



**Environmental  
Product  
Declaration**

According to EN15804+A2 (+indicators A1)



This declaration is for:  
**Prestressing steel (strand and wire) for  
application in prestressed concrete.**

Provided by:  
**Nedri Spanstaal BV**



**NEDRI SPANSTAAL BV, STRETCHING THE BOUNDARIES**

program operator  
**Stichting MRPI®**  
publisher  
**Stichting MRPI®**  
[www.mrpi.nl](http://www.mrpi.nl)

MRPI® registration  
**1.1.00653.2024**  
date of first issue  
**17-1-2021**  
date of this issue  
**10-7- 2024**  
expiry date  
**10-7- 2029**



**COMPANY INFORMATION**



Groot Egtenrayseweg 13  
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<https://www.nedri.nl>

**PRODUCT**

Prestressing steel (strand and wire) for application in prestressed concrete.

**DECLARED UNIT/FUNCTIONAL UNIT**

1 ton of prestressing steel (strand and wire).

**DESCRIPTION OF PRODUCT**

Prestressing steel with 22.93% primary steel and 77,07% secondary steel for application in prestressed concrete. The products in this EPD include PC-wire (smooth, profiled and threaded products) and PC-strand.

**MRPI® REGISTRATION**

1.1.00653.2024

**DATE OF ISSUE**

10-7- 2024

**EXPIRY DATE**

10-7- 2029

**SCOPE OF DECLARATION**

This MRPI®-EPD certificate is verified by Anne Kees Jeeninga, Advieslab v.o.f.. The LCA study has been done by Chantal Houben, SGS Intron. The certificate is based on an LCA-dossier according to EN15804+A2 (+indicators A1). It is verified according to the 'MRPI®-EPD verification protocol November 2020.v4.0'. EPD's 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.

**VISUAL PRODUCT**

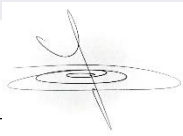


**MORE INFORMATION**

<https://www.nedri.nl>

**PROGRAM OPERATOR**

Stichting MRPI®  
Kingsfordweg 151  
1043 GR  
Amsterdam

<b>DEMONSTRATION OF VERIFICATION</b>	
CEN standard EN15804 serves as the core PCR(a)	
Independent verification of the declaration an data according to EN15804+A2 (+indicators A1)	
internal:	external: x
Third party verifier: Anne Kees Jeeninga, Advieslab v.o.f.	
	
[a] PCR = Product Category Rules	

Ing. L. L. Oosterveen MSc. MBA  
Managing Director MRPI

### DETAILED PRODUCT DESCRIPTION

Prestressing steel is produced from steel wire rod. The wire rod is pickled, rinsed and pretreated for further processing. PC- wire is produced by drawing the wire rod into smaller dimensions. For some applications the PC-wires are profiled and / or threaded. PC- wire is produced on coils or cut to size.

PC-strand is produced by intertwining multiple wires and rolled into coils.

The production figures (A1-3) include the use of packaging materials. The waste treatment of packaging materials is not included and should be added by the user of this EPD (if applicable).

