Environmental Product Declaration

ISO14025+EN15804+A2

This declaration is for:

Walraven RapidStrut Channel 41|M 6m PG 41×41×2.0 Low Emission (LE)

Provided by:

Walraven Europe B.V.

MRPI® registration:

00086.2026.1.0

Program operator:

Stichting MRPI

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COMPANY INFORMATION

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MRPI® REGISTRATION

00086.2026.1.0

DATE OF THIS ISSUE

15-09-2026

EXPIRY DATE

15-09-2031

SCOPE OF DECLARATION

This MRPI®-EPD certificate is verified by Jeeninga, Anne-Kees,Advieslab V.O.F.. The LCA study has been done by Kuppusamy, Arunkumar, . The certificate is based on a LCA-dossier According to ISO14025+EN15804+A2. It is verified according to the. 'Verification protocol for MRPI LCA project report & EPD 16th of April 2026, V. 5.3'. EPDs of construction products may not be comparable if they do not comply with EN15804+A2.

PRODUCT

Walraven RapidStrut Channel 41|M 6m PG 41×41×2.0 Low Emission (LE)

DECLARED AND FUNCTIONAL UNIT

Length (1 m)

DESCRIPTION OF PRODUCT

Walraven RapidStrut® Low Emission (LE) is a pre-galvanized steel fixing rail developed to significantly reduce production-related CO_2 emissions. It is manufactured from SSAB Zero™ metal-coated structural steel, produced using an electric arc furnace (EAF) process powered by green electricity, without the use of coal or biofuel. The LE product drastically reduces the embodied carbon in installations, without changing installation methods, specifications or system performance.

VISUAL PRODUCT

PROGRAM OPERATOR

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MORE INFORMATION

https://www.walraven.com/nl/producten/railsystemen/

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 and data ISO14025+EN15804+A2 Internal: External: X
	Independent verifier: Jeeninga, Anne-Kees, Advieslab V.O.F..
	[1] PCR = Product Category Rules

DETAILED PRODUCT DESCRIPTION

Walraven RapidStrut® 41×41×2.0 mm Low Emission (LE) is a pre-galvanized steel fixing rail for medium-weight fixing applications. The profile has a width of 41 mm, height of 41 mm, material thickness of 2.0 mm and profile opening of 22 mm. The assessed product has a mass of 2.076 kg per metre.

The product is manufactured from SSAB Zero™ metal-coated structural steel, grade S250GD, with Z275-M-A-C coating according to EN 10346. Production takes place at Walraven Europe B.V., Mijdrecht, the Netherlands.

The RapidStrut® system is designed for fixing and supporting installations and features continuous perforation and inward-formed flanges with a serrated profile for additional grip.

The Reference Service Life (RSL) is 50 years.

Component (> 1%)	(kg / %)
Steel	96.7
Zinc coating	3.3

Biogenic carbon content	Unit	Amount of uptake per functional unit
Biogenic carbon content in product	Kg C	0
Biogenic carbon content in accompanying packaging	Kg C	0
Note that 1 kg of biogenic carbon is equivalent to 44 / 12 kg of CO2.		

SCOPE AND TYPE

Background database: Ecoinvent 3.9.1
Method: Cut-off, EN 15804+A2
Software: Ecochain Helix 4.3.1
Characterization factor: Environmental Footprint (EF) 3.1

The product is manufactured by Walraven Europe B.V. in Mijdrecht, the Netherlands. The EPD is intended for the European market. The assessment follows a cradle-to-grave approach (A1–D) and represents a product-specific EPD.

The LCA was modelled using Ecochain Helix, applying Nationale Milieudatabase (NMD) v3.11 datasets based on ecoinvent 3.9.1, where applicable, and the Environmental Footprint (EF) 3.1 impact assessment method.

For the steel raw material in module A1, a supplier-specific verified EPD for SSAB Zero™ metal-coated steel sheets and coils was used. The SSAB EPD uses GaBi/Sphera background data. The remaining LCA uses NMD v3.11 and ecoinvent 3.9.1 background datasets.

