

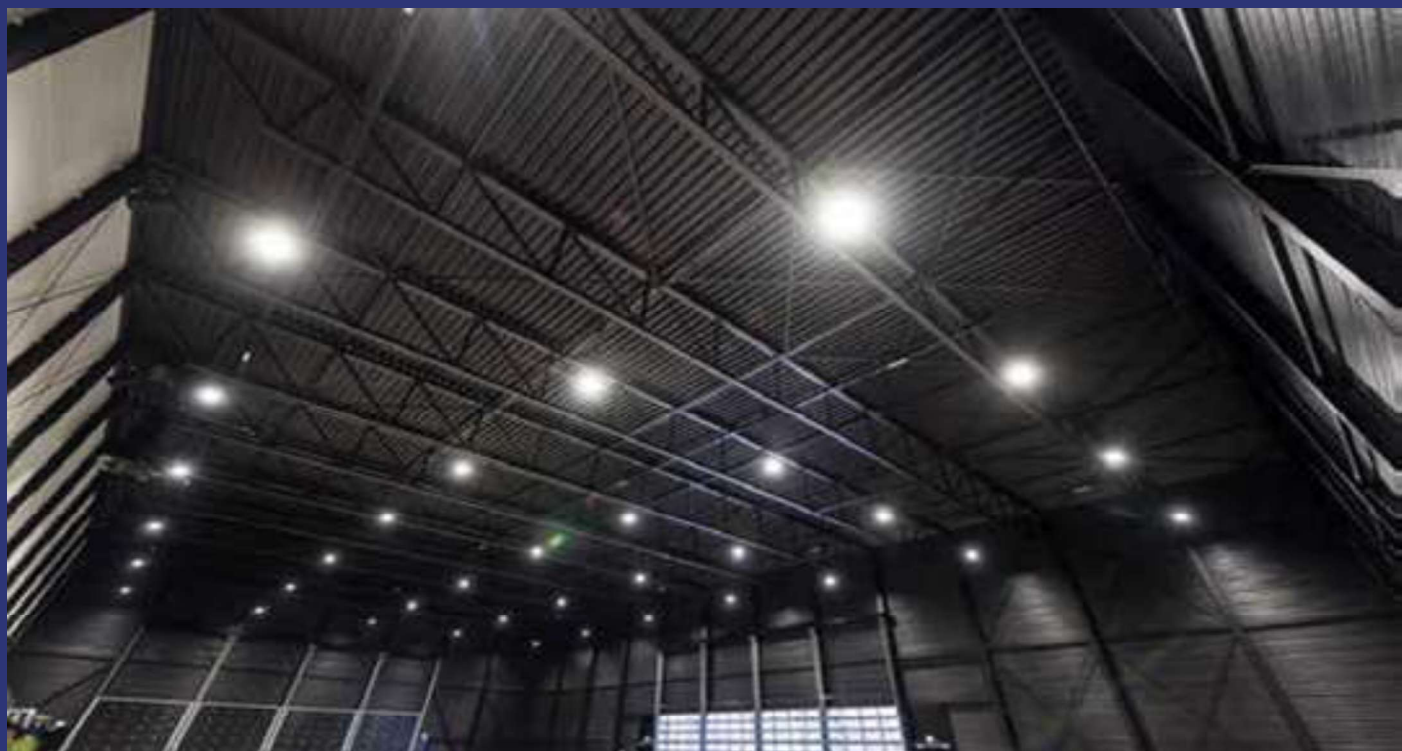


**Environmental
Product
Declaration**

According to ISO14025+EN15804 A2 (+indicators A1)

This declaration is for:
DELFT steel roof

Provided by:
Delft Metal B.V.



MRPI® registration:
1.1.01121.2026

Program operator:
Stichting MRPI®
Publisher:
Stichting MRPI®
www.mrpi.nl

Date of first issue:
12-3-2026
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Expiry date:
12-3-2031





DETAILED PRODUCT DESCRIPTION (PART 1)

The roofing profiles are made of steel. The steel is shipped to the production site in Waalwijk in the Netherlands. The steel is formed and cut into the different types of roofing profiles. The profile is used as a load-bearing profile for insulation and a waterproof roof covering. No flashing is required for the application of the standard profile. The environmental profile takes into account installation with nails. The reference type is 137R/930, with a height of 137 mm and a reference thickness of 0.75 mm.

