

Environmental Product Declaration

In accordance with ISO 14025:2006 and EN 15804:2012+A2:2019/AC:2021 for:

Sockets and Nipples



Nords International AB



Programme	The International EPD System, www.environdec.com
Programme operator	EPD International AB
Type of EPD	EPD of multiple products from a company, based on the average results of the product group
EPD registration number	EPD-IES-0024807:001
Version date	2026-09-24
Validity date	2031-09-24

An EPD should provide current information and may be updated or unpublished if conditions change. To find the latest version of the EPD and to confirm its validity, see www.environdec.com.

Included products can be viewed on pages 4-5

General Information

Programme information

Programme	The International EPD System
Address	EPD International AB Box 210 60 SE-100 31 Stockholm Sweden
Website	www.environdec.com
E-mail	support@environdec.com

PCR and verification

Product Category Rules (PCR)	CEN standard EN 15804 serves as the Core Product Category Rules (PCR) PCR: Construction products, PCR 2019:14 v 2.0.1 (EN 15804:A2) PCR review was conducted by the Technical Committee of the International EPD System. See https://environdec.com/about-us/the-international-epd-system-about-the-system for a list of members. Review chair: Rob Rouwette (chair), Noa Meron (co-chair).. The review panel may be contacted via the Secretariat www.environdec.com/contact.
Third-party verification:	External and independent "third-party" verification of the declaration and data, according to ISO14025:2006, via EPD verification through: ☒ Individual EPD verification without a pre-verified LCA/EPD tool Third-party verifier: Kristin Fransson, RISE Research Institute of Sweden Approved by: The International EPD System
Procedure for follow-up of data during EPD validity involves third party verifier: ☐ Yes ☒ No	

Ownership and limitations on use of EPD

The EPD owner has the sole ownership, liability and responsibility for the EPD. EPDs within the same product category but published in different EPD programmes, may not be comparable. For two EPDs to be comparable, they shall be based on the same PCR (including the same first-digit version number) or be based on fully aligned PCRs or versions of PCRs; cover products with identical functions, technical performances and use (e.g. identical declared/functional units); have identical scope in terms of included life-cycle stages (unless the excluded life-cycle stage is demonstrated to be insignificant); apply identical impact assessment methods (including the same version of characterisation factors); and be valid at the time of comparison.

Information about EPD owner

Owner details

EPD owner	Nords International AB
Contact	Simon Hedberg
Contact details	simon.hedberg@nordsinternational.com
Address	Prostgårdsvägen 2 655 60 Molkom Sweden
Description of the organisation	Nords Group consists of the mother company Nords International AB and the two subsidiaries SH-Teknor Oy and Nords AS. The company is a leading manufacturer of stainless-steel components with three manufacturing sites located in Molkom (Sweden), Helsinki (Finland) and Saue (Estonia)
Product-related or management system-related certifications:	ISO 9001- and 14001-certificates, AD 2000-Merkblatt W0, PED 2014/68/EU
Life Cycle Assessment (LCA)	Viktor Hakkarainen & Albin Sumukari, CHM Analytics AB

Product Information

Product details

Product name(s)	Sockets and Nipples
Product description:	Stainless steel sockets and nipples for pipefitting. The products included in the EPD varies in what % becomes spillage during production. The worst case indicators are based on the highest spillage % from all produced products.
UN CPC code	41293 - Tube or pipe fittings
Name and location of production site(s):	Name of plant: Nords AS Saue Location: Tule 23a, 76505 Saue, Estonia
Technical or actual lifespan	N/A

Product image



Manufacturing process

A stainless steel rod or pipe is loaded into a CNC lathe where it is milled to specified outer diameter, inner and/or outer threads are cut and the inside bored out

Product Table

Product Name	Mass in kg
Pipe Worst Case	1,000
Rod Worst Case	1,000
Sockets and Nipples	1,000
R-201 1/8" L=17 EN 1.4404	0,015
R-201 1/4" L=25 EN 1.4404	0,029
R-201 3/8" L=26 EN 1.4404	0,040
R-201 1/2" L=34 EN 1.4404	0,065
R-201 3/4" L=36 EN 1.4404	0,090
R-201 1" L=43 EN 1.4404	0,140
R-201 1 1/4" L=48 EN 1.4404	0,210
R-201 1 1/2" L=48 EN 1.4404	0,250
R-201 2" L=56 EN 1.4404	0,343
R-203 1/8" L=10 EN 1.4404	0,006
R-203 1/4" L=11 EN 1.4404	0,010
R-203 3/8" L=12 EN 1.4404	0,020
R-203 1/2" L=15 EN 1.4404	0,035
R-203 3/4" L=17 EN 1.4404	0,050
R-203 1" L=19,5 EN 1.4404	0,072
R-203 1 1/4" L=22 EN 1.4404	0,100
R-203 1 1/2" L=22 EN 1.4404	0,130
R-203 2" L=26 EN 1.4404	0,190
R-216 1/8" EN 1.4404	0,010
R-216 1/4" EN 1.4404	0,015
R-216 3/8" EN 1.4404	0,020
R-216 1/2" EN 1.4404	0,030
R-216 3/4" EN 1.4404	0,040
R-216 1" EN 1.4404	0,060
R-216 1 1/4" EN 1.4404	0,095
R-216 1 1/2" EN 1.4404	0,110
R-216 2" EN 1.4404	0,145