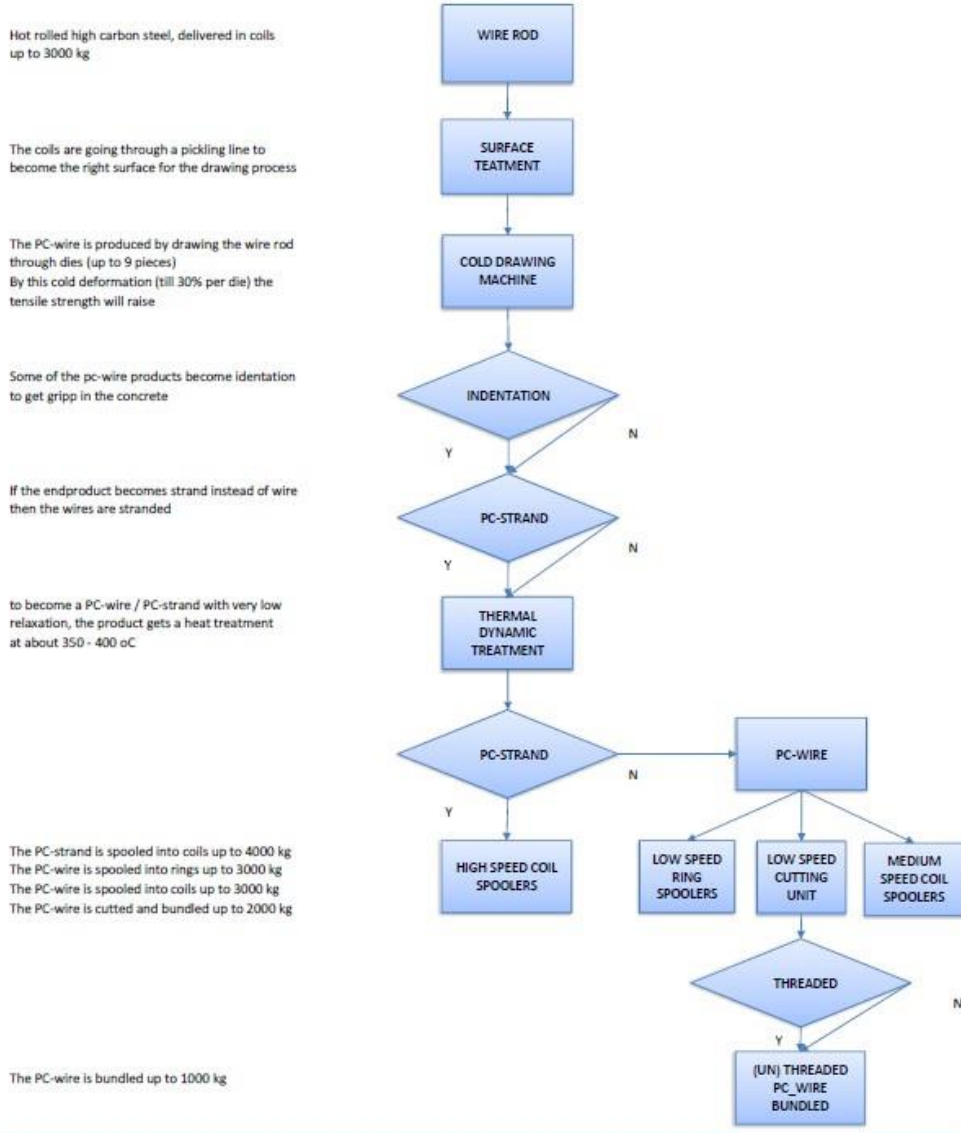
Composition	Amount per ton prestressing steel
Steel, unalloyed	1000 kg

Use of packaging materials	Amount per ton prestressing steel
Packaging, steel wire	1.5 kg
Packaging, softwood	2.7 kg
Packaging, PP labels	0.01 kg

PRODUCT STAGE			CONSTRUCTION PROCESS STAGE		USER 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

PRODUCTION OF PRESTRESSED STEEL



NEDRI SPANSTAAL B.V. STRETCHING THE BOUNDARIES

**REPRESENTATIVENESS**

This EPD is representative for PC-wire and PC-strand (smooth surfaced, profiled and threaded) produced by Nedri Spanstaal BV in Venlo.

Plastic (HDPE) coated strand is excluded from this EPD.

