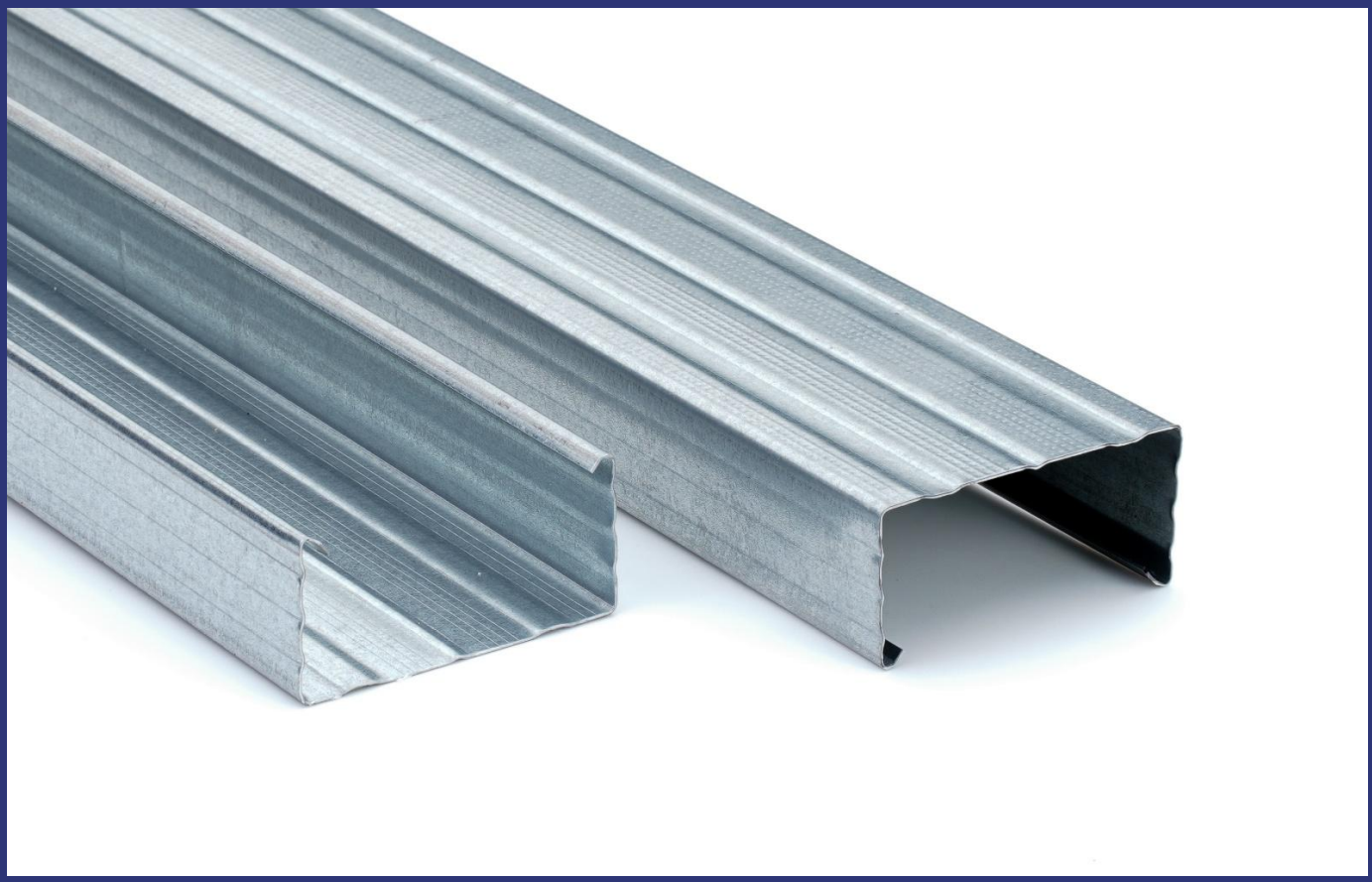
Environmental
Product
Declaration

According to EN15804+A2

This declaration is for:
Green steel profiles for the construction of walls

Provided by:
BPUA B.V.