This environmental declaration can be used for calculating alternative product variants. This environmental declaration contains a conversion table for the variants: 137R/930, 155R/840, and 160R/750 and the sheet thicknesses between 0.75 mm and 1.50 mm.

DETAILED PRODUCT DESCRIPTION (PART 2)

Reference service life: 100 years.

Component (> 1%)	(kg / %)
Steel	97,50%
Zinc and Coating	2,20%
Nails	0,30%

SCOPE AND TYPE

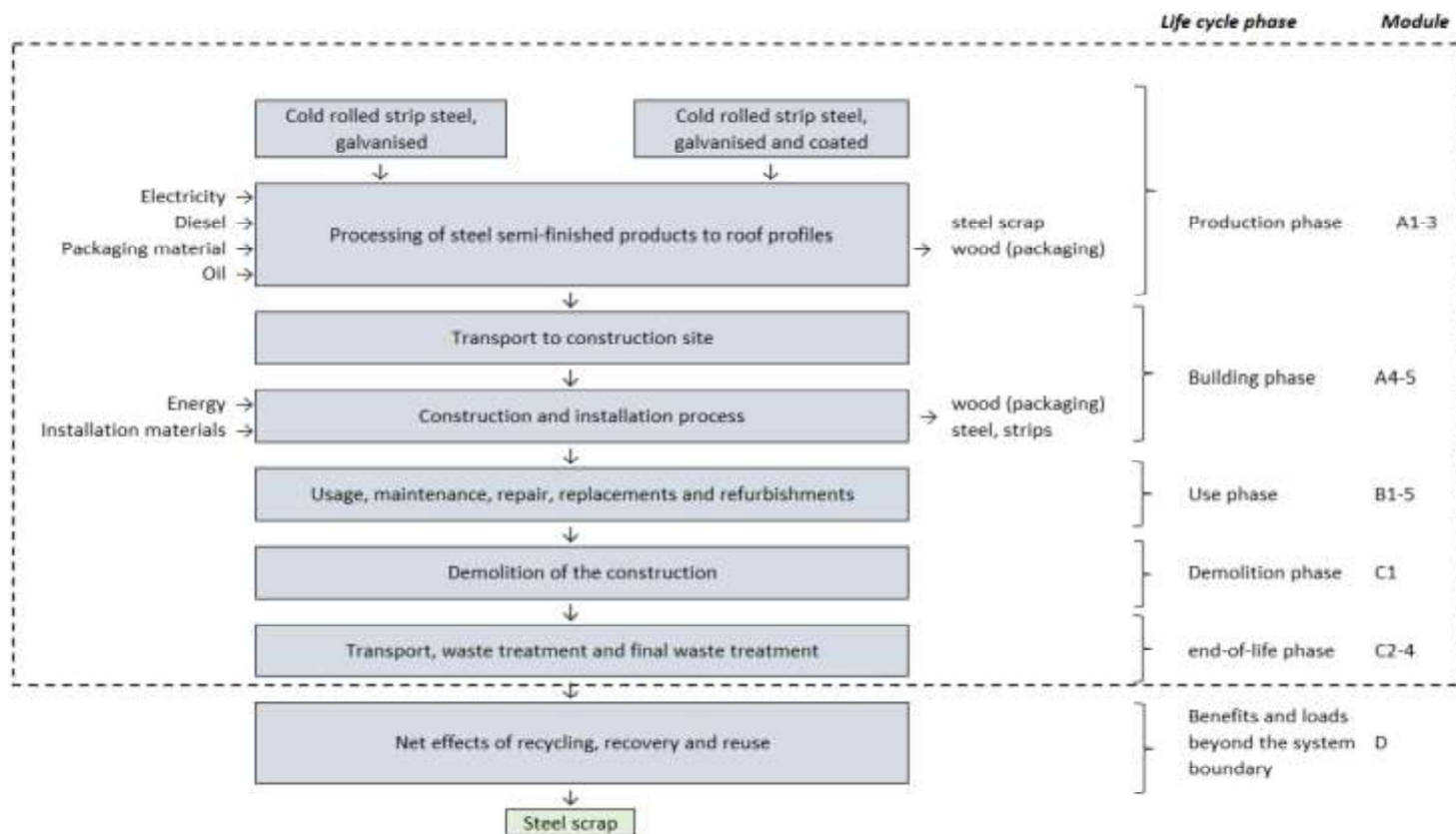
This EPD is based on a Cradle-to-Grave with module D LCA of Delft Profielen. The products are installed in the Netherlands, and are treated according to the Dutch end-of-life scenarios after the service life.