**ENVIRONMENT IMPACT per functional unit or declared unit (core 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.	9,43 E-03	8,21 E-04	1,27 E-03	1,15 E-02	0,00 E+00	0,00 E+00	0,00 E+00	ND	ND	ND	ND	ND	ND	0,00 E+00	1,70 E-04	1,30 E-03	2,41 E-06	-1,73 E-04
ADPF	MJ	1,63 E+04	5,64 E+02	3,45 E+03	2,03 E+04	0,00 E+00	0,00 E+00	0,00 E+00	ND	ND	ND	ND	ND	ND	0,00 E+00	1,01 E+02	3,25 E+02	7,36 E+00	-1,78 E+03
GWP	kg CO2 eq.	9,52 E+02	3,79 E+01	2,54 E+02	1,24 E+03	0,00 E+00	0,00 E+00	0,00 E+00	ND	ND	ND	ND	ND	ND	0,00 E+00	6,53 E+00	2,32 E+01	2,58 E-01	-2,38 E+02
ODP	Kg CFC11 eq.	1,09 E-04	6,68 E-06	1,78 E-05	1,34 E-04	0,00 E+00	0,00 E+00	0,00 E+00	ND	ND	ND	ND	ND	ND	0,00 E+00	1,21 E-06	2,90 E-06	8,61 E-08	-8,30 E-06
POCP	Kg ethene eq.	7,19 E-01	2,27 E-02	2,01 E-02	7,62 E-01	0,00 E+00	0,00 E+00	0,00 E+00	ND	ND	ND	ND	ND	ND	0,00 E+00	3,92 E-03	2,04 E-02	2,75 E-04	-5,18 E-01
AP	kg SO2 eq.	3,35 E+00	1,91 E-01	4,54 E-01	4,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	ND	ND	ND	ND	ND	ND	0,00 E+00	2,81 E-02	2,28 E-01	1,89 E-03	-8,06 E-01
EP	kg (PO4) 3- eq.	4,95 E-01	4,00 E-02	9,73 E-02	6,33 E-01	0,00 E+00	0,00 E+00	0,00 E+00	ND	ND	ND	ND	ND	ND	0,00 E+00	5,61 E-03	2,91 E-02	3,65 E-04	-9,57 E-02

Toxicity indicators for Dutch market

HTP	kg DCB-Eq	4,66 E+02	1,44 E+01	2,33 E+01	5,03 E+02	0,00 E+00	0,00 E+00	0,00 E+00	ND	ND	ND	ND	ND	ND	0,00 E+00	2,79 E+00	2,81 E+01	1,17 E-01	-1,49 E+02
FAETP	kg DCB-Eq	2,24 E+01	4,12 E-01	7,98 E+00	3,08 E+01	0,00 E+00	0,00 E+00	0,00 E+00	ND	ND	ND	ND	ND	ND	0,00 E+00	8,18 E-02	5,23 E-01	2,77 E-03	1,85 E+00
MAETP	kg DCB-Eq	3,80 E+04	1,45 E+03	4,73 E+03	4,42 E+04	0,00 E+00	0,00 E+00	0,00 E+00	ND	ND	ND	ND	ND	ND	0,00 E+00	2,92 E+02	2,28 E+03	9,91 E+00	1,54 E+03
TETP	kg DCB-Eq	6,83 E+01	5,39 E-02	3,92 E+00	7,22 E+01	0,00 E+00	0,00 E+00	0,00 E+00	ND	ND	ND	ND	ND	ND	0,00 E+00	9,89 E-03	8,75 E-02	2,93 E-04	1,24 E+01
ECI	euro	1,19 E+02	4,57 E+00	1,88 E+01	1,42 E+02	0,00 E+00	0,00 E+00	0,00 E+00	ND	ND	ND	ND	ND	ND	0,00 E+00	7,88 E-01	5,17 E+00	3,65 E-02	-2,97 E+01
ADPF	kg Sb eq.	7,81 E+00	2,67 E-01	1,90 E+00	9,97 E+00	0,00 E+00	0,00 E+00	0,00 E+00	ND	ND	ND	ND	ND	ND	0,00 E+00	4,79 E-02	1,52 E-01	3,52 E-03	-1,47 E+00

- 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 expressed in [kg Sb-eq.]

