

Environmental
Product
Declaration

According to ISO14025+EN15804 A2 (+indicators A1)

This declaration is for:

HENCO 1L PEXC pipe

Provided by:

Henco Industries NV



MRPI® registration:

1.1.00850.2025

Program operator:

Stichting MRPI®

Publisher:

Stichting MRPI®

www.mrpi.nl

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COMPANY INFORMATION

Henco Industries NV

Toekomstlaan 27

2200

Herentals

Belgium

+3214285660

productmanagement@henco.be

https://www.henco.be/

MRPI® REGISTRATION

1.1.00850.2025

DATE OF THIS ISSUE

15-11-2024

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15-11-2029

SCOPE OF DECLARATION

This MRPI®-EPD certificate is verified by Niels Jonkers, PLUK sustainability. The LCA study has been done by Mando Kort, Ecochain Technologies B.V.. The certificate is based on an LCA-dossier according to ISO14025+EN15804 A2 (+indicators A1). It is verified according to the 'MRPI®-EPD verification protocol November 2020.v4.0'. EPDs 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.

PRODUCT

HENCO 1L PEXC pipe

DECLARED UNIT / FUNCTIONAL UNIT

1 Mass (kg)

DESCRIPTION OF PRODUCT

The 1L PEXC tube is a plastic tube consisting of electron cross-linked polyethylene.

VISUAL PRODUCT



MORE INFORMATION

https://www.henco.be/en/1L%20PE-Xc

PROGRAM OPERATOR

Stichting MRPI®

Kingsfordweg 151

1043 GR

Amsterdam

Ing. L. L. Oosterveen MSc. MBA	DEMONSTRATION	OF VERIFICATION
Managing Director MRPI	CEN standard EN15804 s	erves as the core PCR [1]
	Independent verification of	of the declaration an data
	according to ISO14025+EN	N15804 A2 (+indicators A1)
\int_{Λ}	Internal:	External: X
LuCokur	Third party verifier: Niels Jonkers, PLUI	K sustainability
	[1] PCR = Product Category Rules	







DETAILED PRODUCT DESCRIPTION (PART 1)

HENCO 1L PEXC pipe from Henco Industries NV is a plastic pipe consisting of electron cross-linked polyethylene. This type of tube is sold only on rolls (from 25 to 100 m) and is available in different diameters. The pipe is used for drinking water and heating applications.

Components Product (>1%)	(kg/%)
High Density Polyethylene	97,65%
Lubricating oil	2%

DETAILED PRODUCT DESCRIPTION (PART 2)

For its packaging of HENCO 1L PEXC PIPE, Henco Industries NV puts the focus mainly on the reuse and/or recyclability of the chosen material.

Components Packaging (>1%)	(kg/%)
Wood	6,06%
Paper and cardboard	3,68%
Plastics	1,02%

SCOPE AND TYPE

Produced in Belgium, sold in Europe. Based on datasets from Ecoinvent version 3.6, incorporated in Ecochain Helix version 4.3.1. The EPD gives average scores of multiple pipe diameters, all produced by Henco.

PROI	DUCT S	TAGE	CONSTRUC PROCESS S				US	SE STA	GE			EN	D OF LI	IFE STA	.GE	BENEFITS AND LOADS BEYOND THE SYSTEM BOUNDARIES
Taw material supply	Z Transport	∑ Manufacturing	F Transport gate to site	G Assembly	esn B1	Raintenance	B Repair	Replacement	Refurbishment	Operational energy use	Q Operational water use	Q De-construction demolition	S Transport	S Waste processing	Pisposal C4	Reuse - Recovery - Recycling potential
Х	Х	Χ	Х	Х	ND	ND	ND	ND	ND	ND	ND	Х	Х	Х	Х	Х

X = Modules Assessed

ND = Not Declared









REPRESENTATIVENESS

This LCA is based on an average kg of this type of pipe and represents the different diameters within this pipe type. A sensitivity analysis has shown that these different diameters have no more than the allowable deviation between them, making this average LCA representative for all available diameters. For further analysis, the weight per linear meter of pipe can be multiplied by the 1 kg results from this EPD to calculate the impact per 1m.