The supplier-specific SSAB Zero™ EPD used for the steel input was modelled using Sphera LCA for Experts and the corresponding Sphera database, version 2024.1.

End-of-life is modelled using the applicable NMD v3.11 datasets and scenarios for transport, steel waste processing, disposal and recycling benefits.

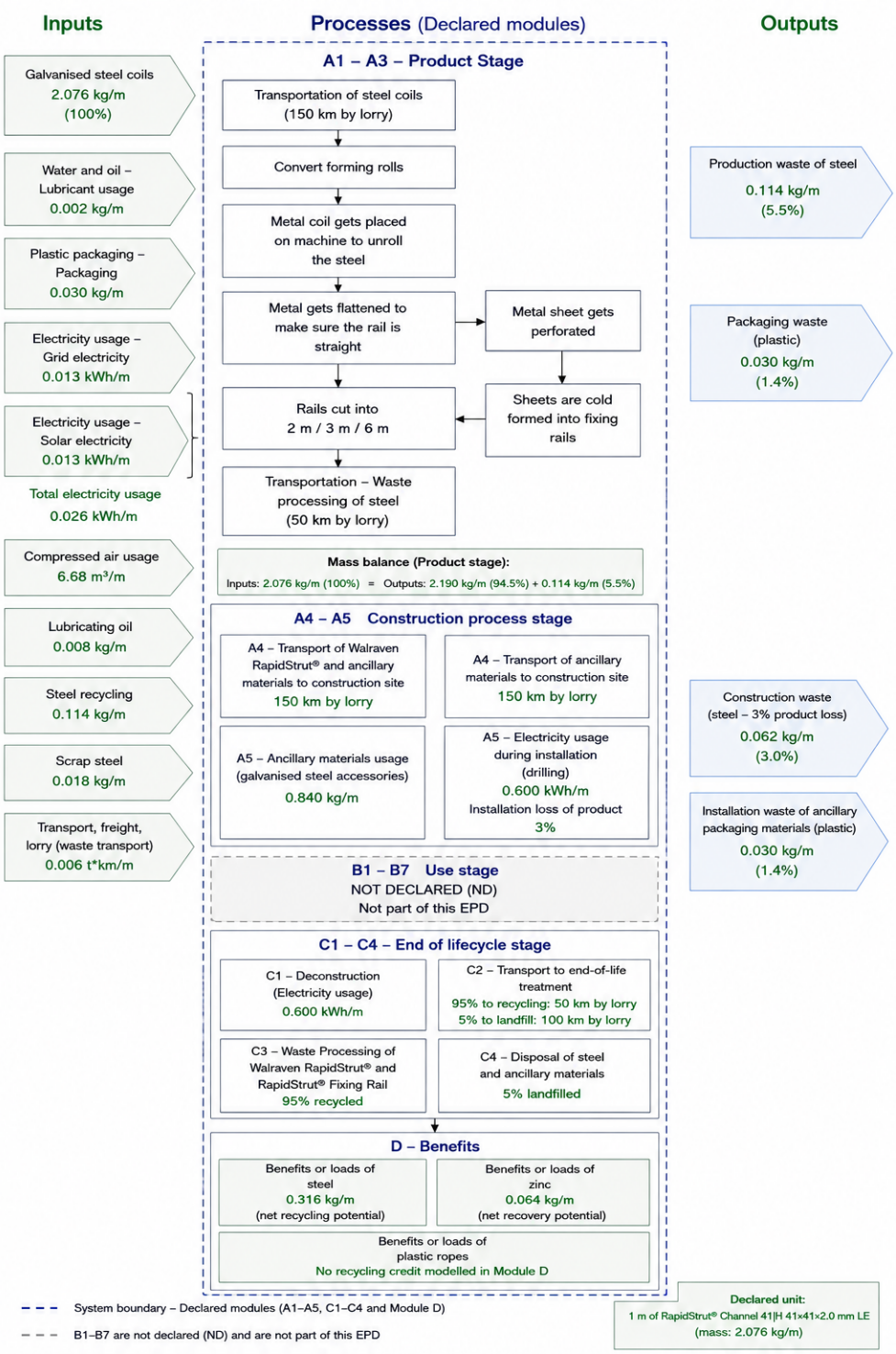
System Boundary
The assessment covers the product stage (A1–A3), construction process stage (A4–A5), and end-of-life stage (C1–C4).