Product Name	Mass in kg
R-208 1/8" L=30 EN 1.4404	0,010
R-208 1/4" L=30 EN 1.4404	0,015
R-208 3/8" L=30 EN 1.4404	0,020
R-208 1/2" L=35 EN 1.4404	0,035
R-208 3/4" L=40 EN 1.4404	0,050
R-208 1" L=40 EN 1.4404	0,076
R-208 1 1/4" L=50 EN 1.4404	0,135
R-208 1 1/2" L=50 EN 1.4404	0,150
R-208 2" L=55 EN 1.4404	0,230
R-210 1/8" L=40 EN 1.4404	0,015
R-210 1/4" L=40 EN 1.4404	0,020
R-210 3/8" L=40 EN 1.4404	0,030
R-210 1/2" L=60 EN 1.4404	0,065
R-210 3/4" L=60 EN 1.4404	0,071
R-210 1" L=60 EN 1.4404	0,120
R-210 1 1/4" L=80 EN 1.4404	0,205
R-210 1 1/2" L=80 EN 1.4404	0,240
R-210 2" L=100 EN 1.4404	0,420

Content declaration

The tables below shows the product and packaging composition per declared unit, including the share of recycled materials. As well as information about SVHC

Product Components	Mass, kg	Post-consumer recycled material, mass-% of products	Biogenic material, mass-% of product	Biogenic material, kg C / declared unit
Metal	1,00E+00	60,77%	0,00%	0,00E+00
Total	1,00E+00	60,77%	0,00%	0,00E+00

Packaging Materials	Mass, kg	Mass-% (versus the product)	Biogenic material kg C/declared unit
Paper	1,08E-02	1,08%	4,32E-03
Engineered Wood Products	3,30E-03	0,33%	1,94E-03
Plastic	3,00E-04	0,03%	0,00E+00
Wood	1,90E-03	0,19%	8,46E-04
Total	1,63E-02	1,63%	7,11E-03

Note: Some totals may not correspond exactly to the sum of separate figures due to rounding.

Dangerous substances from the candidate list of SVHC for Authorisation	EC No.	CAS No.	Weight-% per functional or declared unit
No hazardous materials			

At the date of issue of this declaration, there is no “Substance of Very High Concern” (SVHC) in concentration above 0.1% by weight, and neither does the packaging, following the European REACH regulation (Registration, Evaluation, Authorization and Restriction of Chemicals)

LCA information

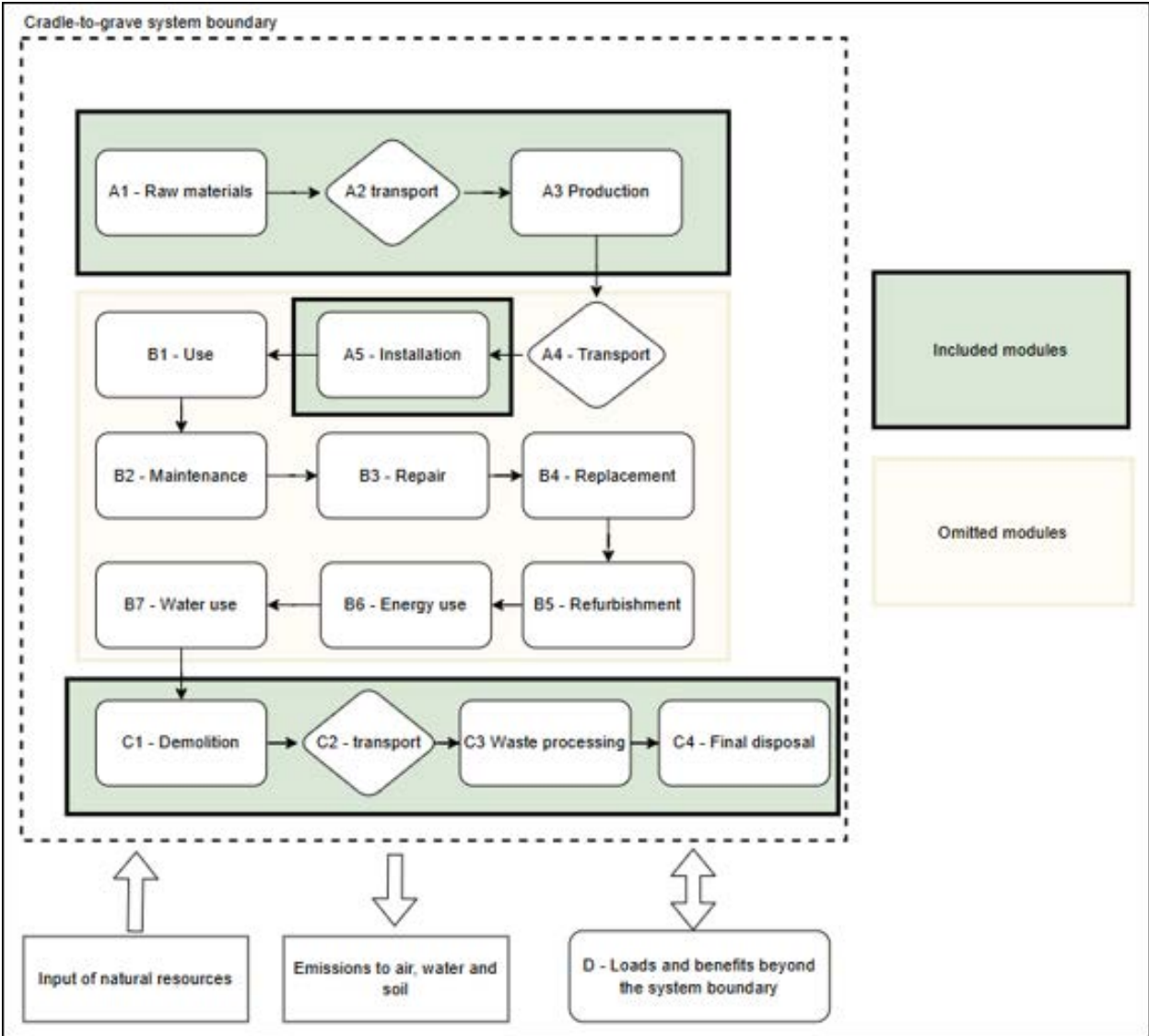
Field	Value
Declared Unit	one kg
Conversion Factor to Mass	1
Time Representativeness	Data obtained refers to the year 2024
Geographical Scope	Europe
System Boundary	The system boundaries are set to be "cradle to gate with options" with the modules A1-A3, A5, C1, C2, C3, C4, D
Excluded Modules	A4, B1, B2, B3, B4, B5, B6, B7
Database(s) and LCA Software Used	Ecoinvent 3.11 and EandoX version 1.01
Reference Service Life (RSL)	N/A
Characterisation Factors Used	The characterization factors used in this study refer to PCR 2019:14 and EN 15804+A2 (based on EF 3.1).
Allocation Procedures Used	Economic allocation based on product revenue
Cut-off criteria	The cut-off criteria are in accordance with the EN 15804 standard, meaning that max 1% of the renewable and non-renewable primary energy use and max 1% of the total mass input of a specific unit process are allowed to be cut-off (excluded). Particular care should be taken to include material and energy flows known to have the potential to cause significant emissions into air and water or soil related to the environmental indicators of EN 15804+A2.

