

ENVIRONMENTAL PRODUCT DECLARATION

According to ISO 14025 and EN 15804



STEEL FABRIC FOR REINFORCEMENT OF CONCRETE

COMPANY INFORMATION / DECLARATION OWNER

Manufacturer: Van Merksteijn Steel-Netherlands
b.v.
Production Location: Van Merksteijn Steel Netherlands
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EPD INFORMATION

Calculation number: EPD-NIBE-20200618-7308
Date of issue: 04-03-2021
End of validity: 04-03-2026
Version NIBE's EPD Application: v2.0
Version database: v3.00 (2021-01-13)
PCR: NMD Determination method
Environmental performance
Construction works v1.0 July 2020

VERIFICATION OF THE DECLARATION

CEN standard EN 15804:2012 serves as the core PCR
Independent verification of the declaration, according to EN ISO
14025:2010. Internal External

See verification statement.

Third party verifier: Rene Kraaijenbrink, LBP Sigh

DECLARED UNIT

Unit: ton (ton)

SCOPE OF DECLARATION

A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
X	X	X	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND

(X = included, MND = module not declared)

PRODUCT DESCRIPTION

Steel Fabric for Reinforcement of Concrete is used in the construction sector for reinforcing of concrete. Without reinforcement, concrete is poorly resistant to tensile forces that are common in buildings and other structures. The mesh is prefabricated and the concrete is poured over during construction.

DESCRIPTION OF THE MANUFACTURING PROCESS

The raw material (wire rod), which is largely produced from scrap (82% in 2019), is supplied by ship, train and occasionally by truck. The raw material is stored at various places on site before it is processed on wire drawing- and stretching- machines. While drawing the wire, the mill scale is stripped from wire rod, adjusted to thickness (from 5 to 20 mm), provided with its profile and the wire is given the correct properties concerning physical values. The mill scale is disposed as waste, mainly iron oxide, and is recycled. The reinforcement mesh is welded from ribbed wire on welding lines. Longitudinal and transverse wires are welded together by means of current (spot resistance welding). No other additives or raw materials are added. A large number of articles are produced en kept in stock. They can be stored before they are transported to the customers. The articles do not contain any packaging materials other than 100% recyclable steel wire.

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RESULTS

Impact category	Unit	A1	A2	A3	Total
ADPE	Kg Sb	1.21E-3	7.08E-5	1.78E-4	1.46E-3
ADPF	Kg Sb	5.78E+0	6.19E-1	2.43E+0	8.83E+0
GWP	Kg CO2 Equiv.	7.75E+2	8.92E+1	3.21E+2	1.19E+3
ODP	Kg CFC-11 Equiv.	5.64E-5	1.43E-5	2.28E-5	9.35E-5
POCP	Kg Ethene Equiv.	8.52E-1	8.24E-2	3.87E-1	1.32E+0
AP	Kg SO2 Equiv.	3.36E+0	1.43E+0	1.15E+0	5.94E+0
EP	Kg PO43- Equiv.	4.49E-1	1.48E-1	1.53E-1	7.50E-1
HTP	kg 1.4 DB	4.90E+2	3.82E+1	1.13E+2	6.42E+2
FAETP	kg 1.4 DB	1.49E+1	7.26E-1	5.63E+0	2.13E+1
MAETP	kg 1.4 DB	3.04E+4	3.22E+3	1.10E+4	4.46E+4
TETP	kg 1.4 DB	5.10E+1	1.32E-1	1.13E+0	5.22E+1
AP	mol H+ eqv.	4.17E+0	1.77E+0	1.42E+0	7.36E+0
GWP-total	kg CO2 eqv.	8.04E+2	9.02E+1	3.30E+2	1.22E+3
GWP-b	kg CO2 eqv.	-9.62E-1	1.21E-1	3.48E-1	-4.94E-1
GWP-f	kg CO2 eqv.	8.04E+2	9.00E+1	3.30E+2	1.22E+3
GWP-luluc	kg CO2 eqv.	8.19E-1	5.88E-2	2.52E-1	1.13E+0
ETP-fw	CTUe	1.73E+4	9.16E+2	5.90E+3	2.41E+4
PM	disease incidence	7.98E-5	3.57E-6	2.04E-5	1.04E-4
EP-m	kg N eqv.	7.57E-1	3.82E-1	2.55E-1	1.39E+0
EP-fw	kg PO4 eqv.	4.48E-2	1.83E-3	1.49E-2	6.15E-2
EP-T	mol N eqv.	9.52E+0	4.31E+0	3.21E+0	1.70E+1
HTP-c	CTUh	9.16E-6	3.42E-8	1.07E-6	1.03E-5
HTP-nc	CTUh	2.54E-4	7.90E-7	9.44E-6	2.64E-4
IR	kBq U235 eqv.	2.57E+1	5.90E+0	1.12E+1	4.28E+1
SQP	Pt	2.74E+3	4.22E+2	7.27E+2	3.88E+3
ODP	kg CFC 11 eqv.	5.86E-5	1.77E-5	2.43E-5	1.01E-4
POCP	kg NMVOC eqv.	3.46E+0	1.13E+0	1.41E+0	6.01E+0
ADP-f	MJ	1.01E+4	1.30E+3	4.32E+3	1.58E+4
ADP-mm	kg Sb-eqv.	1.21E-3	7.08E-5	1.78E-4	1.46E-3
WDP	m3 world eqv.	3.17E+2	9.49E+0	3.62E+2	6.89E+2
Parameter	Unit	A1	A2	A3	Total
PERE	MJ	5.74E+2	3.33E+1	2.46E+2	8.53E+2
PERM	MJ	0.00E+0	0.00E+0	0.00E+0	0.00E+0
PERT	MJ	5.74E+2	3.33E+1	2.46E+2	8.53E+2
PENRE	MJ	1.09E+4	1.38E+3	4.64E+3	1.69E+4
PENRM	MJ	0.00E+0	0.00E+0	0.00E+0	0.00E+0
PENRT	MJ	1.09E+4	1.38E+3	4.64E+3	1.69E+4
SM	Kg	8.19E+2	0.00E+0	1.02E+1	8.29E+2
RSF	MJ	0.00E+0	0.00E+0	0.00E+0	0.00E+0
NRSF	MJ	0.00E+0	0.00E+0	0.00E+0	0.00E+0
FW	M3	8.39E+0	3.03E-1	9.08E+0	1.78E+1
HWD	Kg	4.28E-2	8.76E-4	1.36E-2	5.73E-2
NHWD	Kg	1.86E+2	1.29E+1	6.15E+1	2.60E+2
RWD	Kg	2.53E-2	8.50E-3	1.05E-2	4.43E-2
CRU	Kg	0.00E+0	0.00E+0	0.00E+0	0.00E+0
MFR	Kg	0.00E+0	0.00E+0	1.24E+1	1.24E+1
MER	Kg	0.00E+0	0.00E+0	0.00E+0	0.00E+0
EE	MJ	0.00E+0	0.00E+0	0.00E+0	0.00E+0
EET	MJ	0.00E+0	0.00E+0	0.00E+0	0.00E+0
EEE	MJ	0.00E+0	0.00E+0	0.00E+0	0.00E+0
SP	s€	s€ 109,52	s€ 15,57	s€ 34,69	s€ 159,78

