

**Environmental
Product
Declaration**

According to ISO14025+EN15804 A2 (+indicators A1)

This declaration is for:
**HENCO Synthetic press fitting without messing or inox
inserts**

Provided by:
Henco Industries NV



MRPI® registration:
1.1.00986.2025

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

Date of first issue:
4-10-2025
Date of this issue:
4-10-2025
Expiry date:
4-10-2030



COMPANY INFORMATION

Henco Industries NV
Toekomstlaan 27
2200
Herentals
Belgium
+3214285660
info@henco.be
<https://www.henco.be/>

MRPI® REGISTRATION

1.1.00986.2025

DATE OF THIS ISSUE

4-10-2025

EXPIRY DATE

4-10-2030

SCOPE OF DECLARATION

This MRPI®-EPD certificate is verified by Mantijn van Leeuwen, NIBE sustainability experts. 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.

PROGRAM OPERATOR

Stichting MRPI®
Kingsfordweg 151
1043 GR
Amsterdam

PRODUCT

HENCO Synthetic press fitting without messing or inox inserts

DECLARED UNIT / FUNCTIONAL UNIT

1 Mass (kg)

DESCRIPTION OF PRODUCT

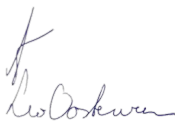
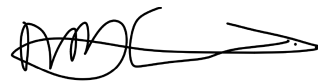
The Henco SYNTHETIC PRESS FITTING WITHOUT MESSING or INOX is a technological tour de force that guarantees reliable and leak-proof connections.

VISUAL PRODUCT



MORE INFORMATION

<https://www.henco.be/en/15PK>

Ing. L. L. Oosterveen MSc. MBA Managing Director MRPI 	DEMONSTRATION OF VERIFICATION
	CEN standard EN15804 serves as the core PCR [1]
	Independent verification of the declaration and data according to ISO14025+EN15804 A2 (+indicators A1) Internal: External: X
	Third party verifier: Mantijn van Leeuwen, NIBE sustainability experts  [1] PCR = Product Category Rules



DETAILED PRODUCT DESCRIPTION

The Henco SYNTHETIC PRESS FITTING WITHOUT MESSING or INOX INSERT is a technological tour de force that guarantees reliable and leak-proof connections. Thanks to the use of PVDF, this coupling offers not only mechanical force, but also long-term resistance to chemical, thermal and mechanical stress. With visual control, leak detection and a well thought-out design, it is an excellent choice for any professional installation. The Henco SYNTHETIC PRESS FITTING WITHOUT MESSING or INOX INSERTS are available in white and / or black. Various shapes are available for these fittings, examples of which are a bend of 90 ° or a T-piece. The dimensions of the connections vary between 14mm and 63mm. Other than for sanitary use, there are special versions that can be used in gas or sprinkler systems.

The values are based on an average composition and expressed per kilogram. For correct use, the actual product mass must be multiplied by the stated value per 1 kg.

Components Product (>1%)	(kg/%)
Polyvinylfluoride	43,01%
Chromium steel	56,42%

For its packaging of HENCO SYNTHETIC PRESS FITTINGS WITHOUT MESSING or INOX INSERTS, Henco Industries NV puts the focus mainly on the reuse and/or recyclability of the chosen material.

Components Packaging (>1%)	(kg/%)
Paper and cardboard	53,40%
Plastics	46,60%

SCOPE AND TYPE

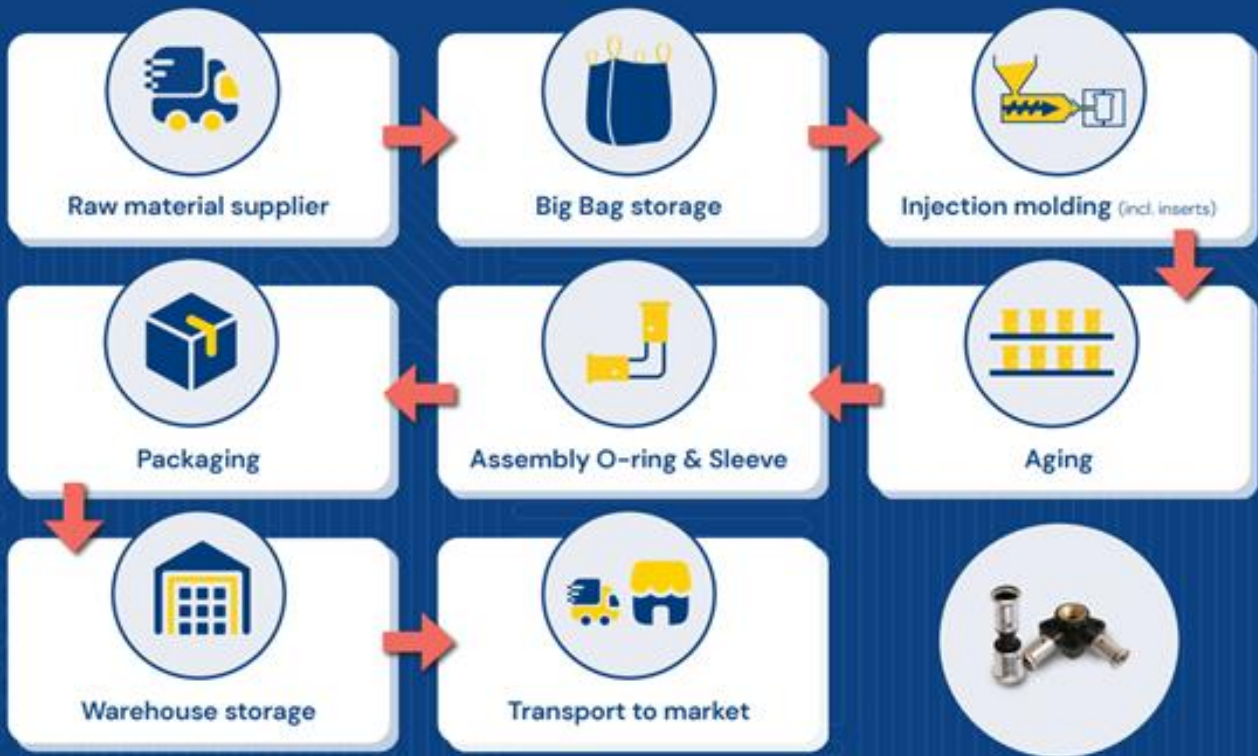
Produced in Belgium, sold in Europe. Based on datasets from Ecoinvent version 3.6, incorporated in Ecochain Helix version 4.3.1. The EPD gives average scores of all variants within the product group, all produced by Henco.