Energy Breakdown

Electricity used in the manufacturing

Energy Source	Data Source	Year	Geography	GWP excl. biogenic [kg CO2-eq/kWh]
Estonian renewable energy mix	Ecoinvent 3.11	2024	EE	6,07E-02

System boundary



No image

A1	Raw material supply	This module considers the extraction and processing of all raw materials, energy, and transportation which occur upstream to the studied manufacturing process, including packaging material.
A2	Transport to the manufacturer	The raw materials are transported to the manufacturing site.
A3	Manufacturing	This module includes all resources used to produce and waste produced. This also includes additives and packaging material. Used electricity in A3 is based on contractual mixes.
A4	Transport	Module not declared.
A5	Construction installation	This module covers the management, transport, and treatment of any installation waste or packaging residues at the construction site.
B1-B7	Use stage	Module not declared.
C1	Deconstruction/Demolition	This stage includes the de-construction and/or demolition of the building.
C2	Transport	This stage represents the transport distance to the waste processing facility.
C3	Waste processing	This stage includes any waste treatment needed.
C4	Final disposal	This includes any material that is landfilled.
D	Benefits	Emission credits obtained from energy recovery and/or recycling materials.

System boundaries

Benefits & loads beyond system boundary																			
Product stage				Assembly stage		Use stage							End of life stage						
	Raw material supply			Transport to manufacturer	Manufacturing	Transport to building site	Installation into building	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	Demolition	Transport to waste processing	Waste processing for reuse, recovery, recycling	Disposal	Reuse, recovery, recycling potential
	A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D		
Declared	X	X	X	ND	X	ND	ND	ND	ND	ND	ND	ND	X	X	X	X	X		
Geography	EU	EU	EU	-	EU	-	-	-	-	-	-	-	EU	EU	EU	EU	EU		
Specific data used	34,15%			-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Variation-Products	+39% / -52%			-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Variation-Sites	+0% / -0%			-	-	-	-	-	-	-	-	-	-	-	-	-	-		

X - declared, ND - Not Declared

The results presented for modules A1-A3 alone shall not be used for comparisons unless all relevant life cycle stages, particularly end-of-life (C1-C4), are included. This ensures a more accurate and representative environmental impact assessment over the full product life cycle.

Declaration of data sources, reference years, and share of primary data

Process	Source type	Source	Reference year	Data category	Share of primary data, of GWP-GHG results for A1-A3
Manufacturing of product	Collected data	Ecoinvent 3.11	2024	Primary data, secondary data	34,15%
Transportation of raw materials to manufacturing site	Collected data	Ecoinvent 3.11	2024	Primary data, secondary data	0,00%
Production of raw materials and components	Collected data	ecoinvent 3.11, Ecoinvent 3.11	2024	Secondary data	0,00%
Production of packaging	Collected data	Ecoinvent 3.11, Ecoinvent, CarbonZero	2022-2024	Secondary data	0,00%
Total share of primary data, of GWP-GHG results A1-A3					34,15%

The share of primary data is calculated based on GWP-GHG results. It is a simplified indicator for data quality that supports the use of more primary data, to increase the representativeness of and comparability between EPDs. Note that the indicator does not capture all relevant aspects of data quality and is not comparable across product categories.

Precision: The foreground precision is regarded as high as annual averages have been used.

Completeness: All known flows are accounted or listed in the cut-off.

Representativeness: The data has been chosen to specifically reflect the true conditions; it is not within the scope of the project to verify the upstream value chain but the chosen datasets should reflect this as accurately as possible within the scope of the project.

Consistency: The same methodology has been uniformly used (100% cut-off system library with only economic allocation).

Reproducibility: The LCA is reproducible with all data reported in this report.

Data sources: Data collection method is described in the LCI chapter of the LCA report and all datasets are referenced.

Infrastructure is included in the background secondary data but excluded from foreground data.