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

	Unit	A1	A2	А3	A1-A3	A4	A 5	B1	B2	В3	В4	B5	В6	В7	C1	C2	C3	C4	D
ADPE	kg Sb eq.	2.06E-05	6.14E-07	2.29E-06	2.35E-05	1.16E-06	9.06E-07	ND	0,00E+00	3.42E-07	8.56E-07	0,00E+00	-9.59E-07						
ADPF	MJ	7.21E+01	3.64E-01	1.99E+01	9.24E+01	6.92E-01	5.86E-01	ND	0,00E+00	2.04E-01	6.09E-01	0,00E+00	-8.35E+00						
GWP	kg CO2 eq.	2.00E+00	2.35E-02	5.21E-01	2.54E+00	4.55E-02	5.57E-02	ND	0,00E+00	1.34E-02	2.76E+00	0,00E+00	-5.10E-01						
ODP	kg CFC11 eq.	7.11E-08	4.36E-09	1.51E-07	2.26E-07	8.07E-09	3.81E-09	ND	0,00E+00	2.37E-09	4.37E-09	0,00E+00	-5.64E-08						
POCP	kg ethene eq.	2.11E-03	1.41E-05	1.08E-04	2.24E-03	2.75E-05	2.09E-05	ND	0,00E+00	8.07E-06	2.47E-05	0,00E+00	-8.72E-05						
AP	kg SO2 eq.	6.78E-03	1.01E-04	8.41E-04	7.72E-03	2.00E-04	1.81E-04	ND	0,00E+00	5.88E-05	3.31E-04	0,00E+00	-4.87E-04						
EP	kg (PO4) 3 eq.	6.39E-04	2.02E-05	1.56E-04	8.15E-04	3.93E-05	1.20E-04	ND	0,00E+00	1.16E-05	1.15E-04	0,00E+00	-7.33E-05						
Toxicity	indicate	ors and l	ECI (Du	tch marl	ket)														
НТР	kg DCB eq.	3.84E-01	1.01E-02	1.10E-01	5.03E-01	1.92E-02	1.71E-01	ND	0,00E+00	5.63E-03	1.08E-01	0,00E+00	-7.26E-02						
FAETP	kg DCB eq.	1.40E-02	2.95E-04	2.82E-03	1.71E-02	5.59E-04	9.75E-03	ND	0,00E+00	1.64E-04	3.13E-02	0,00E+00	-9.93E-04						
MAETP	kg DCB eq.	2.83E+01	1.05E+00	8.16E+00	3.75E+01	2.01E+00	2.85E+01	ND	0,00E+00	5.92E-01	4.59E+01	0,00E+00	-3.41E+00						
TETP	kg DCB eq.	1.65E-03	3.57E-05	1.68E-03	3.37E-03	6.77E-05	4.21E-04	ND	0,00E+00	1.99E-05	1.84E-04	0,00E+00	-3.80E-04						
ECI	euro	1,80E-01	2,84E-03	4,24E-02	2,26E-01	5,48E-03	2,83E-02	ND	0,00E+00	1,61E-03	1,56E-01	0,00E+00	-3,59E-02						
ADPF	kg Sb eq.	3.44E-02	1.73E-04	3.26E-03	3.78E-02	3.35E-04	2.82E-04	ND	0,00E+00	9.84E-05	3.09E-04	0,00E+00	-4.42E-03						