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	ND	ND	ND	ND	ND	ND	ND	X	X	X	X	X

X = Modules Assessed

ND = Not Declared

Production process diagram Henco fittings



REPRESENTATIVENESS

Henco produces multiple types of SYNTHETIC PRESS FITTING WITHOUT MESSING or INOX INSERTS, with multiple variants in connections for each type. This makes Henco's range considerable. The LCA has therefore chosen to model a weighted average for the average composition per 1 kg COMPOSITE FITTING WITHOUT MESSING or INOX INSERTS.

The data are based on an average composition, with the observed variation included (the highest deviation was: -20,88%) to reflect the possible deviations.

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.	3,57E-04	5,28E-06	2,09E-05	3,83E-04	2,18E-06	9,06E-07	ND	ND	ND	ND	ND	ND	ND	0,00E+00	3,42E-07	8,02E-07	0,00E+00	-2,46E-06
ADPF	MJ	1,09E+02	3,14E+00	8,03E+01	1,93E+02	1,30E+00	5,86E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	2,04E-01	5,22E-01	0,00E+00	-2,12E+01
GWP	kg CO2 eq.	9,65E+00	2,03E-01	1,61E+00	1,15E+01	8,52E-02	5,57E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,34E-02	1,21E+00	0,00E+00	-1,68E+00
ODP	kg CFC11 eq.	5,59E-07	3,76E-08	4,62E-07	1,06E-06	1,51E-08	3,81E-09	ND	ND	ND	ND	ND	ND	ND	0,00E+00	2,37E-09	4,29E-09	0,00E+00	-1,12E-07
POCP	kg ethene eq.	3,71E-03	1,22E-04	4,22E-04	4,25E-03	5,14E-05	2,09E-05	ND	ND	ND	ND	ND	ND	ND	0,00E+00	8,07E-06	2,33E-05	0,00E+00	-5,17E-04
AP	kg SO2 eq.	4,03E-02	8,72E-04	4,90E-03	4,61E-02	3,75E-04	1,81E-04	ND	ND	ND	ND	ND	ND	ND	0,00E+00	5,88E-05	2,38E-04	0,00E+00	-6,20E-03
EP	kg (PO4) 3 eq.	3,86E-03	1,74E-04	4,39E-04	4,47E-03	7,36E-05	1,20E-04	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,16E-05	6,24E-05	0,00E+00	-5,38E-04

Toxicity indicators and ECI (Dutch market)