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COMPANY INFORMATION

BPUA B.V.

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Nieuwkuijk

Netherlands

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PRODUCT

Green steel profiles for the construction of walls

DECLARED UNIT / FUNCTIONAL UNIT

1 Mass (kg)

DESCRIPTION OF PRODUCT

Green steel profiles for the construction of walls

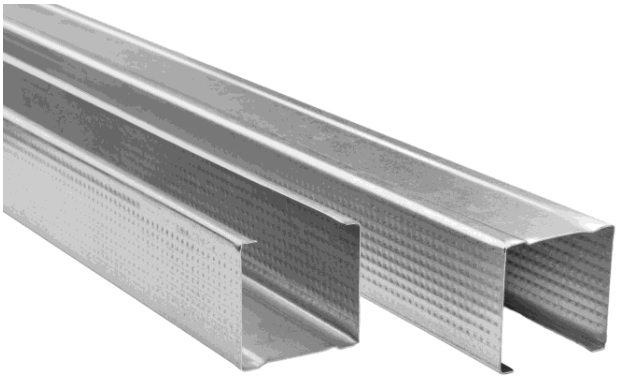
MRPI® REGISTRATION

1.1.00855.2025

DATE OF THIS ISSUE

16-5-2025

VISUAL PRODUCT



EXPIRY DATE

16-5-2030

SCOPE OF DECLARATION

This MRPI®-EPD certificate is verified by Gert-Jan Vroege, Eco intelligence. The LCA study has been done by Steven Simons, SGS Intron. The certificate is based on an LCA-dossier according to EN15804+A2. It is verified according to the 'MRPI®-EPD verification protocol November 2020.v4.0'. EPDs of construction products may not be comparable if they do not comply with EN15804+A2. Declaration of SVHC that are listed on the 'Candidate list of Substances of Very High Concern for authorisation' when content exceeds the limits for registration with ECHA.

PROGRAM OPERATOR

Stichting MRPI®

Kingsfordweg 151

1043 GR

Amsterdam

MORE INFORMATION

https://bpua.nl/metal-stud/

Ing. L. L. Oosterveen MSc. MBA **Managing Director MRPI**	DEMONSTRATION OF VERIFICATION CEN standard EN15804 serves as the core PCR [1]
	Independent verification of the declaration an data according to EN15804+A2 Internal: External: X
	Third party verifier: Gert-Jan Vroege, Eco intelligence
	[1] PCR = Product Category Rules

DETAILED PRODUCT DESCRIPTION (PART 1)

The production process of steel wall profiles starts with the supply of cut-to-size steel. These steel coils are delivered to size in the correct width to produce the profiles. The steel is then passed through a series of rollers that bend the steel into the desired shape, such as a U, C or L profile. After shaping, additional operations can be carried out to strengthen the profiles, for example by applying ridges or other structures. The formed profiles are then cut to the desired length. Finally, the steel wall profiles are inspected during a quality check to ensure that they meet the required specifications and standards (About 0.047% profiles are rejected, this is not included since it falls under the 1% cut-off rule). This process ensures that the steel wall profiles are strong, durable and suitable for various construction applications.

Global warming potential of 1 kWh energy	Process	kg CO2eq
Dutch grid mix	Electricity, low voltage {NL}| market for electricity, low voltage | Cut-off, U	0,496