Impact categories: ADPE=Depletion of abiotic resources-elements | ADPF=Depletion of abiotic resources-fossil fuels | GWP=Global warming | ODP=Ozone layer depletion | POCP=Photochemical oxidants creation | AP=Acidification of soil and water | EP=Eutrophication | HTP=Human toxicity | FAETP=Ecotoxicity, fresh water | MAETP=Ecotoxicity, marine water (MAETP) | TETP=Ecotoxicity, terrestrial | AP=Acidification (AP) | GWP-total=Global warming potential (GWP-total) | GWP-b=Global warming potential - Biogenic (GWP-b) | GWP-f=Global warming potential - Fossil (GWP-f) | GWP-luluc=Global warming potential - Land use and land use change (GWP-luluc) | ETP-fw=Ecotoxicity, freshwater (ETP-fw) | PM=Particulate Matter (PM) | EP-m=Eutrophication marine (EP-m) | EP-fw=Eutrophication, freshwater (EP-fw) | EP-T=Eutrophication, terrestrial (EP-T) | HTP-c=Human toxicity, cancer (HTP-c) | HTP-nc=Human toxicity, non-cancer (HTP-nc) | IR=Ionising radiation, human health (IR) | SQP=Land use (SQP) | ODP=Ozone depletion (ODP) | POCP=Photochemical ozone formation - human health (POCP) | ADP-f=Resource use, fossils (ADP-f) | ADP-mm=Resource use, minerals and metals (ADP-mm) | WDP=Water use (WDP)

Parameters: PERE=renewable primary energy ex. raw materials | PERM=renewable primary energy used as raw materials | PERT=renewable primary energy total | PENRE=non-renewable primary energy ex. raw materials | PENRM=non-renewable primary energy used as raw materials | PENRT=non-renewable primary energy total | SM=use of secondary material | RSF=use of renewable secondary fuels | NRSF=use of non-renewable secondary fuels | FW=use of net fresh water | HWD=hazardous waste disposed | NHWD=non hazardous waste disposed | RWD=radioactive waste disposed | CRU=Components for re-use | MFR=Materials for recycling | MER=Materials for energy recovery | EE=Exported energy | EET=Exported Energy Thermic | EEE=Exported Energy Electric

ADDITIONAL INFORMATION

Allocation

There is no allocation applied for the environmental profiles / datasets used in this LCA.