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	А3	A1-A3	A4	A 5	B1	B2	В3	B4	B5	В6	В7	C1	C2	C3	C4	D
GWP-total	kg CO2 eq.	2.08E+00	2.37E-02	5.27E-01	2.63E+00	4.59E-02	5.44E-02	ND	0,00E+00	1.35E-02	2.76E+00	0,00E+00	-5.13E-01						
GWP-fossil	kg CO2 eq.	2.08E+00	2.37E-02	5.26E-01	2.63E+00	4.59E-02	5.44E-02	ND	0,00E+00	1.35E-02	2.76E+00	0,00E+00	-5.13E-01						
GWP- biogenic	kg CO2 eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	ND	0,00E+00	0.00E+00	0.00E+00	0,00E+00	0.00E+00						
GWP-luluc	kg CO2 eq.	1.10E-03	8.39E-06	1.17E-03	2.29E-03	1.68E-05	3.13E-05	ND	0,00E+00	4.95E-06	2.58E-05	0,00E+00	-8.53E-05						
ODP	kg CFC11 eq.	7.26E-08	5.47E-09	1.05E-07	1.83E-07	1.01E-08	4.30E-09	ND	0,00E+00	2.98E-09	5.11E-09	0,00E+00	-6.33E-08						
AP	mol H+ eq.	8.12E-03	1.35E-04	1.09E-03	9.35E-03	2.66E-04	2.32E-04	ND	0,00E+00	7.83E-05	4.61E-04	0,00E+00	-6.16E-04						
EP-fresh water	kg PO4 eq.	3.87E-05	1.95E-07	1.15E-05	5.04E-05	4.63E-07	2.28E-06	ND	0,00E+00	1.36E-07	8.58E-07	0,00E+00	-3.50E-06						
EP-marine	kg N eq.	1.36E-03	4.83E-05	2.69E-04	1.67E-03	9.38E-05	5.49E-05	ND	0,00E+00	2.76E-05	1.97E-04	0,00E+00	-1.63E-04						
EP- terrestrial	mol N eq.	1.50E-02	5.33E-04	3.24E-03	1.88E-02	1.03E-03	5.81E-04	ND	0,00E+00	3.04E-04	2.13E-03	0,00E+00	-1.77E-03						
POCP	kg NMVOC eq.	7.53E-03	1.52E-04	8.44E-04	8.53E-03	2.95E-04	2.19E-04	ND	0,00E+00	8.68E-05	5.40E-04	0,00E+00	-5.67E-04						
ADP- minerals & metals	kg Sb eq.	2.06E-05	6.14E-07	2.29E-06	2.35E-05	1.16E-06	9.06E-07	ND	0,00E+00	3.42E-07	8.56E-07	0,00E+00	-9.59E-07						
ADP-fossil	MJ, net calorific value	7.21E+01	3.64E-01	1.99E+01	9.24E+01	6.92E-01	5.86E-01	ND	0,00E+00	2.04E-01	6.09E-01	0,00E+00	-8.35E+00						
WDP	m3 world eq. Deprived	1.65E+00	1.12E-03	1.84E-01	1.83E+00	2.48E-03	3.00E-02	ND	0,00E+00	7.28E-04	1.18E-02	0,00E+00	-4.59E-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

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	А3	A1-A3	A4	A5	B1	B2	В3	B4	B5	В6	В7	C1	C2	C3	C4	D
PM	Disease inci-dence	6.72E-08	2.14E-09	6.79E-09	7.61E-08	4.12E-09	3.51E-09	ND	0,00E+00	4.12E-09	3.51E-09	0,00E+00	1.21E-09						
IRP	kBq U235 eq.	5.43E-02	1.59E-03	2.23E-01	2.79E-01	2.90E-03	2.39E-03	ND	0,00E+00	2.90E-03	2.39E-03	0,00E+00	8.53E-04						
ETP-fw	CTUe	1.60E+01	2.96E-01	6.75E+00	2.31E+01	6.17E-01	1.80E+00	ND	0,00E+00	6.17E-01	1.80E+00	0,00E+00	1.81E-01						
HTP-c	CTUh	6.88E-10	1.05E-11	1.57E-10	8.55E-10	2.00E-11	1.47E-10	ND	0,00E+00	2.00E-11	1.47E-10	0,00E+00	5.89E-12						
HTP-nc	CTUh	1.38E-08	3.52E-10	3.47E-09	1.76E-08	6.75E-10	1.43E-09	ND	0,00E+00	6.75E-10	1.43E-09	0,00E+00	1.98E-10						
SQP	-	1.50E+01	3.12E-01	5.13E+00	2.05E+01	6.00E-01	1.21E-01	ND	0,00E+00	6.00E-01	1.21E-01	0,00E+00	1.77E-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	В3	B4	B5	В6	В7	C1	C2	C3	C4	D
HWD	kg	1.78E-05	9.31E-07	7.73E-06	2.65E-05	1.75E-06	5.78E-03	ND	0,00E+00	5.16E-07	3.30E-06	0,00E+00	-1.05E-05						
NHWD	kg	9.67E-02	2.26E-02	5.37E-02	1.73E-01	4.39E-02	9.83E-02	ND	0,00E+00	1.29E-02	4.27E-02	0,00E+00	-2.59E-02						
RWD	kg	5.17E-05	2.48E-06	1.90E-04	2.44E-04	4.54E-06	2.43E-06	ND	0,00E+00	1.34E-06	1.88E-06	0,00E+00	-8.18E-06						
CRU	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	ND	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	0.00E+00	0.00E+00	0.00E+00	ND	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	1.58E-03	ND	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	ND	0,00E+00	0.00E+00	0.00E+00	0,00E+00	0.00E+00						
ETE	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	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 unit or declared unit (A1 and A2)