End-of-life (C1-C4)

Scenario information	Unit (expressed per functional unit or per declared unit)
C1: Collection process specified by type	1,00E+00 kg demolition/deconstruction of steel, wood and other materials. Energy carrier: Diesel. Quantity: 1,1 kWh/tonne
C2: Waste transport specified by type	1,00E+00 kg materials not to be incinerated transported for 80 km 0,00E+00 kg materials to be incinerated transported for 130 km
C3: Recovery system specified by type	8,50E-01 kg Metal for recycling
C4: Disposal specified by type	1,50E-01 kg Metal for final disposal
Assumptions for scenario development, e.g. transportation	The transportation is modelled with the same specifications as the truck transportation in module A4, except the transportation distance is assumed to be 80 km for materials not to be incinerated and 130 km for materials to be incinerated.

Reuse-Recovery-Recycling-potential (D)

Scenario information
The environmental loads and benefits recorded in Module D are based on the specific quantities of materials defined in the bill of materials. This accounting reflects the product's recovery potential at its end-of-life, where the recycling of materials is assumed to displace the future production of virgin materials, thereby reducing the long-term impact of raw material extraction. Additionally, the incineration of materials facilitate resource efficiency through heat recovery; the resulting exported electricity (EEE) and thermal energy (EET) serve as a credit by reducing the future demand for external energy sources.

Environmental performance

Potential environmental impact – indicators according to EN 15804+A2

The estimated impact results are only relative statements, which do not indicate the endpoints of the impact categories, exceeding threshold values, safety margins and/or risks. The results of the end-of-life stage (modules C1-C4) should be considered when using the results of the product stage (modules A1-A3).

Results per declared unit: one kg								
Indicator	Unit	A1-A3	A5	C1	C2	C3	C4	D
GWP-total	kg CO2 eq	5,54E+00	2,75E-02	3,99E-04	1,52E-02	3,84E-02	9,39E-04	-8,81E-01
GWP-fossil	kg CO2 eq	5,53E+00	1,40E-03	3,99E-04	1,52E-02	2,99E-02	9,39E-04	-8,79E-01
GWP-biogenic	kg CO2 eq	-3,14E-03	2,61E-02	4,43E-08	3,21E-06	8,50E-03	3,23E-07	-1,20E-03
GWP-luluc	kg CO2 eq	1,26E-02	3,36E-07	4,08E-08	5,04E-06	1,94E-05	5,34E-07	-9,81E-04
ODP	kg CFC11 eq	1,90E-07	1,47E-11	5,92E-12	3,32E-10	3,31E-10	2,61E-11	-9,16E-09
AP	mol H+ eq	5,79E-02	5,54E-06	3,56E-06	4,89E-05	1,33E-04	6,57E-06	-5,49E-03
EP-freshwater	kg P eq	5,19E-03	1,78E-07	1,28E-08	1,04E-06	8,81E-06	8,22E-08	-1,23E-03
EP-marine	kg N eq	2,01E-02	2,81E-06	1,66E-06	1,66E-05	8,85E-05	2,52E-06	-1,14E-03
EP-terrestrial	mol N eq	2,25E-01	2,48E-05	1,82E-05	1,79E-04	4,28E-04	2,76E-05	-1,29E-02
POCP	kg NMVOC eq	6,78E-02	7,01E-06	5,43E-06	7,41E-05	1,33E-04	9,95E-06	-3,84E-03
ADP-minerals & metals ¹	kg Sb-Eq	5,29E-04	2,93E-09	1,47E-10	5,13E-08	3,81E-07	1,41E-09	-1,36E-04
ADP-fossil ¹	MJ	9,05E+01	9,81E-03	5,25E-03	2,16E-01	2,81E-01	2,32E-02	-1,31E+01
WDP ¹	m ³	2,41E+00	6,23E-04	1,34E-05	1,16E-03	5,58E-03	1,01E-03	-4,66E-01
Acronyms	GWP-total: Total Global Warming Potential; 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 Exceedance; 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 Exceedance; POCP: Formation potential of tropospheric ozone; ADP-minerals&metals: Abiotic depletion potential for non-fossil resources; ADP-fossil: Abiotic depletion for fossil resources potential; WDP: Water (user) deprivation potential, deprivation-weighted water consumption							

¹The 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.

Use of resources

Option A has been selected in calculating the primary energy indicators. Under this option, the energy is recorded as an input in the module where it enters the product system (A1–A3) and as an equivalent output in the module where it exits the system (A5 for packaging content and C3 and/or C4 for product content), whether it is transferred to another product system or treated as waste.

Results per declared unit: one kg								
Indicator	Unit	A1-A3	A5	C1	C2	C3	C4	D
PERE	MJ	1,75E+02	2,22E-01	3,24E-05	8,35E-02	2,87E-02	2,12E-04	-2,85E+00
PERM	MJ	2,19E-01	-2,19E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PERT	MJ	1,75E+02	3,00E-03	3,24E-05	8,35E-02	2,87E-02	2,12E-04	-2,85E+00
PENRE	MJ	7,12E+01	2,09E-02	5,25E-03	2,96E-01	2,81E-01	2,32E-02	-1,24E+01
PENRM	MJ	9,00E-03	-9,00E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PENRT	MJ	7,12E+01	1,19E-02	5,25E-03	2,96E-01	2,81E-01	2,32E-02	-1,24E+01
SM	kg	6,08E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-1,26E-01
RSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
NRSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
FW	m ³	6,06E-02	8,53E-06	3,66E-07	2,69E-05	9,90E-05	2,39E-05	-9,69E-03
Acronyms	PERE: Use of renewable primary energy excluding renewable primary energy resources 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 excluding non-renewable primary 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 re-sources; SM: Use of secondary material; RSF: Use of renewable secondary fuels; NRSF: Use of non-renewable secondary fuels; FW: Use of net fresh water							