Company-specific data for the production stage has been collected by Delft Profielen. The LCI data has been evaluated by the LCA-practitioner and checked by the EPD verifier. Generic data has been used for the background processes, originating from the Ecoinvent 3.9,1 Cut-off database. Results for 'set 1' of NMD Assessment method version 1.2, based on EN 15804:A1 with additional toxicity indicators, are based on background dataset Ecoinvent 3.6. For the calculation of the LCA results, the software program SimaPro 10.2.0.2 has been used.

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	x	x	x	x	x	x	x	x	x	x	x	x

X = Modules Assessed

ND = Not Declared



REPRESENTATIVENESS

The data used for the LCA is representative for roof profiles with coating types ZM120, ZM100 en Interiorcoating.





ENVIRONMENTAL IMPACT per functional unit or declared unit (indicators A1)

	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
ADPE	kg Sb eq.	0,00E+00	0,00E+00	0,00E+00	3,59E-03	2,23E-06	1,08E-04	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	9,41E-08	1,80E-07	4,34E-06	5,87E-10	-8,05E-04
ADPF	MJ	0,00E+00	0,00E+00	0,00E+00	3,43E+02	2,02E+00	1,06E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,31E-01	9,71E-01	3,39E+00	1,46E-02	-1,86E+02
GWP	kg CO2 eq.	0,00E+00	0,00E+00	0,00E+00	2,73E+01	1,30E-01	8,42E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	7,27E-03	6,33E-02	2,49E-01	5,14E-04	-1,60E+01
ODP	kg CFC11 eq.	0,00E+00	0,00E+00	0,00E+00	1,05E-06	2,46E-08	3,44E-08	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	6,60E-10	1,17E-08	2,95E-08	1,70E-10	-2,70E-07
POCP	kg ethene eq.	0,00E+00	0,00E+00	0,00E+00	1,75E-02	7,93E-05	5,37E-04	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,90E-06	3,73E-05	1,96E-04	5,45E-07	-1,17E-02
AP	kg SO2 eq.	0,00E+00	0,00E+00	0,00E+00	9,25E-02	3,40E-04	2,89E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,69E-05	2,74E-04	2,15E-03	3,80E-06	-3,74E-02
EP	kg (PO4) 3 eq.	0,00E+00	0,00E+00	0,00E+00	1,46E-02	5,59E-05	4,61E-04	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,22E-06	5,47E-05	4,62E-04	7,15E-07	-5,13E-03

Toxicity indicators and ECI (Dutch market)

HTP	kg DCB eq.	0,00E+00	0,00E+00	0,00E+00	7,45E+00	2,80E-02	2,37E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	3,22E-03	2,53E-02	2,39E-01	2,10E-04	-3,42E+00
FAETP	kg DCB eq.	0,00E+00	0,00E+00	0,00E+00	1,19E-01	1,18E-03	3,78E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	5,09E-05	7,42E-04	3,33E-03	5,22E-06	-5,81E-03
MAETP	kg DCB eq.	0,00E+00	0,00E+00	0,00E+00	3,64E+02	3,19E+00	1,19E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,73E-01	2,68E+00	2,01E+01	1,79E-02	-5,92E+01
TETP	kg DCB eq.	0,00E+00	0,00E+00	0,00E+00	5,01E-02	1,60E-04	1,65E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,11E-04	8,97E-05	7,78E-04	6,21E-07	2,72E-01
ECI	euro	0,00E+00	0,00E+00	0,00E+00	2,64E+00	1,16E-02	8,24E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	7,81E-04	7,47E-03	4,95E-02	7,04E-05	-1,33E+00
ADPF	kg Sb eq.	0,00E+00	0,00E+00	0,00E+00	1,65E-01	9,71E-04	5,11E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	6,31E-05	4,67E-04	1,63E-03	7,00E-06	-8,97E-02