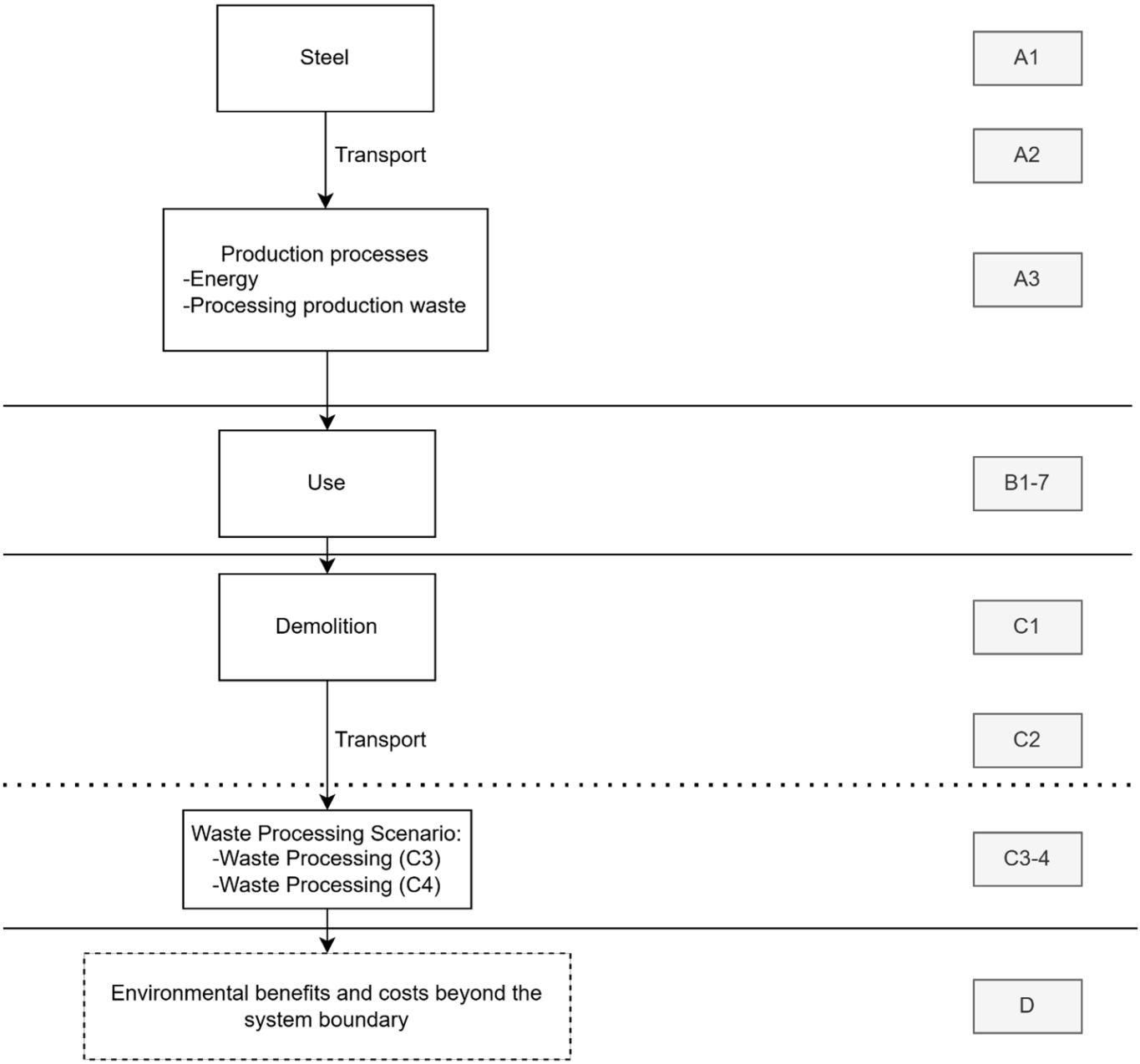
SCOPE AND TYPE

The LCA for green steel profiles for the construction of walls includes A1-A3 and C&D. All major steps from the extraction of raw materials, transport to production location, production and the end-of-life of the product are included in the scope of the study. This EPD is for green steel profiles for the construction of walls. The steel profiles are produced by BPUA B.V.. The main production locations are Nieuwkuijk and Tilburg (The Netherlands). The end-of-life scenario for the steel profiles is according to the standard NMD waste processing (1% landfill, 5% reuse and 94% recycling). The LCA is produced with SimaPro v10 software and background database is Ecoinvent 3.9.

PRODUCT STAGE			CONSTRUCTION PROCESS STAGE		USE STAGE							END OF LIFE STAGE				BENEFITS AND LOADS BEYOND THE SYSTEM BOUNDARIES
Raw material supply	Transport	Manufacturing	Transport gate to 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	ND	ND	ND	ND	ND	ND	ND	ND	ND	X	X	X	X	X

X = Modules Assessed

ND = Not Declared



REPRESENTATIVENESS

This EPD is representative for 1 kg of green steel profile and can be used to calculate the environmental impact of every green steel profile of BPUA and Steelframe. The products are produced at two production sites Nieuwkuijk and Tilburg.