Additional mandatory and voluntary impact category indicators

Results per declared unit: one kg								
Indicator	Unit	A1-A3	A5	C1	C2	C3	C4	D
GWP-GHG	kg CO ₂ eq	5,57E+00	1,41E-03	3,99E-04	1,52E-02	3,84E-02	9,39E-04	-8,81E-01
PM	Disease incidence	1,94E-06	6,00E-11	1,02E-10	9,86E-10	2,10E-09	1,51E-10	-6,52E-08
IRP ²	kBq U235 eq.	6,22E-01	4,44E-05	2,21E-06	2,58E-04	2,32E-03	1,38E-05	-8,83E-02
ETP-fw ¹	CTUe	6,28E+01	7,51E-03	2,81E-04	2,84E-02	2,25E-01	1,66E-03	-1,37E+01
HTP-c ¹	CTUh	6,40E-09	9,63E-13	4,07E-14	2,74E-12	1,74E-11	1,70E-13	-6,55E-10
HTP-nc ¹	CTUh	1,85E-07	4,10E-11	6,41E-13	1,17E-10	5,75E-10	3,83E-12	-2,35E-08
SQP ¹	Dimensionless	6,07E+02	4,72E-03	3,44E-04	1,28E-01	8,46E-01	4,52E-02	-6,67E+00
Acronyms	GWP-GHG: global warming potential - greenhouse gases; PM: particulate matter; IRP: ionizing radiation potential; ETP-fw: ecotoxicity potential - freshwater; HTP-c: human toxicity potential - cancer; HTP-nc: human toxicity potential - non-cancer; SQP: smog formation potential							

The GWP-GHG indicator is identical to GWP-total except that the characterisation factor (CF) for biogenic CO₂ is set to zero. This means that the uptake and emissions of biogenic CO₂ are “balanced out” already in modules A1 and A3, instead of in modules A5 (for packaging) or modules C3 and/or C4 (for the product). The results over the entire product life cycle, from module A to C, are thus identical for GWP-GHG and GWP-total unless some of the uptake of biogenic CO₂ is released as another greenhouse gas (e.g., CH₄). In the context of Norwegian public procurement legislation, GWP-GHG is also referred to as GWP-IOBC.

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.

² 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 disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator.

Waste indicators

Results per declared unit: one kg								
Indicator	Unit	A1-A3	A5	C1	C2	C3	C4	D
HWD	kg	2,44E+00	2,17E-04	4,60E-06	2,18E-04	1,68E-03	1,84E-05	-6,04E-01
NHWD	kg	3,36E+00	6,19E-05	3,41E-05	2,34E-03	0,00E+00	1,50E-01	-6,66E-01
RWD	kg	4,27E-06	9,31E-09	5,43E-10	0,00E+00	5,95E-07	3,35E-09	7,95E-11
Acronyms	HWD: Hazardous waste disposed; NHWD: Non-hazardous waste disposed; RWD: Radioactive waste disposed							

Output flow indicators

Results per declared unit: one kg								
Indicator	Unit	A1-A3	A5	C1	C2	C3	C4	D
CRU	kg	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	1,65E-04	0,00E+00	0,00E+00	8,50E-01	0,00E+00	0,00E+00
MER	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
EEE	MJ	0,00E+00	2,85E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
EET	MJ	0,00E+00	5,73E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Acronyms	CRU: Components for reuse; MFR: Materials for recycling; MER: Materials for energy recovery; EEE: Exported electric energy; EET: Exported thermal energy							

Information on biogenic carbon content

Parameter	Unit	Value
Biogenic carbon content in product	kg C	0,00E+00
Biogenic carbon content in the accompanying packaging	kg C	7,11E-03