Modules B1–B7 are not declared (ND) and are therefore outside the declared life-cycle modules of this EPD.

Module D is reported separately and represents potential benefits and loads beyond the product system boundary.

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	x	x	ND	ND	ND	ND	ND	ND	ND	x	x	x	x	x

X = Modules Assesed
ND = Not Declared


Inputs
Processes (Declared modules)
Outputs
A1 – A3 – Product Stage
Galvanised steel coils
2.076 kg/m
(100%)
Water and oil – Lubricant usage
0.002 kg/m
Plastic packaging – Packaging
0.030 kg/m
Electricity usage – Grid electricity
0.013 kWh/m
Electricity usage – Solar electricity
0.013 kWh/m
Total electricity usage
0.026 kWh/m
Compressed air usage
6.68 m³/m
Lubricating oil
0.008 kg/m
Steel recycling
0.114 kg/m
Scrap steel
0.018 kg/m
Transport, freight, lorry (waste transport)
0.006 t*km/m
Transportation of steel coils (150 km by lorry)
Convert forming rolls
Metal coil gets placed on machine to unroll the steel
Metal gets flattened to make sure the rail is straight
Metal sheet gets perforated
Sheets are cold formed into fixing rails
Rails cut into 2 m / 3 m / 6 m
Transportation – Waste processing of steel (50 km by lorry)
Mass balance (Product stage):
Inputs: 2.076 kg/m (100%) = Outputs: 2.190 kg/m (94.5%) + 0.114 kg/m (5.5%)
A4 – A5 Construction process stage
A4 – Transport of Walraven RapidStrut® and ancillary materials to construction site
150 km by lorry
A4 – Transport of ancillary materials to construction site
150 km by lorry
A5 – Ancillary materials usage (galvanised steel accessories)
0.840 kg/m
A5 – Electricity usage during installation (drilling)
0.600 kWh/m
Installation loss of product
3%
B1 – B7 Use stage
NOT DECLARED (ND)
Not part of this EPD
C1 – C4 – End of lifecycle stage
C1 – Deconstruction (Electricity usage)
0.600 kWh/m
C2 – Transport to end-of-life treatment
95% to recycling: 50 km by lorry
5% to landfill: 100 km by lorry
C3 – Waste Processing of Walraven RapidStrut® and RapidStrut® Fixing Rail
95% recycled
C4 – Disposal of steel and ancillary materials
5% landfilled
D – Benefits
Benefits or loads of steel
0.316 kg/m
(net recycling potential)
Benefits or loads of zinc
0.064 kg/m
(net recovery potential)
Benefits or loads of plastic ropes
No recycling credit modelled in Module D
Production waste of steel
0.114 kg/m
(5.5%)
Packaging waste (plastic)
0.030 kg/m
(1.4%)
Construction waste (steel – 3% product loss)
0.062 kg/m
(3.0%)
Installation waste of ancillary packaging materials (plastic)
0.030 kg/m
(1.4%)
System boundary – Declared modules (A1–A5, C1–C4 and Module D)
B1–B7 are not declared (ND) and are not part of this EPD
Declared unit:
1 m of RapidStrut® Channel 41|H 41×41×2.0 mm LE
(mass: 2.076 kg/m)