**ENVIRONMENT 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.	9,81 E+02	3,83 E+01	2,58 E+02	1,28 E+03	0,00 E+00	0,00 E+00	0,00 E+00	ND	ND	ND	ND	ND	ND	0,00 E+00	6,59 E+00	2,21 E+01	2,64 E-01	-2,53 E+02
GWP-fossil	kg CO2 eq.	9,72 E+02	3,82 E+01	2,56 E+02	1,27 E+03	0,00 E+00	0,00 E+00	0,00 E+00	ND	ND	ND	ND	ND	ND	0,00 E+00	6,58 E+00	2,34 E+01	2,63 E-01	-2,56 E+02
GWP-biogenic	kg CO2 eq.	7,46 E+00	3,76 E-02	1,50 E+00	9,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	ND	ND	ND	ND	ND	ND	0,00 E+00	4,00 E-03	-1,34 E+00	5,22 E-04	2,66 E+00
GWP-luluc	kg CO2 eq.	8,83 E-01	2,80 E-02	7,95 E-01	1,71 E+00	0,00 E+00	0,00 E+00	0,00 E+00	ND	ND	ND	ND	ND	ND	0,00 E+00	2,33 E-03	2,62 E-02	7,34 E-05	1,89 E-01
ODP	kg CFC11 eq.	1,12 E-04	8,34 E-06	1,86 E-05	1,39 E-04	0,00 E+00	0,00 E+00	0,00 E+00	ND	ND	ND	ND	ND	ND	0,00 E+00	1,52 E-06	3,37 E-06	1,08 E-07	-6,24 E-06
AP	mol H+ eq.	4,15 E+00	2,60 E-01	5,77 E-01	4,98 E+00	0,00 E+00	0,00 E+00	0,00 E+00	ND	ND	ND	ND	ND	ND	0,00 E+00	3,75 E-02	2,84 E-01	2,50 E-03	-9,86 E-01
EP-freshwater	kg PO4 eq.	4,69 E-02	3,57 E-04	1,29 E-02	6,02 E-02	0,00 E+00	0,00 E+00	0,00 E+00	ND	ND	ND	ND	ND	ND	0,00 E+00	5,42 E-05	1,60 E-03	2,95 E-06	-9,02 E-03
EP-marine	kg N eq.	8,74 E-01	1,00 E-01	1,37 E-01	1,11 E+00	0,00 E+00	0,00 E+00	0,00 E+00	ND	ND	ND	ND	ND	ND	0,00 E+00	1,34 E-02	6,27 E-02	8,60 E-04	-1,83 E-01
EP-terrestrial	mol N eq.	9,79 E+00	1,10 E+00	1,56 E+00	1,25 E+01	0,00 E+00	0,00 E+00	0,00 E+00	ND	ND	ND	ND	ND	ND	0,00 E+00	1,48 E-01	7,27 E-01	9,48 E-03	-2,13 E+00
POCP	kg NMVOC eq.	3,43 E+00	3,02 E-01	3,56 E-01	4,08 E+00	0,00 E+00	0,00 E+00	0,00 E+00	ND	ND	ND	ND	ND	ND	0,00 E+00	4,23 E-02	1,99 E-01	2,75 E-03	-1,45 E+00
ADP-minerals & metals	kg Sb eq.	9,43 E-03	8,21 E-04	1,27 E-03	1,15 E-02	0,00 E+00	0,00 E+00	0,00 E+00	ND	ND	ND	ND	ND	ND	0,00 E+00	1,70 E-04	1,30 E-03	2,41 E-06	-1,73 E-04
ADP-fossil	MJ, net calorific value	1,63 E+04	5,64 E+02	3,45 E+03	2,03 E+04	0,00 E+00	0,00 E+00	0,00 E+00	ND	ND	ND	ND	ND	ND	0,00 E+00	1,01 E+02	3,25 E+02	7,36 E+00	-1,78 E+03
WDP	m3 world eq. Deprived	5,52 E+02	1,82 E+00	2,81 E+01	5,82 E+02	0,00 E+00	0,00 E+00	0,00 E+00	ND	ND	ND	ND	ND	ND	0,00 E+00	3,10 E-01	3,27 E+00	3,30 E-01	-4,87 E+01

- GWP-total = Global Warming Potential total
- 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 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 [2]
- ADP-fossil = Abiotic Depletion for fossil resources potential [2]
- WDP = Water (user) deprivation potential, deprivation-weighted water consumption [2]

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.