	Unit	A1	A2	A3	A1-A3	A4	A 5	B1	B2	В3	B4	B5	В6	В7	C1	C2	C3	C4	D
PERE	MJ	1.45E+00	5.22E-03	1.71E+00	3.16E+00	8.66E-03	4.65E-02	ND	0,00E+00	2.55E-03	2.30E-02	0,00E+00	-5.87E-02						
PERM	MJ	1.64E+00	0.00E+00	0.00E+00	1.64E+00	0.00E+00	0.00E+00	ND	0,00E+00	0.00E+00	0.00E+00	0,00E+00	-6.00E-02						
PERT	MJ	3.09E+00	5.22E-03	1.71E+00	4.80E+00	8.66E-03	4.65E-02	ND	0,00E+00	2.55E-03	2.30E-02	0,00E+00	-1.19E-01						
PENRE	MJ	3.30E+01	3.87E-01	2.04E+01	5.38E+01	7.35E-01	5.86E-01	ND	0,00E+00	2.16E-01	6.55E-01	0,00E+00	-4.22E+00						
PENRM	MJ	4.44E+01	0.00E+00	0.00E+00	4.44E+01	0.00E+00	0.00E+00	ND	0,00E+00	0.00E+00	0.00E+00	0,00E+00	-5.00E+00						
PENRT	MJ	7.74E+01	3.87E-01	2.04E+01	9.82E+01	7.35E-01	5.86E-01	ND	0,00E+00	2.16E-01	6.55E-01	0,00E+00	-9.22E+00						
SM	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.35E-03	ND	0,00E+00	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	ND	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	ND	0,00E+00	0.00E+00	0.00E+00	0,00E+00	0.00E+00						
FW	m3	2.57E-02	4.12E-05	5.67E-03	3.14E-02	8.43E-05	1.55E-03	ND	0,00E+00	2.48E-05	4.43E-04	0,00E+00	-1.03E-03						

PERE = Use of renewable 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	А3	A1-A3	A4	A5	B1	B2	В3	B4	B5	В6	В7	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	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00						
ВССра	kg C	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	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)

Technical product information was requested from the manufacturers and the components were modeled based on the technical product information provided by the manufacturers.

SCENARIOS AND ADDITIONAL TECHNICAL INFORMATION (PART 1)

All materials (A1) required to produce the pipe are included, as is the transportation distance from the supplier with the relevant means of transportation (A2). All relevant stage A3 production processes, such as potential production losses, have been included in this study. The production of HENCO 1L PEXC BUIS is done by extrusion. In the next stage, the HENCO 1L PEXC BUIS is cross-linked in the bunker facility. As a final step in the production process, the tubes are cut to the desired length and printed. This final step is done in the unwinding facility. The finished products eventually go to the sales markets. The waste generated during the production process goes to waste treatment.

Mat	terial	(kg/%)
HD	PE	97,65%
Lub	pricating oil	2%

SCENARIOS AND ADDITIONAL TECHNICAL INFORMATION (PART 2)

All relevant transport and structures in the construction and installation process were included in this study (A4). Material required for installation and handling of the packaging waste was taken into account (A5). At the construction site, the products must be cut to size. This usually generates more waste. In addition, some of the materials are lost due to damage or weather. It is assumed that 5% of the materials are lost.

Packaging processing at installation	Recycling	Energy recovery	Landfill
Plastics	27%	26%	47%
Paper	75%	10%	15%
Wood	38%	23%	39%
Metal	66%	0%	34%

SCENARIOS AND ADDITIONAL TECHNICAL INFORMATION (PART 3)

This LCA includes demolition (C1), transport to a waste treatment facility (C2), processes for waste treatment (up to end-of-waste status; C3) and landfill (C4). It is assumed that 90% will be incinerated and 10% recycled.

SCENARIOS AND ADDITIONAL TECHNICAL INFORMATION (PART 4)

The HENCO 1L PEXC BUIS has a mono plastic composition and intrinsically lends itself well to recycling. However, because this pipe after use and demolition is often contaminated with other building materials, the destination is usually waste incineration with energy recovery.

DECLARATION OF SVHC

None of the substances in the product are on the 'Candidate List of Substances of Very High Concern for Authorization' (SVHC) or exceed the threshold value of the European Chemicals Agency.







REFERENCES

- [1] 'ISO 14040: Environmental management Life cycle assessment Principles and Framework', International Organization for Standardization, ISO14040:2006.
- [2] 'ISO 14044: Environmental management Life cycle assessment Requirements and guidelines', International Organization for Standardization, ISO14044:2006.
- [3] 'ISO 14025: Environmental labels and declarations Type III environmental declarations Principles and procedures, International Organization for Standardization', ISO14025:2006.
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