- 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 = Fresh water aquatic ecotoxicity potential
- MAETP = Marine aquatic ecotoxicity potential
- TETP = Terrestrial ecotoxicity potential
- ECI = Environmental Cost Indicator
- ADPF = Abiotic Depletion Potential for fossil resources





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.	0,00E+00	0,00E+00	0,00E+00	2,79E+01	1,44E-01	9,24E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	7,66E-03	6,39E-02	2,54E-01	5,25E-04	-1,61E+01
GWP-fossil kg CO2 eq.	0,00E+00	0,00E+00	0,00E+00	2,80E+01	1,44E-01	8,61E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	7,66E-03	6,38E-02	2,54E-01	5,25E-04	-1,61E+01
GWP-biogenic kg CO2 eq.	0,00E+00	0,00E+00	0,00E+00	-6,18E-02	0,00E+00	6,18E-02	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
GWP-luluc kg CO2 eq.	0,00E+00	0,00E+00	0,00E+00	2,07E-02	4,71E-05	6,38E-04	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,25E-06	2,00E-05	2,89E-04	2,31E-07	5,11E-03
ODP kg CFC11 eq.	0,00E+00	0,00E+00	0,00E+00	6,31E-07	3,20E-09	2,12E-08	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	6,39E-10	1,46E-08	3,44E-08	2,15E-10	-1,13E-07
AP mol H+ eq.	0,00E+00	0,00E+00	0,00E+00	1,26E-01	3,42E-04	3,93E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,89E-05	3,64E-04	2,71E-03	4,99E-06	-4,65E-02
EP-fresh water kg P eq.	0,00E+00	0,00E+00	0,00E+00	1,34E-03	9,45E-07	4,27E-05	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,38E-07	9,33E-07	7,40E-05	9,40E-09	-5,37E-04
EP-marine kg N eq.	0,00E+00	0,00E+00	0,00E+00	2,02E-02	9,84E-05	6,41E-04	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	4,00E-06	1,27E-04	6,06E-04	1,65E-06	-9,17E-03
EP-terrestrial mol N eq.	0,00E+00	0,00E+00	0,00E+00	3,34E-01	1,04E-03	1,04E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	4,39E-05	1,40E-03	7,11E-03	1,82E-05	-9,19E-02
POCP kg NMVOC eq.	0,00E+00	0,00E+00	0,00E+00	7,63E-02	5,73E-04	2,41E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,43E-05	3,99E-04	1,91E-03	5,29E-06	-4,01E-02
ADP-minerals & metals kg Sb eq.	0,00E+00	0,00E+00	0,00E+00	1,00E-03	2,36E-07	3,02E-05	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	5,10E-08	1,80E-07	4,34E-06	5,87E-10	-7,99E-04
ADP-fossil MJ, net calorific value	0,00E+00	0,00E+00	0,00E+00	2,45E+02	2,11E+00	7,70E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,22E-01	9,78E-01	3,44E+00	1,47E-02	-1,03E+02
WDP m3 world eq. Deprived	0,00E+00	0,00E+00	0,00E+00	4,85E+00	1,16E-02	1,49E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,42E-03	5,75E-03	4,00E-02	6,81E-04	-1,79E+00