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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	1.52E +00	2.29E -01	3.49E -02	1.78E +00	4.65E -02	2.36E +00	ND	ND	ND	ND	ND	ND	ND	2.04E -01	7.74E -02	5.47E -02	1.05E -03	-7.48 E-01
GWP-fossil	kg CO2 eq	1.51E +00	2.28E -01	3.45E -02	1.77E +00	4.62E -02	2.34E +00	ND	ND	ND	ND	ND	ND	ND	1.97E -01	7.70E -02	5.56E -02	1.05E -03	-7.50 E-01
GWP-biogenic	kg CO2 eq	7.55E -03	3.07E -04	3.25E -04	8.18E -03	7.21E -05	9.08E -03	ND	ND	ND	ND	ND	ND	ND	6.41E -03	1.20E -04	-9.67 E-04	6.02E -07	1.65E -03
GWP-luluc	kg CO2 eq	2.29E -03	7.35E -04	4.10E -05	3.07E -03	1.65E -04	9.28E -03	ND	ND	ND	ND	ND	ND	ND	5.82E -04	2.75E -04	8.15E -05	6.35E -07	-3.97 E-04
ODP (A2)	kg CFC11 eq	3.12E -11	3.98E -09	8.80E -10	4.89E -09	8.22E -10	4.71E -08	ND	ND	ND	ND	ND	ND	ND	3.70E -09	1.37E -09	8.83E -10	3.04E -11	-2.48 E-08
AP mol H+	mol H+ eq	6.01E -03	1.78E -03	2.94E -04	8.08E -03	2.21E -04	2.75E -02	ND	ND	ND	ND	ND	ND	ND	1.14E -03	3.69E -04	6.23E -04	7.92E -06	-3.27 E-03
EP-freshwater	kg P eq	3.03E -05	2.10E -06	1.64E -06	3.40E -05	4.60E -07	2.18E -04	ND	ND	ND	ND	ND	ND	ND	1.96E -05	7.66E -07	2.54E -06	1.03E -08	3.31E -05
EP-marine	kg N eq	1.74E -03	5.68E -04	4.37E -05	2.35E -03	8.41E -05	2.77E -03	ND	ND	ND	ND	ND	ND	ND	1.40E -04	1.40E -04	1.42E -04	3.02E -06	-6.65 E-04
EP-terrestrial	mol N eq	1.90E -02	6.14E -03	4.95E -04	2.56E -02	8.97E -04	9.85E -02	ND	ND	ND	ND	ND	ND	ND	1.60E -03	1.50E -03	1.62E -03	3.26E -05	-9.77 E-03
POCP kg NMVOC	kg NMVOC eq	4.87E -03	1.94E -03	3.70E -04	7.18E -03	3.06E -04	1.02E -02	ND	ND	ND	ND	ND	ND	ND	5.13E -04	5.10E -04	4.85E -04	1.13E -05	-5.21 E-03
ADP-minerals & metals	kg Sb eq	1.16E -04	4.65E -06	1.86E -06	1.23E -04	1.05E -06	6.12E -06	ND	ND	ND	ND	ND	ND	ND	2.66E -06	4.89E -07	3.78E -06	1.16E -08	-4.14 E-04
ADP-fossil	MJ, net calorific value	2.18E +01	3.20E 00	7.38E -01	2.57E +01	6.62E -01	2.74E +01	ND	ND	ND	ND	ND	ND	ND	4.47E +00	1.10E +00	7.54E -01	2.62E -02	-7.50 E+00
WDP	m3 world eq. Deprived	4.86E -01	1.86E -02	4.01E -02	5.45E -01	4.06E -03	1.07E +00	ND	ND	ND	ND	ND	ND	ND	5.17E -02	6.77E -03	1.03E -02	1.18E -03	-8.91 E-02

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
AP-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 withthe indicator.

ECO PLATFORM EPD VERIFIED

MRPI milieu relevante product informatie

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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 incidence	1.17E-07	2.06E-08	2.84E-09	1.41E-07	4.56E-09	3.27E-07	ND	ND	ND	ND	ND	ND	ND	3.48E-09	7.61E-09	8.53E-09	1.73E-10	-6.36E-08
IRP	kBq U235 eq	1.71E-01	1.19E-03	6.75E-04	1.73E-01	2.58E-04	7.70E-02	ND	ND	ND	ND	ND	ND	ND	4.02E-02	4.30E-04	2.01E-03	6.92E-06	-7.45E-03
ETP-fw	CTUe	9.71E+00	2.28E00	4.51E-01	1.24E+01	4.89E-01	2.91E+01	ND	ND	ND	ND	ND	ND	ND	6.49E-01	8.14E-01	5.91E-01	1.23E-02	-2.16E+01
HTP-c	CTUh	1.06E-08	1.18E-10	1.05E-10	1.08E-08	2.45E-11	1.50E-08	ND	ND	ND	ND	ND	ND	ND	5.48E-11	4.08E-11	8.48E-11	4.47E-13	5.89E-09
HTP-nc	CTUh	1.87E-08	2.40E-09	2.40E-09	2.35E-08	5.32E-10	6.01E-08	ND	ND	ND	ND	ND	ND	ND	3.08E-09	8.86E-10	3.82E-09	5.60E-12	2.89E-08
SQP	-	3.28E+01	2.29E00	1.72E-01	3.53E+01	5.22E-01	8.36E+00	ND	ND	ND	ND	ND	ND	ND	8.90E-01	8.71E-01	1.34E+00	5.20E-02	-1.99E+00