**ENVIRONMENT 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	1,04 E-04	2,79 E-06	2,20 E-06	1,09 E-04	0,00 E+00	0,00 E+00	0,00 E+00	ND	ND	ND	ND	ND	ND	0,00 E+00	5,94 E-07	3,57 E-06	4,85 E-08	-1,48 E-05
IRP	kBq U235 eq.	6,70 E+01	2,49 E+00	7,48 E+00	7,70 E+01	0,00 E+00	0,00 E+00	0,00 E+00	ND	ND	ND	ND	ND	ND	0,00 E+00	4,42 E-01	1,62 E+00	3,02 E-02	4,37 E+00
ETP-fw	CTUe	1,92 E+04	4,57 E+02	2,81 E+03	2,25 E+04	0,00 E+00	0,00 E+00	0,00 E+00	ND	ND	ND	ND	ND	ND	0,00 E+00	8,20 E+01	1,40 E+03	4,77 E+00	-8,56 E+03
HTP-c	CTUh	1,15 E-05	1,72 E-08	5,25 E-07	1,21 E-05	0,00 E+00	0,00 E+00	0,00 E+00	ND	ND	ND	ND	ND	ND	0,00 E+00	2,92 E-09	3,41 E-08	1,10 E-10	-3,27 E-08
HTP-nc	CTUh	3,31 E-04	4,98 E-07	6,24 E-06	3,38 E-04	0,00 E+00	0,00 E+00	0,00 E+00	ND	ND	ND	ND	ND	ND	0,00 E+00	9,78 E-08	1,62 E-06	3,39 E-09	4,95 E-05
SQP	----	3,76 E+03	4,73 E+02	1,52 E+03	5,75 E+03	0,00 E+00	0,00 E+00	0,00 E+00	ND	ND	ND	ND	ND	ND	0,00 E+00	8,64 E+01	6,54 E+02	1,54 E+01	-3,94 E+02

- 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 / A2)**

	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
HWD	kg	1,38 E-01	1,45 E-03	1,13 E-03	1,40 E-01	0,00 E+00	0,00 E+00	0,00 E+00	ND	ND	ND	ND	ND	ND	0,00 E+00	2,58 E-04	9,80 E-04	1,10 E-05	-3,06 E-02
NHWD	kg	3,69 E+02	2,78 E+01	5,94 E+01	4,56 E+02	0,00 E+00	0,00 E+00	0,00 E+00	ND	ND	ND	ND	ND	ND	0,00 E+00	6,26 E+00	9,50 E+00	5,00 E+01	-2,50 E+01
RWD	kg	6,14 E-02	3,82 E-03	7,64 E-03	7,29 E-02	0,00 E+00	0,00 E+00	0,00 E+00	ND	ND	ND	ND	ND	ND	0,00 E+00	6,87 E-04	1,92 E-03	4,83 E-05	1,51 E-03
CRU	kg	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	ND	ND	ND	ND	ND	ND	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00
MFR	kg	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	ND	ND	ND	ND	ND	ND	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00
MER	kg	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	ND	ND	ND	ND	ND	ND	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00
EEE	MJ	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	ND	ND	ND	ND	ND	ND	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00
ETE	MJ	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	ND	ND	ND	ND	ND	ND	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+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 / A2)**