- 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 incidence	0,00E+00	0,00E+00	0,00E+00	1,20E-06	1,18E-08	3,78E-08	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,36E-10	5,73E-09	3,55E-08	9,43E-11	-3,37E-07
IRP	kBq U235 eq.	0,00E+00	0,00E+00	0,00E+00	4,73E-01	9,68E-04	1,50E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,09E-04	4,19E-03	1,55E-02	6,01E-05	-2,77E-02
ETP-fw	CTUe	0,00E+00	0,00E+00	0,00E+00	4,27E+02	9,87E-01	1,32E+01	0,00E+00	6,11E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	6,45E-02	6,31E-01	8,12E+00	8,18E-03	-2,92E+02
HTP-c	CTUh	0,00E+00	0,00E+00	0,00E+00	7,37E-08	4,43E-11	2,24E-09	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,26E-11	2,67E-11	2,51E-10	2,07E-13	-1,25E-08
HTP-nc	CTUh	0,00E+00	0,00E+00	0,00E+00	3,14E-07	9,16E-10	9,94E-09	0,00E+00	2,17E-10	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	9,52E-11	8,96E-10	1,09E-08	6,53E-12	1,19E-06
SQP	-	0,00E+00	0,00E+00	0,00E+00	6,24E+01	2,19E+00	2,18E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,03E-02	8,31E-01	6,41E+00	3,10E-02	-1,68E+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, 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 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	0,00E+00	0,00E+00	0,00E+00	1,98E-03	1,32E-05	6,03E-05	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,17E-07	6,02E-07	4,16E-06	1,04E-08	-2,67E-04
NHWD	kg	0,00E+00	0,00E+00	0,00E+00	2,93E+00	1,90E-01	1,07E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	7,00E-04	5,98E-02	1,00E-01	9,63E-02	4,39E-02
RWD	kg	0,00E+00	0,00E+00	0,00E+00	4,77E-04	6,15E-07	1,53E-05	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,87E-07	6,59E-06	1,99E-05	9,59E-08	2,79E-05
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	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
MFR	kg	0,00E+00	0,00E+00	0,00E+00	2,97E-05	0,00E+00	2,91E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	6,85E-06	0,00E+00	9,51E+00	0,00E+00	0,00E+00
MER	kg	0,00E+00	0,00E+00	0,00E+00	3,08E-06	0,00E+00	4,90E-07	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	3,98E-07	0,00E+00	0,00E+00	0,00E+00	0,00E+00
EEE	MJ	0,00E+00	0,00E+00	0,00E+00	2,92E-05	0,00E+00	7,70E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,70E-05	0,00E+00	0,00E+00	0,00E+00	0,00E+00
ETE	MJ	0,00E+00	0,00E+00	0,00E+00	5,02E-05	0,00E+00	1,33E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	4,64E-05	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	0,00E+00	0,00E+00	0,00E+00	1,42E+01	2,76E-02	4,44E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,49E-03	1,33E-02	5,03E-01	3,75E-04	2,74E-01
PERM	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	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PERT	MJ	0,00E+00	0,00E+00	0,00E+00	1,42E+01	2,76E-02	4,44E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,49E-03	1,33E-02	5,03E-01	3,75E-04	2,74E-01
PENRE	MJ	0,00E+00	0,00E+00	0,00E+00	2,82E+02	2,11E+00	8,81E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,31E-01	1,04E+00	3,66E+00	1,56E-02	-1,59E+01
PENRM	MJ	0,00E+00	0,00E+00	0,00E+00	4,57E-01	0,00E+00	1,37E-02	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	0,00E+00	0,00E+00	0,00E+00	2,82E+02	2,11E+00	8,83E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,31E-01	1,04E+00	3,66E+00	1,56E-02	-1,59E+01
SM	kg	0,00E+00	0,00E+00	0,00E+00	8,46E-01	0,00E+00	2,54E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,04E-06	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	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	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	0,00E+00
FW	m3	0,00E+00	0,00E+00	0,00E+00	2,07E-01	3,66E-04	6,33E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	4,77E-05	1,87E-04	1,09E-03	1,58E-05	-8,77E-04

- 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
- 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	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	0,00E+00
BCCpa	kg C	0,00E+00	0,00E+00	0,00E+00	1,81E-03	0,00E+00	-1,81E-03	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

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





CALCULATION RULES (PART 1)

The reference year of this study is 2024. The LCA was carried out in accordance with the requirements and guidelines of the NMD "Bepalingsmethode Milieuprestatie Bouwwerken" (Environmental Performance Assessment Method for Construction Works) (version 1.2, January 2025) and the NMD-Verification protocol (version 2.0, July 2025). The NMD-Assessment method is based on ISO 14040 - ISO14044 and NEN-EN 15804:2012 + A2 (2019).

Allocation

All material inputs and outputs have been collected at the product level.