Note: 1 kg biogenic carbon is equivalent to 44/12 kg of CO₂

Environmental impact performance from 100% scenarios

Potential environmental impact – indicators according to EN 15804+A2

Results per declared unit: one kg													
Indicator	Unit	C2 100% RC	C2 100% INC	C2 100% LF	C3 100% RC	C3 100% INC	C3 100% LF	C4 100% RC	C4 100% INC	C4 100% LF	D 100% RC	D 100% INC	D 100% LF
GWP-total	kg CO ₂ eq	1,52E-02	2,47E-02	1,52E-02	4,52E-02	0,00E+00	0,00E+00	0,00E+00	1,80E-02	6,26E-03	-1,36E+00	1,85E+00	1,85E+00
GWP-fossil	kg CO ₂ eq	1,52E-02	2,47E-02	1,52E-02	3,52E-02	0,00E+00	0,00E+00	0,00E+00	1,79E-02	6,26E-03	-1,36E+00	1,84E+00	1,84E+00
GWP-biogenic	kg CO ₂ eq	3,21E-06	5,21E-06	3,21E-06	1,00E-02	0,00E+00	0,00E+00	0,00E+00	2,04E-05	2,15E-06	-1,82E-03	2,33E-03	2,33E-03
GWP-luluc	kg CO ₂ eq	5,04E-06	8,19E-06	5,04E-06	2,28E-05	0,00E+00	0,00E+00	0,00E+00	1,19E-05	3,56E-06	-1,51E-03	1,99E-03	1,99E-03
ODP	kg CFC-11 eq	3,32E-10	5,39E-10	3,32E-10	3,89E-10	0,00E+00	0,00E+00	0,00E+00	3,65E-10	1,74E-10	-1,43E-08	1,97E-08	1,97E-08
AP	mole H ⁺ eq	4,89E-05	7,94E-05	4,89E-05	1,56E-04	0,00E+00	0,00E+00	0,00E+00	1,01E-04	4,38E-05	-8,46E-03	1,13E-02	1,13E-02
EP-freshwater	kg P eq	1,04E-06	1,69E-06	1,04E-06	1,04E-05	0,00E+00	0,00E+00	0,00E+00	1,32E-05	5,48E-07	-1,89E-03	2,49E-03	2,49E-03
EP-marine	kg N eq	1,66E-05	2,69E-05	1,66E-05	1,04E-04	0,00E+00	0,00E+00	0,00E+00	3,85E-05	1,68E-05	-1,76E-03	2,36E-03	2,36E-03
EP-terrestrial	mole N eq	1,79E-04	2,91E-04	1,79E-04	5,04E-04	0,00E+00	0,00E+00	0,00E+00	4,19E-04	1,84E-04	-1,98E-02	2,65E-02	2,65E-02
POCP	kg NMVOC eq	7,41E-05	1,20E-04	7,41E-05	1,57E-04	0,00E+00	0,00E+00	0,00E+00	1,43E-04	6,63E-05	-5,93E-03	7,95E-03	7,95E-03
ADP-minerals & metals ¹	kg Sb eq	5,13E-08	8,34E-08	5,13E-08	4,48E-07	0,00E+00	0,00E+00	0,00E+00	5,35E-08	9,37E-09	-2,09E-04	2,73E-04	2,73E-04
ADP-fossil ¹	MJ	2,16E-01	3,52E-01	2,16E-01	3,31E-01	0,00E+00	0,00E+00	0,00E+00	2,97E-01	1,55E-01	-2,02E+01	2,74E+01	2,74E+01
WDP ¹	m ³	1,16E-03	1,88E-03	1,16E-03	6,57E-03	0,00E+00	0,00E+00	0,00E+00	8,49E-03	6,73E-03	-7,25E-01	9,98E-01	9,98E-01
Acronyms	GWP-total: Total Global Warming Potential; 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 Exceedance; 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 Exceedance; POCP: Formation potential of tropospheric ozone; ADP-minerals&metals: Abiotic depletion potential for non-fossil resources; ADP-fossil: Abiotic depletion for fossil resources potential; WDP: Water (user) deprivation potential, deprivation-weighted water consumption; RC: Recycling; INC: Incineration; LF: Landfill												

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.

Use of resources 100% scenarios

Results per declared unit: one kg													
Indicator	Unit	C2 100% RC	C2 100% INC	C2 100% LF	C3 100% RC	C3 100% INC	C3 100% LF	C4 100% RC	C4 100% INC	C4 100% LF	D 100% RC	D 100% INC	D 100% LF
PERE	MJ	8,35E-02	1,36E-01	8,35E-02	3,37E-02	0,00E+00	0,00E+00	0,00E+00	5,80E-03	1,42E-03	-4,40E+00	5,94E+00	5,94E+00
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
PERT	MJ	8,35E-02	1,36E-01	8,35E-02	3,37E-02	0,00E+00	0,00E+00	0,00E+00	5,80E-03	1,42E-03	-4,40E+00	5,94E+00	5,94E+00
PENRE	MJ	2,96E-01	4,82E-01	2,96E-01	3,31E-01	0,00E+00	0,00E+00	0,00E+00	2,97E-01	1,55E-01	-1,91E+01	2,57E+01	2,57E+01
PENRM	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
PENRT	MJ	2,96E-01	4,82E-01	2,96E-01	3,31E-01	0,00E+00	0,00E+00	0,00E+00	2,97E-01	1,55E-01	-1,91E+01	2,57E+01	2,57E+01
SM	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	-2,16E-01	3,85E-01	3,85E-01
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
NRSF	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
FW	m3	2,69E-05	4,38E-05	2,69E-05	1,16E-04	0,00E+00	0,00E+00	0,00E+00	1,95E-04	1,59E-04	-1,51E-02	2,07E-02	2,07E-02
Acronyms	PERE: Use of renewable primary energy excluding renewable primary energy resources 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 excluding non-renewable primary 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 re-sources; SM: Use of secondary material; RSF: Use of renewable secondary fuels; NRSF: Use of non-renewable secondary fuels; FW: Use of net fresh water; LF: Landfill; RC: Recycling; INC: Incineration												