ENVIRONMENTAL IMPACT per functional unit or declared unit (core indicators A2)

	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-total	kg CO2 eq.	8,38E-01	5,05E-03	2,02E-03	8,46E-01	ND	ND	ND	ND	ND	ND	ND	ND	ND	0,00E+00	7,53E-03	2,52E-02	1,11E-04	5,46E-03
GWP-fossil	kg CO2 eq.	8,32E-01	5,04E-03	2,00E-03	8,39E-01	ND	ND	ND	ND	ND	ND	ND	ND	ND	0,00E+00	7,50E-03	2,57E-02	1,06E-04	5,40E-03
GWP-biogenic	kg CO2 eq.	5,40E-03	4,29E-06	1,89E-05	5,43E-03	ND	ND	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,17E-05	-4,46E-04	4,45E-06	6,78E-05
GWP-luluc	kg CO2 eq.	8,05E-04	2,51E-06	8,81E-07	8,08E-04	ND	ND	ND	ND	ND	ND	ND	ND	ND	0,00E+00	2,67E-05	3,76E-05	2,57E-08	-9,29E-06
ODP	kg CFC11 eq.	5,97E-08	1,12E-10	6,08E-11	5,99E-08	ND	ND	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,33E-10	4,08E-10	3,10E-12	3,38E-10
AP	mol H+ eq.	1,55E-02	1,15E-05	5,63E-06	1,56E-02	ND	ND	ND	ND	ND	ND	ND	ND	ND	0,00E+00	3,59E-05	2,87E-04	6,93E-07	-5,60E-05
EP-fresh water	kg PO4 eq.	2,97E-05	4,23E-08	8,32E-08	2,98E-05	ND	ND	ND	ND	ND	ND	ND	ND	ND	0,00E+00	7,46E-08	1,17E-06	8,96E-10	-1,06E-06
EP-marine	kg N eq.	1,13E-03	2,91E-06	1,21E-06	1,14E-03	ND	ND	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,36E-05	6,55E-05	2,91E-07	-1,28E-05
EP-terrestrial	mol N eq.	6,19E-02	3,05E-05	1,42E-05	6,20E-02	ND	ND	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,45E-04	7,48E-04	3,15E-06	-1,51E-04
POCP	kg NMVOC eq.	3,14E-03	1,82E-05	4,32E-06	3,16E-03	ND	ND	ND	ND	ND	ND	ND	ND	ND	0,00E+00	4,97E-05	2,24E-04	1,17E-06	-2,94E-05
ADP-minerals & metals	kg Sb eq.	3,94E-05	1,61E-08	2,40E-08	3,94E-05	ND	ND	ND	ND	ND	ND	ND	ND	ND	0,00E+00	2,35E-08	1,58E-06	2,59E-10	-1,83E-05
ADP-fossil	MJ, net calorific value	1,25E+01	7,35E-02	2,88E-02	1,26E+01	ND	ND	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,07E-01	3,48E-01	2,43E-03	1,15E-01
WDP	m3 world eq. Deprived	4,83E-01	3,22E-04	2,78E-04	4,83E-01	ND	ND	ND	ND	ND	ND	ND	ND	ND	0,00E+00	5,86E-04	4,22E-03	1,11E-05	-3,46E-03

GWP-total = Global Warming Potential total

GWP-fossil = Global Warming Potential fossil fuels

GWP-biogenic = Global Warming Potential biogenictotal

GWP-luluc = Global Warming Potential land use and land use change

ODP = Depletion potential of the stratospheric ozone layer

AP = Acidification Potential, Accumulated Exceedence

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 Exceedence

POCP = Formation potential of tropospheric ozone photochemical oxidants

ADP-minerals & metals = Abiotic Depletion Potential for non-fossil resources [1]

ADP-fossil = Abiotic Depletion for fossil resources potential [1]

WDP = Water (user) deprivation potential, deprivation-weighted water consumption [1]

Disclaimer [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 experience with the indicator.