PM = Potential incidence of disease due to particulate matter 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, cancer [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 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
HWD	kg	2.90E-06	7.26E-06	8.24E-06	1.84E-05	1.61E-06	4.42E-04	ND	ND	ND	ND	ND	ND	ND	1.24E-05	2.68E-06	2.21E-06	3.80E-08	-7.68E-04
NHWD	kg	2.80E-01	1.75E-01	3.76E-02	4.93E-01	4.02E-02	7.19E-01	ND	ND	ND	ND	ND	ND	ND	1.74E-02	6.70E-02	2.14E-02	1.73E-01	-1.24E-01
RWD	kg	1.53E-03	2.03E-05	4.36E-07	1.56E-03	4.16E-06	1.30E-04	ND	ND	ND	ND	ND	ND	ND	3.27E-05	6.94E-06	4.35E-06	1.67E-07	-9.31E-06
CRU	kg	0.00E+00	0.00E00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	ND	ND	ND	ND	ND	ND	ND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	kg	2.03E+00	0.00E00	0.00E+00	2.03E+00	0.00E+00	6.10E-02	ND	ND	ND	ND	ND	ND	ND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MER	kg	0.00E+00	0.00E00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	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	0.00E00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	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	0.00E00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	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 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	1.86E+01	3.66E-02	3.01E+00	2.17E+01	7.93E-03	3.78E+00	ND	ND	ND	ND	ND	ND	ND	1.23E+00	1.32E-02	1.15E-01	2.06E-04	-1.88E-01
PERM	MJ	0.00E+00	0.00E00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	ND	ND	ND	ND	ND	ND	ND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	MJ	1.86E+01	3.66E-02	3.01E+00	2.17E+01	7.93E-03	3.78E+00	ND	ND	ND	ND	ND	ND	ND	1.23E+00	1.32E-02	1.15E-01	2.06E-04	-1.88E-01
PENRE	MJ	1.63E+01	3.26E00	7.85E-01	2.04E+01	6.73E-01	2.68E+01	ND	ND	ND	ND	ND	ND	ND	4.69E+00	1.12E+00	7.78E-01	2.70E-02	-1.02E+01
PENRM	MJ	0.00E+00	0.00E00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	ND	ND	ND	ND	ND	ND	ND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	MJ	1.63E+01	3.26E00	7.85E-01	2.04E+01	6.73E-01	2.68E+01	ND	ND	ND	ND	ND	ND	ND	4.69E+00	1.12E+00	7.78E-01	2.70E-02	-1.02E+01
SM	kg	2.26E+00	0.00E00	0.00E+00	2.26E+00	0.00E+00	6.79E-02	ND	ND	ND	ND	ND	ND	ND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RSF	MJ	0.00E+00	0.00E00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	ND	ND	ND	ND	ND	ND	ND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	MJ	0.00E+00	0.00E00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	ND	ND	ND	ND	ND	ND	ND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	m3	-4.32E-02	3.51E-04	2.29E-02	-2.00E-02	7.72E-05	2.90E-02	ND	ND	ND	ND	ND	ND	ND	3.06E-03	1.29E-04	3.48E-04	2.72E-05	-9.70E-03

PERE = Use of renewable primary energy excluding renewable primary energy 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 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
NRSF = Use of non-renewable secondary fuels
FW = Use of net fresh water

CALCULATION RULES

The LCA was performed in accordance with EN 15804+A2:2019 and ISO 14040/14044. Product-specific primary data were used for material inputs and manufacturing at Walraven Europe B.V., Mijdrecht, based on the reference period January–June 2026.