Cut-off

In compliance to the EN15804 and the additional requirements in the NMD Assessment Method the following cut-off criteria have been applied:

- All input and output flows for which specific information was available have been included in the calculations.
- A cut-off process must contribute less than 1% of the energy usage and 1% of the total mass of the unit process. An excluded process cannot contribute over 5% to a single environmental impact indicator per module.
- The total number of excluded input streams can account for maximum 5% of the energy usages and mass.

No input streams have been disregarded in this LCA.

Within the system boundaries of this LCA study, and in compliance with EN 15804, the following inputs and output have been excluded from the LCA study:

- Overhead processes, like office departments, personal transportation, etc.
- Production, maintenance and the end of life stage of capital goods like buildings, machinery, etc.

It is not to be expected for the upper mentioned processes to contribute significantly to the environmental profile of the products.

CALCULATION RULES (PART 2)

This environmental declaration can be used for calculating alternative product variants. The environmental impact of other types and thicknesses can be calculated by multiplying the results with the corresponding scaling factor for the variants: 137R/930, 155R/840, and 160R/750 and the sheet thicknesses between 0.75 mm and 1.50 mm.

Thickness (mm)	137R/930	155R/840	160R/750
0,75	1	1,138	1,176
0,82	1,098	1,248	1,29
0,88	1,182	1,343	1,388
1	1,349	1,533	1,584
1,13	1,531	1,739	1,796
1,25	1,699	1,929	1,992
1,5	2,048	2,324	2,4



SCENARIOS AND ADDITIONAL TECHNICAL INFORMATION (PART 1)

Production, A1-A3

The steel with different coating types is shipped to the production site in Waalwijk in the Netherlands. The steel is formed and cut into the different types of roofing profiles. In the production processes, electricity and diesel are used. Steel scrap from the manufacturing process is recycled. Finished products are packed with steel wire and placed on wooden pallets and transported to the construction site in the Netherlands.

Construction and installation, A4-A5

In compliance with the NMD Assessment Method, the average transport distance of 150 km is applied for warehouses that are located in the Netherlands, and 3% of the products will be lost during the construction stage.

The installation of the product takes place with an electric crane.

The packaging materials are processed as waste in module A5, in accordance with the standard end-of-life scenarios as prescribed by the NMD Assessment Method and given in the table below.

Use, B1-B7

There are no expected emissions, maintenance, repairs, replacements or refurbishments during the life span of the products. Furthermore, there is no operational energy- or water usage throughout the life span of the products. As such this module has been declared as "0".

End-of-life, C1-C4

It is assumed that the deconstruction stage C1 corresponds to the installation stage regarding the use of mobile machinery.

The steel profiles will be recycled (99%) and landfilled (1%).

Loads and benefits beyond the system boundary, D

Through the EAF and BOF route, secondary steel can replace primary steel 1 to 1. The galvanization and coating are included in the recycling process. The share of zinc on the steel plates can be partially recovered through the EAF route. However, the shares of aluminium, magnesium, and silicon cannot be recovered. The emissions that are released during these processes are also included. The recycling loads and benefits, after reaching end of waste, of the losses during construction and that of the packaging materials (A5) are included in module D.

Material for waste processing and disposal	Landfill (%)	Incineration (%)	Recycling (%)	C2 transport distance (km)
Steel roofing profiles	1		99	50,5
Steel nails	1		99	50,5
Steel packaging	5		95	52,5
Wood packaging	10	85	5	140

DECLARATION OF SVHC

The product does not contain materials listed in the "Candidate list of Substances of Very High Concern for authorization".

REFERENCES

- [1] The NMD "Bepalingsmethode Milieuprestatie Bouwwerken" (Environmental Performance Assessment Method for Construction Works) (version 1.2, January 2025) and the NMD-Verification protocol (version 2.0, July 2025).
- [2] NEN-EN 15804 Duurzaamheid van bouwwerken - Milieuverklaringen van producten - Basisregels voor de productgroep bouwproducten;
- [3] ISO, 2006. "Environmental management. Life cycle assessment - Principles and framework". ISO 14040:2006;
- [4] ISO, 2006. "Environmental management. Life cycle assessment – Requirements and Guidelines". ISO 14044:2006;
- [5] ISO, 2000. "Environmental labels and declarations – Type III environmental declarations". ISO/TR 14025:2000.