	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
PERE	MJ	1,32 E+03	9,49 E+00	4,05 E+02	1,73 E+03	0,00 E+00	0,00 E+00	0,00 E+00	INA	INA	INA	INA	INA	INA	0,00 E+00	1,45 E+00	5,10 E+01	5,95 E-02	5,18 E+01
PERM	MJ	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	INA	INA	INA	INA	INA	INA	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00
PERT	MJ	1,32 E+03	9,49 E+00	4,05 E+02	1,73 E+03	0,00 E+00	0,00 E+00	0,00 E+00	INA	INA	INA	INA	INA	INA	0,00 E+00	1,45 E+00	5,10 E+01	5,95 E-02	5,18 E+01
PENRE	MJ	1,75 E+04	5,98 E+02	3,72 E+03	2,18 E+04	0,00 E+00	0,00 E+00	0,00 E+00	INA	INA	INA	INA	INA	INA	0,00 E+00	1,07 E+02	3,44 E+02	7,82 E+00	-1,85 E+03
PENRM	MJ	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	INA	INA	INA	INA	INA	INA	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00
PENRT	MJ	1,75 E+04	5,98 E+02	3,72 E+03	2,18 E+04	0,00 E+00	0,00 E+00	0,00 E+00	INA	INA	INA	INA	INA	INA	0,00 E+00	1,07 E+02	3,44 E+02	7,82 E+00	-1,85 E+03
SM	kg	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	INA	INA	INA	INA	INA	INA	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00
RSF	MJ	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	INA	INA	INA	INA	INA	INA	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00
NRSF	MJ	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	INA	INA	INA	INA	INA	INA	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00
FW	m3	1,71 E+01	7,26 E-02	1,97 E+00	1,92 E+01	0,00 E+00	0,00 E+00	0,00 E+00	INA	INA	INA	INA	INA	INA	0,00 E+00	1,14 E-02	1,54 E-01	7,86 E-03	-9,24 E-01

- 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
- NRSF = Use of non-renewable secondary fuels
- FW = Use of net fresh water

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

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

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

### **CALCULATION RULES**

Primary data at the production locations of Nedri Spanstaal where collected in 2021 from base year 2020. The origin of the steel wire rod is based on 2021 production as Nedri Spanstaal considers this approach more representative. This data was then adapted with data from 2023 to reflect current production processes.

No materials or processes have been excluded from the study (cut-of rule is well below 1%).

The LCA calculations are made using the Ecoinvent database v3.6. Infrastructure processes in Ecoinvent processes have been included, long term emissions in Ecoinvent processes have been excluded from the LCA calculations.

This EPD only includes the environmental data directly related to the prestressing steel. The modules: C1, C2 and the waste treatment of packaging materials depend on the application of the steel.

### **SCENARIOS AND ADDITIONAL TECHNICAL INFORMATION**

Demolition (C1) depends on the product in which prestressing steel is used. The demolition of the prestressing steel are therefore included in the product in which the prestressing steel is used. That is why this module does not include a demolition process for the prestressing steel. Transport to a waste processing facility (C2) depends on the product in which prestressing steel is used. Therefore, a standard transport distance of 50 km to a waste treatment plant is assumed.

End of life waste scenario's are depended on the product in which prestressing steel is used. However, a waste treatment scenario is included in the LCA to comply with EN 15804+A2. The user of the EPD should assess whether this scenario applies to the product for which the data on this EPD is used and, if necessary, calculate with another waste treatment scenario. Waste processing of prestressing steel has been included on the basis of the flat-rate waste processing scenario for reinforcing steel from the Determination Method, namely 95% recycling and 5% landfill.

22.93% of the prestressing steel in this study consists of primary steel. 95% of the primary steel is recycled and are saved in module D. According to the Dutch Assessment method, the secondary steel (77.07%) that is lost with disposal (5%) should be compensated for. Do note that the extra production of steel to compensate for the loss of secondary steel is not necessary for other European EPS's.

### **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 1.0.

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

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

SGS INTRON report: A125760/R20210326, november 2021

### **REMARKS**

None