Supplier-specific data were used where available, including the verified SSAB Zero™ EPD for the steel raw material. Remaining background processes were modelled using NMD v3.11 and ecoinvent v3.9.1 Cut-off datasets. Dataset selection considered technological, geographical and temporal representativeness and compatibility with the EF 3.1 impact assessment method.

Allocation of manufacturing energy and materials was based on actual production and product data. The mass balance was checked against the Bill of Materials, product mass, purchased raw materials, manufacturing losses, steel scrap and finished product mass. No significant energy flows were excluded from the assessment.

Cut-off criteria
The cut-off criteria are applied in accordance with EN 15804+A2. All relevant material, energy and emission flows are included in the assessment. Neglected input flows do not exceed 1% of the total mass or energy input for any individual unit process and do not exceed 5% of the total environmental significance of the product system.

DATA QUALITY

Primary manufacturing data are product- and site-specific, collected from Walraven Europe B.V., Mijdrecht. Material composition is based on the product-specific Bill of Materials and actual product mass.

The main raw material is represented by the supplier-specific, independently verified SSAB Zero™ EPD. Background processes are based primarily on NMD v3.11 and ecoinvent v3.9.1 datasets. Dataset selection considered technological, geographical and temporal representativeness and compatibility with EN 15804+A2 and EF 3.1.

The completeness and consistency of the inventory were checked through mass and energy balances. Supplier-specific and primary data were prioritised over generic background data.

Data quality:
Overall data quality is assessed as Good. Primary Walraven manufacturing data are assessed as Very Good regarding temporal, geographical and technological representativeness, as site-specific data from Mijdrecht for January–June 2026 are used. Supplier-specific SSAB EPD data and the selected NMD/ecoinvent background datasets are assessed as Good.

Data collection period
Primary manufacturing data were collected at Walraven Europe B.V., Mijdrecht, the Netherlands, for the period January–June 2026. This period represents the complete production period available for the RapidStrut® Low Emission product at the time of the assessment. The data are based on actual production records and measured manufacturing inputs and are considered representative of the current manufacturing process.

POWER MIX

A market-based approach is applied for electricity modelling. Manufacturing electricity at the Walraven Europe B.V. production facility in Mijdrecht consists of on-site photovoltaic (PV) electricity and purchased grid electricity.

On-site PV electricity is modelled using the ecoinvent “market for electricity, low voltage | electricity, low voltage (photovoltaic) – Netherlands” dataset, adapted by Ecochain. Purchased electricity is modelled using the “market for electricity, low voltage | Netherlands” dataset. The electricity datasets are based on ecoinvent v3.9.1 Cut-off.

The electricity consumption and allocation are based on primary manufacturing data from the Mijdrecht production facility.

Electricity source	Dataset	Database
On-site PV electricity	Electricity (NL), solar electricity (PV, rooftop or façade)	Ecochain / ecoinvent v3.9.1
Purchased electricity	Electricity, residual mix, low voltage, The Netherlands	ecoinvent v3.9.1

SCENARIOS AND ADDITIONAL TECHNICAL INFORMATION

A1–A3 – Product stage:
A1 includes the production of the steel raw material using the supplier-specific verified SSAB Zero™ metal-coated steel EPD. A2 covers transport of the raw material to the Walraven production facility in Mijdrecht. A3 includes manufacturing processes at Walraven Europe B.V., based on primary production data.

A4 – Transport to construction site:
Transport to the construction site is modelled according to the applicable transport scenario using NMD v3.11 datasets. Transport from the Walraven production facility to the construction site is modelled as 150 km by freight lorry.

A5 – Installation:
Installation includes 0.84 kg galvanized steel installation accessories, 0.60 kWh electricity for drilling, and a 3% product installation loss per declared unit.

B1–B7 – Use stage:
Modules B1–B7 are not declared (ND) and are outside the declared life-cycle modules of this EPD. No maintenance, repair, replacement, refurbishment, operational energy or operational water use is required under normal conditions.