ENVIRONMENTAL IMPACT per functional unit or declared unit (additional indicators A2)

	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
PM	Disease inci-dence	1,82E-07	4,07E-10	3,85E-11	1,83E-07	ND	ND	ND	ND	ND	ND	ND	ND	ND	0,00E+00	7,40E-10	3,94E-09	1,69E-11	-3,47E-10
IRP	kBq U235 eq.	4,48E-02	3,87E-05	6,61E-05	4,49E-02	ND	ND	ND	ND	ND	ND	ND	ND	ND	0,00E+00	4,19E-05	9,25E-04	3,49E-06	2,96E-04
ETP-fw	CTUe	1,79E+01	3,63E-02	5,72E-03	1,80E+01	ND	ND	ND	ND	ND	ND	ND	ND	ND	0,00E+00	7,92E-02	2,73E-01	8,55E-02	-5,01E+00
HTP-c	CTUh	5,63E-09	2,30E-12	8,00E-13	5,63E-09	ND	ND	ND	ND	ND	ND	ND	ND	ND	0,00E+00	4,00E-12	3,91E-11	1,00E-13	-1,48E-10
HTP-nc	CTUh	2,29E-08	5,19E-11	3,06E-11	2,30E-08	ND	ND	ND	ND	ND	ND	ND	ND	ND	0,00E+00	8,62E-11	1,76E-09	8,30E-12	-2,54E-09
SQP	-	5,32E+00	5,52E-02	8,78E-03	5,39E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0,00E+00	8,47E-02	6,18E-01	5,77E-03	-1,38E-01

PM = Potential incidence of disease due to PM emissions

IRP = Potential Human exposure efficiency relative to U235 [1]

ETP-fw = Potential Comparative Toxic Unit for ecosystems [2]

HTP-c = Potential Comparative Toxic Unit for humans [2]

HTP-nc = Potential Comparative Toxic Unit for humans, non-cancer [2]

SQP = Potential soil quality index [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.

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 experience with the indicator.

OUTPUT FLOWS AND WASTE CATEGORIES per functional unit or declared unit (A1 en A2)

	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
HWD	kg	2,66E-04	4,63E-07	9,75E-08	2,67E-04	ND	ND	ND	ND	ND	ND	ND	ND	ND	0,00E+00	6,85E-07	1,93E-06	1,13E-08	-5,77E-07
NHWD	kg	2,13E-01	4,64E-03	1,62E-04	2,18E-01	ND	ND	ND	ND	ND	ND	ND	ND	ND	0,00E+00	7,10E-03	1,05E-02	1,00E-02	5,70E-04
RWD	kg	4,17E-05	2,52E-08	5,74E-08	4,18E-05	ND	ND	ND	ND	ND	ND	ND	ND	ND	0,00E+00	2,46E-08	7,05E-07	1,91E-09	3,60E-07
CRU	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
MFR	kg	1,66E-01	0,00E+00	0,00E+00	1,66E-01	ND	ND	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	9,90E-01	0,00E+00	0,00E+00
MER	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
EEE	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
ETE	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

HWD = Hazardous Waste Disposed
NHWD = Non Hazardous Waste Disposed
RWD = Radioactive Waste Disposed
CRU = Components for reuse
MFR = Materials for recycling
MER = Materials for energy recovery
EEE = Exported Electrical Energy
ETE = Exported Thermal Energy

RESOURCE USE per functional unit or declared unit (A1 and A2)

