (production of transmission lines, in addition to direct emissions and losses in grid) of applied electricity for the manufacturing prosess (A3).

National electricity grid	Unit	Value	
Latvian mix, medium voltage, at grid	kg CO2 -eq/kWh	6,0E-01	
Norwegian mix, medium voltage, at grid	kg CO2 -eq/kWh	3,2E-02	



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

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 instantanious oxidation. GWP-IOBC is also reffered to as GWP-GHG in context to Swedish public procurement legislation. This is however not relevant to calculate in this EPD as there are no biogenic carbon used in the forground system.

Indicator	Unit	A1	A2	А3	A1-A3	A4
GWP-IOBC	kg CO2 eq.	4,9E+00	4,3E-01	1,3E-01	5,5E+00	7,1E-02
Indicator	Unit	C1	C2	C3	C4	D
GWP-IOBC	kg CO2 eq.	8,4E-01	1,9E-02	1,8E+00	1,7E-02	-1,6E-01

**GWP-IOBC** Global warming potential calculated according to the principle of instantanious oxidation.

#### Hazardous substances

The declaration is based upon reference to threshold values and/or test results and/or material safety data sheets provided to EPD verifiers. Documentation available upon request to EPD owner.

- ✓ The product contains no substances given by the REACH Candidate list or the Norwegian priority list.
- ☐ The product contains substances given by the REACH Candidate list or the Norwegian priority list that are less than 0,1 % by weight.
- ☐ The product contain dangerous substances, more then 0,1% by weight, given by the REACH Candidate List or the Norwegian Priority list, see table.
- ☐ The product contains no substances given by the REACH Candidate list or the Norwegian priority list. The product is classified as hazardous waste (Avfallsforskiften, Annex III), see table.

Name	CAS no.	Amount

#### Indoor environment

Not relevant. No tests have been carried out on the product concerning indoor climate.

#### Carbon footprint

Carbon footprint has not been worked out for the product.



## **Bibliography**

ISO 14025:2010 Environmental labels and declarations - Type III environmental

declarations - Principles and procedures

ISO 14044:2006 Environmental management - Life cycle assessment -

Requirements and guidelines

EN 15804:2012+A2:2019 Sustainability of construction works - Environmental product

declaration - Core rules for the product category of construction

products

NPCR PART A Ver 2 Construction Products and Services

ISO 21930:2007 Sustainability in building construction - Environmental

declaration of building products

SimaPro LCA software, developed by PRé Sustainability

Helseth, Inger, 2023

Brimer

Life cycle assessment (LCA) report for GRP laminates by Entec

© epd-norway	Program Operator	tlf	+47 23 08 80 00
	The Norwegian EPD Foundation		
	Post Box 5250 Majorstuen, 0303 Oslo	e-post:	post@epd-norge.no
	Norway	web	www.epd-norge.no
© epd-norway	Publisher	tlf	+47 23 08 80 00
	The Norwegian EPD Foundation		
	Post Box 5250 Majorstuen, 0303 Oslo	e-post:	post@epd-norge.no
	Norway	web	www.epd-norge.no
···ENTEC BRIMER	Owner of the declaration	tlf	+47 700 15 500
	Entec Brimer AS	Fax	
	Havna 7, 6087 Kvamsøy, Norway	e-post:	brimer@entec.no
		web	https://entec.no/
asplan viak	Author of the life cycle assessment	tlf	+47 41 79 94 17
	Inger Adele Helseth and Kristine Bjordal	Fax	
	Asplan Viak AS	e-post:	asplanviak@asplanviak.no
	Abels gate 9, 7030 Trondheim, Norway	web	www.asplanviak.no
EGO PLATFORM VERIFIED	ECO Platform ECO Portal	web web	www.eco-platform.org ECO Portal