Additional voluntary indicators 100% scenarios

Results per declared unit: one kg													
Indicator	Unit	C2 100% RC	C2 100% INC	C2 100% LF	C3 100% RC	C3 100% INC	C3 100% LF	C4 100% RC	C4 100% INC	C4 100% LF	D 100% RC	D 100% INC	D 100% LF
GWP-GHG	kg CO ₂ eq	1,52E-02	2,47E-02	1,52E-02	4,52E-02	0,00E+00	0,00E+00	0,00E+00	1,80E-02	6,26E-03	-1,36E+00	1,85E+00	1,85E+00
PM	Disease incidence	9,86E-10	1,60E-09	9,86E-10	2,46E-09	0,00E+00	0,00E+00	0,00E+00	3,30E-09	1,01E-09	-1,00E-07	1,33E-07	1,33E-07
IRP ²	kBq U235 eq.	2,58E-04	4,19E-04	2,58E-04	2,73E-03	0,00E+00	0,00E+00	0,00E+00	3,37E-04	9,17E-05	-1,36E-01	1,84E-01	1,84E-01
ETP-fw ¹	CTUe	2,84E-02	4,61E-02	2,84E-02	2,64E-01	0,00E+00	0,00E+00	0,00E+00	2,66E-01	1,11E-02	-2,10E+01	2,76E+01	2,76E+01
HTP-c ¹	CTUh	2,74E-12	4,46E-12	2,74E-12	2,04E-11	0,00E+00	0,00E+00	0,00E+00	2,10E-11	1,14E-12	-1,06E-09	1,66E-09	1,66E-09
HTP-nc ¹	CTUh	1,17E-10	1,91E-10	1,17E-10	6,77E-10	0,00E+00	0,00E+00	0,00E+00	1,48E-10	2,56E-11	-3,62E-08	4,82E-08	4,82E-08
SQP ¹	Dimensionless	1,28E-01	2,07E-01	1,28E-01	9,95E-01	0,00E+00	0,00E+00	0,00E+00	3,36E-01	3,01E-01	-1,03E+01	1,37E+01	1,37E+01
Acronyms	GWP-GHG: global warming potential - greenhouse gases; PM: particulate matter; IRP: ionizing radiation potential; ETP-fw: ecotoxicity potential - freshwater; HTP-c: human toxicity potential - cancer; HTP-nc: human toxicity potential - non-cancer; SQP: smog formation potential; LF: Landfill; RC: Recycling; INC: Incineration												

The GWP-GHG indicator is identical to GWP-total except that the characterisation factor (CF) for biogenic CO₂ is set to zero. This means that the uptake and emissions of biogenic CO₂ are “balanced out” already in modules A1 and A3, instead of in modules A5 (for packaging) or modules C3 and/or C4 (for the product). The results over the entire product life cycle, from module A to C, are thus identical for GWP-GHG and GWP-total unless some of the uptake of biogenic CO₂ is released as another greenhouse gas (e.g., CH₄). In the context of Norwegian public procurement legislation, GWP-GHG is also referred to as GWP-IOBC.

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.

² 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 disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator.

Waste indicators 100% scenarios

Results per declared unit: one kg													
Indicator	Unit	C2 100% RC	C2 100% INC	C2 100% LF	C3 100% RC	C3 100% INC	C3 100% LF	C4 100% RC	C4 100% INC	C4 100% LF	D 100% RC	D 100% INC	D 100% LF
HWD	kg	2,18E-04	3,54E-04	2,18E-04	1,98E-03	0,00E+00	0,00E+00	0,00E+00	8,92E-04	1,23E-04	-9,33E-01	1,26E+00	1,26E+00
NHWD	kg	2,34E-03	3,81E-03	2,34E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,00E+00	-1,02E+00	1,35E+00	1,35E+00
RWD	kg	0,00E+00	0,00E+00	0,00E+00	7,00E-07	0,00E+00	0,00E+00	0,00E+00	8,32E-08	2,24E-08	-3,98E-11	7,56E-10	7,56E-10
Acronyms	HWD: Hazardous waste disposed; NHWD: Non-hazardous waste disposed; RWD: Radioactive waste disposed; LF: Landfill; RC: Recycling; INC: Incineration												

Output flow indicators 100% scenarios

Results per declared unit: one kg													
Indicator	Unit	C2 100% RC	C2 100% INC	C2 100% LF	C3 100% RC	C3 100% INC	C3 100% LF	C4 100% RC	C4 100% INC	C4 100% LF	D 100% RC	D 100% INC	D 100% LF
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
MFR	kg	0,00E+00	0,00E+00	0,00E+00	1,00E+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
MER	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
EEE	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
EET	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
Acronyms	CRU: Components for reuse; MFR: Materials for recycling; MER: Materials for energy recovery; EEE: Exported electric energy; EET: Exported thermal energy; LF: Landfill; RC: Recycling; INC: Incineration												

Impact Indicators Variation

LCA result of one declared unit product (A-C)	Unit	Min	Max
GWP-total	kg CO2 eq.	-52%	+39%
GWP-fossil	kg CO2 eq.	-52%	+39%
GWP-GHG	kg CO2 eq.	-52%	+39%
GWP-biogenic	kg CO2 eq.	-14%	+17%
GWP-luluc	kg CO2 eq.	-27%	+10%
ODP	kg CFC-11 eq.	-11%	+15%
AP	Mole of H+ eq.	-32%	+21%
EP-freshwater	kg P eq.	-120%	+42%
EP-marine	kg N eq.	-18%	+16%
EP-terrestrial	Mole of N eq.	-18%	+15%
POCP	kg NMVOC eq.	-18%	+16%
ADP-M&M	kg Sb eq.	-149%	+49%
ADP-fossil	MJ	-49%	+29%
WDP	m ³ world equiv.	-59%	+26%

Additional environmental information - Conversion factors A1-A3 GWP-GHG

Product Name	Conversion factors
Pipe products (Nipples), Worst Case	1,49
Rod products (Sockets), Worst Case	0,58
Sockets and Nipples	1,00

Additional information

Additional Environmental Information

We are ISO 14001 certified since 2002. In 2021 we broadened our view of sustainability by involving our owners, employees, customers, suppliers and the society around us.