	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
PERE	MJ	3,66E+00	1,18E-03	5,08E-03	3,66E+00	INA	INA	INA	INA	INA	INA	INA	INA	INA	0,00E+00	1,52E-03	5,39E-02	1,62E-04	5,46E-03
PERM	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	INA	INA	INA	INA	INA	INA	INA	INA	INA	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PERT	MJ	3,66E+00	1,18E-03	5,08E-03	3,66E+00	INA	INA	INA	INA	INA	INA	INA	INA	INA	0,00E+00	1,52E-03	5,39E-02	1,62E-04	5,46E-03
PENRE	MJ	1,34E+01	7,35E-02	2,88E-02	1,35E+01	INA	INA	INA	INA	INA	INA	INA	INA	INA	0,00E+00	1,08E-01	3,48E-01	2,43E-03	1,15E-01
PENRM	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	INA	INA	INA	INA	INA	INA	INA	INA	INA	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PENRT	MJ	1,34E+01	7,35E-02	2,88E-02	1,35E+01	INA	INA	INA	INA	INA	INA	INA	INA	INA	0,00E+00	1,08E-01	3,48E-01	2,43E-03	1,15E-01
SM	kg	1,21E+00	0,00E+00	0,00E+00	1,21E+00	INA	INA	INA	INA	INA	INA	INA	INA	INA	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	INA	INA	INA	INA	INA	INA	INA	INA	INA	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
NSRF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	INA	INA	INA	INA	INA	INA	INA	INA	INA	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
FW	m3	1,36E-02	1,12E-05	1,48E-05	1,37E-02	INA	INA	INA	INA	INA	INA	INA	INA	INA	0,00E+00	2,59E-05	1,73E-04	3,04E-06	-8,27E-05

PERE = Use of renewable energy excluding renewable primary energy resources
PERM = Use of renewable energy resources used as raw materials
PERT = Total use of renewable primary energy resources
PENRE = Use of non-renewable primary energy resources excluding non-renewable 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
NSRF = Use of non-renewable secondary fuels
FW = Use of net fresh water

BIOGENIC CARBON CONTENT per functional unit or declared unit (A1 and A2)

	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
BBCpr	kg C	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
BCCpa	kg C	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

BCCpr = Biogenic carbon content in product
BCCpa = Biogenic carbon content in packaging

CALCULATION RULES (PART 1)

Process data have been collected by BPUA and Steelframe. Data for the products are from 2023. Data were collected on the representative composition, the origin of raw materials, the transport and process data on the production of the walls.

For basic processes, the SimaPro file of the National Environmental Database version 3.9 and Ecoinvent 3.9 allocation, cut-off by classification – unit were used, long term emissions in Ecoinventprocesses have been excluded from the LCA calculations.

SCENARIOS AND ADDITIONAL TECHNICAL INFORMATION (PART 1)

Transportation from the various manufactures and raw material extraction sites to the factory's in Nieuwkuijk and Tilburg. According to BPUA, they transport there raw materials with EURO 6 trucks, therefore this scenario uses a EURO 6 truck.

SCENARIOS AND ADDITIONAL TECHNICAL INFORMATION (PART 2)

No inputs are required for the product in the demolition phase as this can be done manually. The default scenario in the Assessment Method states that 50 km is the standard transport distance from demolition site to a crushing/sorting facility. An additional 50 km of transport are calculated on materials that are landfilled since they need to be transported from the crushing/sorting facility to a landfill. This transport is calculated over the entire weight of the product. The process used for truck transport is: Transport, freight, lorry, unspecified {GLO}| market for | Cut-off. All material underwent waste processing, the process was modelled using: 0315-reC&Sorteren en persen oud ijzer (o.b.v. Iron scrap, sorted, pressed {RER}| sorting and pressing of iron scrap | Cut-off, U) - NMD3.9. Waste processing percentages were followed according to the Assesment method, which can be found in the table below.

Waste processing scenario's (standard NMD)	Percentage (%)
Landfill	1%
Reuse	5%
Recycling	94%

DECLARATION OF SVHC

No substances that are listed in the latest "Candidate List of Substances of Very High Concern for authorisation" are included in the product that exceeds the limit for registration.

REFERENCES

Stichting Nationale Milieudatabase, Bepalingsmethode Milieuprestatie Bouwwerken versie 1.2.

EN 15804:2012+A2:2019, Sustainability of construction works - Environmental product declarations - Core rules for the product category of construction products, 2019.

ISO 14025:2006 Environmental labels and declarations — Type III environmental declarations — Principles and procedures, 2006.

SGS INTRON report: A157720/R20251077, April 2025.