C1–C4 – End-of-life:
C1 – Deconstruction:
Deconstruction of the installed product is modelled with an electricity consumption of 0.60 kWh per meter of product.

C2 – Transport to waste treatment:
At end-of-life, 95% of the steel product is assumed to be transported 50 km to recycling, while the remaining 5% is transported 100 km to final disposal.

C3 – Waste processing:
95% of the steel product is assumed to be recovered for recycling. The required waste-processing activities prior to recycling are accounted for in Module C3.

C4 – Disposal:
The remaining 5% of the steel product is assumed to be disposed of by landfill, with the corresponding disposal impacts accounted for in Module C4.

Module D:
Module D accounts for potential benefits and loads beyond the system boundary associated with the recovery and recycling of steel and zinc.

The relevant supporting evidence and its location have been identified in the EPD/project documentation, including the SSAB Zero™ EPD, Walraven material specification/BOM, primary manufacturing data and supporting LCA documentation.

DECLARATION OF SVHC

The product does not contain substances of very high concern (SVHC) included in the REACH Candidate List in concentrations above 0.1% (w/w).

REFERENCES

EN 15804:2012+A2:2019 – Sustainability of construction works – Environmental product declarations – Core rules for the product category of construction products.
ISO 14040:2006 – Environmental management – Life cycle assessment – Principles and framework.
ISO 14044:2006 – Environmental management – Life cycle assessment – Requirements and guidelines.
ISO 14025:2006 – Environmental labels and declarations – Type III environmental declarations.
MRPI Verification Protocol, Version 5.3, April 2026.
ECO Platform – LCA Calculation Rules, Version 2.0.
Nationale Milieudatabase (NMD) v3.11.
ecoinvent database v3.9.1, Cut-off system model.
Environmental Footprint (EF) 3.1 impact assessment method.
SSAB Zero™ metal-coated steel Environmental Product Declaration, supplier-specific verified EPD.

REMARKS

Module A1 uses the supplier-specific, independently verified “Metal coated SSAB Zero™ steel sheets and coils” EPD (EPD-IES-0018719:002) from SSAB EMEA AB. The EPD follows EN 15804+A2 and ISO 14025 and represents the SSAB S250GD Zero, Z275 metal-coated steel used in the RapidStrut® Low Emission (LE) product. The SSAB EPD was modelled using Sphera LCA for Experts, database version 2024.1.

The SSAB EPD is used because it represents the actual steel supplied for RapidStrut® LE, rather than a generic steel alternative. This is supported by the Walraven BOM/material specification and relevant supplier documentation.

The relevant cradle-to-gate impacts of the SSAB steel are incorporated into A1 based on the actual steel quantity used. Transport from the supplier to Walraven is modelled separately in A2, while Walraven's manufacturing processes in Mijdrecht are modelled separately in A3 using primary production data. This provides a clear separation between supplier and Walraven processes and avoids omissions or double counting.

The remaining life-cycle model uses NMD v3.11 and ecoinvent v3.9.1, with EF 3.1 characterisation. Compatibility between the SSAB EPD and the Walraven model has been assessed with respect to system boundaries, allocation, recycling and end-of-waste rules, LCIA methodology and characterisation factors. RapidStrut® end-of-life stages C1–C4 and Module D are modelled separately, avoiding overlap with the supplier EPD.

The use of different background databases is clearly documented in the EPD and project report. While differences between Sphera and ecoinvent may affect direct comparability with EPDs based entirely on one background database, the supplier-specific SSAB EPD provides better technological and supply-chain representativeness for the steel actually used. Its selection is therefore based on representativeness and data quality, rather than on selecting a more favourable environmental result.

As an additional check, a plausibility comparison with an appropriate generic steel dataset is included in the verification dossier, with the remaining RapidStrut® model kept unchanged. The SSAB production route and supporting documentation are also reviewed against the current ECO Platform requirements regarding mass-balance and book-and-claim approaches.

The results of the calculation using GaBi probably lead to smaller environmental effects in Module A1 compared with ecoinvent. Users of this EPD should be aware of this when interpreting and comparing the environmental results.