Abbreviations

General Abbreviations

EN	European Norm (Standard)	EPD	Environmental Product Declaration
EF	Environmental Footprint	GPI	General Programme Instructions
ISO	International Organization for Standardization	LCA	Life Cycle Assessment
PCR	Product Category Rules	c-PCR	Complementary Product Category Rules
CEN	European Committee for Standardization	CLC	Co-location centre
CPC	Central Product Classification	GHS	Globally harmonized system of classification and labelling of chemicals
GRI	Global Reporting Initiative		

Environmental Impact Indicators (EN 15804)

GWP-GHG	Greenhouse gas	GWP	Global Warming Potential
GWP-fossil	Global Warming Potential fossil fuels	GWP-biogenic	Global Warming Potential biogenic
GWP-luluc	Global Warming Potential land use and land use change	GWP-total	Total Global Warming Potential
GWP-GHG	Global Warming Potential for greenhouse gases	ODP	Depletion potential of the stratospheric ozone layer
AP	Acidification potential, Accumulated Exceedance	EP	Eutrophication Potential
EP-freshwater	Eutrophication potential, fraction of nutrients reaching freshwater end compartment	EP-marine	Eutrophication potential, fraction of nutrients reaching freshwater end compartment
EP-terrestrial	Eutrophication potential, Accumulated Exceedance	POCP	Formation potential of tropospheric ozone
ADP	Abiotic Depletion Potential	ADP-minerals&metals	Abiotic depletion potential for non-fossil resources
ADP-fossil	Abiotic depletion for fossil resources potential	WDP	Water (user) deprivation potential, deprivation-weighted water consumption

Resource Use Indicators

PERE	Use of renewable primary energy excluding renewable primary energy resources used as raw materials (MJ)	PERM	Use of renewable primary energy resources used as raw materials (MJ)
PERT	Total use of renewable primary energy resources (MJ)	PENRE	Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials (MJ)
PENRM	Use of non-renewable primary energy resources used as raw materials (MJ)	PENRT	Total use of non-renewable primary energy resources (MJ)
SM	Use of secondary material (kg)	RSF	Use of renewable secondary fuels (MJ)
NRSF	Use of non-renewable secondary fuels (MJ)	FW	Use of net fresh water (m ³)

Abbreviations continued

Waste Indicators

HWD Hazardous Waste (disposed) (kg)
RWD Radioactive Waste (disposed) (kg)

NHWD Non-Hazardous Waste (disposed) (kg)

Output Flow Indicators

CRU Components for Reuse (kg)
MER Materials for Energy Recovery (kg)
EET Exported Energy, Thermal (MJ)

MFR Material for Recycling (kg)
EEE Exported Energy, Electricity (MJ)

Lifecycle Stages / Modules

A1 Raw material supply
A3 Manufacturing
A5 Construction/Installation
B2 Maintenance
B4 Replacement
B6 Operational energy use
C1 Deconstruction/Demolition
C3 Waste processing
D Reuse-Recovery-Recycling potential

A2 Transport
A4 Transport to site
B1 Use
B3 Repair
B5 Refurbishment
B7 Operational water use
C2 Transport to waste processing
C4 Disposal

Other Relevant Terms

SVHC Substances of Very High Concern
CAS No. Chemical Abstracts Service Number
kg Kilogram
NMVOC Non-Methane Volatile Organic Compounds
RC Recycling
P eq. Phosphorus Equivalents
CFC-11 eq. Chlorofluorocarbon-11 Equivalents
kg C Kilograms of Carbon
ND Not Declared
MND Module not declared

EC No. European Community Number
MJ Megajoule
m³ Cubic Meter
Sb eq. Antimony Equivalents
LF Landfill
N eq. Nitrogen Equivalents
CO₂ eq. Carbon Dioxide Equivalents
kg CO₂ eq. Kilograms of Carbon Dioxide Equivalent
INC Incineration

References

- EN 15804:2012+A2:2019/AC:2021
Sustainability of construction works – Environmental product declarations – Core rules for the product category of construction products
- EPD International (2024)
General Programme Instructions of the International EPD System, version 5.0
- EPD International (2025)
PCR 2019:14 Construction products and construction services, version 2.0.1.
- ISO 14020:2022
International Standard ISO 14020 – Environmental statements and programmes for products – Principles and general requirements
- ISO 14025:2006
International Standard ISO 14025 – Environmental labels and declarations — Type III environmental declarations — Principles and procedures
- ISO 14040:2006
International Standard ISO 14040: Environmental Management – Life cycle assessment – Principles and framework. Second edition 2006-07-01.
- ISO 14044:2006
International Standard ISO 14044: Environmental Management – Life cycle assessment – Requirements and Guidelines.
- Life Cycle Assessment of Threaded fittings, Hakkarainen. V, Sumukari. A, 2026

Version history

2026-09-24 Original version of the EPD

Contact Info

EPD owner

Name Nords International AB
Email simon.hedberg@nordsinternational.com
Telephone +46 (0) 70 496 37 78
Address Prostgårdsvägen 2, 655 60 Molkom, Sweden



LCA author

Name Viktor Hakkarainen
Email viktor.hakkarainen@chm-analytics.com
Telephone +46 739 20 33 64
Address Drottninggatan 69, 411 07 Gothenburg, Sweden



Third party verifier

Name Kristin Fransson, RISE Research Institute of Sweden
Email kristin.fransson@ri.se
Telephone +46 73 020 67 72
Address Box 104, SE-431 22 Mölndal, Sweden



Program operator

Name EPD International AB
Email support@environdec.com
Telephone +46 (0)73 311 30 20
Address SE-11427 Stockholm, Sweden