HTP	kg DCB eq.	4,37E+01	8,67E-02	4,06E-01	4,42E+01	3,59E-02	1,71E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	5,63E-03	5,82E-02	0,00E+00	-1,01E+00
FAETP	kg DCB eq.	8,47E-02	2,54E-03	1,71E-02	1,04E-01	1,05E-03	9,75E-03	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,64E-04	1,38E-02	0,00E+00	-7,24E-03
MAETP	kg DCB eq.	3,53E+02	9,07E+00	6,07E+01	4,23E+02	3,77E+00	2,85E+01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	5,92E-01	2,07E+01	0,00E+00	-5,11E+01
TETP	kg DCB eq.	6,05E-02	3,07E-04	2,01E-02	8,10E-02	1,27E-04	4,21E-04	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,99E-05	1,20E-04	0,00E+00	-2,00E-03
ECI	euro	4,67E+00	2,45E-02	1,52E-01	4,85E+00	1,03E-02	2,83E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,61E-03	6,98E-02	0,00E+00	-2,13E-01
ADPF	kg Sb eq.	5,81E-02	1,49E-03	1,37E-02	7,33E-02	6,27E-04	2,82E-04	ND	ND	ND	ND	ND	ND	ND	0,00E+00	9,84E-05	2,59E-04	0,00E+00	-1,24E-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.	1,01E+01	2,04E-01	1,65E+00	1,20E+01	8,60E-02	1,54E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,35E-02	1,21E+00	0,00E+00	-1,72E+00
GWP-fossil kg CO2 eq.	1,01E+01	2,04E-01	1,63E+00	1,19E+01	8,60E-02	5,44E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,35E-02	1,21E+00	0,00E+00	-1,72E+00
GWP-biogenic kg CO2 eq.	4,29E-02	1,24E-04	1,94E-02	6,24E-02	3,97E-05	9,93E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	6,23E-06	-7,01E-06	0,00E+00	4,05E-03
GWP-luluc kg CO2 eq.	7,95E-03	7,23E-05	4,98E-04	8,52E-03	3,15E-05	3,13E-05	ND	ND	ND	ND	ND	ND	ND	0,00E+00	4,95E-06	2,22E-05	0,00E+00	-3,98E-03
ODP kg CFC11 eq.	5,73E-07	4,71E-08	2,87E-07	9,07E-07	1,90E-08	4,30E-09	ND	ND	ND	ND	ND	ND	ND	0,00E+00	2,98E-09	5,07E-09	0,00E+00	-1,27E-07
AP mol H+ eq.	4,75E-02	1,16E-03	5,95E-03	5,46E-02	4,99E-04	2,32E-04	ND	ND	ND	ND	ND	ND	ND	0,00E+00	7,83E-05	3,17E-04	0,00E+00	-7,39E-03
EP-fresh water kg PO4 eq.	3,55E-04	1,68E-06	7,79E-06	3,64E-04	8,67E-07	2,28E-06	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,36E-07	9,72E-07	0,00E+00	-3,55E-05
EP-marine kg N eq.	6,95E-03	4,16E-04	1,07E-03	8,44E-03	1,76E-04	5,49E-05	ND	ND	ND	ND	ND	ND	ND	0,00E+00	2,76E-05	1,12E-04	0,00E+00	-1,19E-03
EP-terrestrial mol N eq.	7,87E-02	4,59E-03	1,21E-02	9,55E-02	1,94E-03	5,81E-04	ND	ND	ND	ND	ND	ND	ND	0,00E+00	3,04E-04	1,22E-03	0,00E+00	-1,32E-02
POCP kg NMVOC eq.	2,40E-02	1,31E-03	3,36E-03	2,87E-02	5,53E-04	2,19E-04	ND	ND	ND	ND	ND	ND	ND	0,00E+00	8,68E-05	3,24E-04	0,00E+00	-3,95E-03
ADP-minerals & metals kg Sb eq.	3,56E-04	5,28E-06	2,09E-05	3,82E-04	2,18E-06	9,06E-07	ND	ND	ND	ND	ND	ND	ND	0,00E+00	3,42E-07	8,02E-07	0,00E+00	-2,46E-06
ADP-fossil MJ, net calorific value	1,09E+02	3,14E+00	8,03E+01	1,93E+02	1,30E+00	5,86E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	2,04E-01	5,22E-01	0,00E+00	-2,12E+01
WDP m3 world eq. Deprived	3,01E+00	9,62E-03	8,43E-01	3,86E+00	4,64E-03	3,00E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	7,28E-04	1,38E-03	0,00E+00	-1,43E-01

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	4,24E-07	1,84E-08	2,14E-08	4,63E-07	7,72E-09	3,51E-09	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,21E-09	3,86E-09	0,00E+00	-8,23E-08
IRP	kBq U235 eq.	3,74E-01	1,37E-02	6,85E-01	1,07E+00	5,43E-03	2,39E-03	ND	ND	ND	ND	ND	ND	ND	0,00E+00	8,53E-04	1,66E-03	0,00E+00	-1,78E-02
ETP-fw	CTUe	1,81E+02	2,55E+00	2,55E+01	2,09E+02	1,16E+00	1,80E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,81E-01	3,51E+00	0,00E+00	-2,74E+01
HTP-c	CTUh	4,42E-08	9,06E-11	5,19E-10	4,48E-08	3,75E-11	1,47E-10	ND	ND	ND	ND	ND	ND	ND	0,00E+00	5,89E-12	7,78E-11	0,00E+00	-1,53E-09
HTP-nc	CTUh	1,78E-07	3,03E-09	1,69E-08	1,98E-07	1,26E-09	1,43E-09	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,98E-10	2,54E-09	0,00E+00	-2,65E-08
SQP	-	3,43E+01	2,68E+00	2,19E+01	5,88E+01	1,12E+00	1,21E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,77E-01	4,72E-01	0,00E+00	-1,82E+00

- 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	1,62E-04	8,02E-06	8,17E-07	1,71E-04	3,29E-06	5,78E-03	ND	ND	ND	ND	ND	ND	ND	0,00E+00	5,16E-07	3,78E-04	0,00E+00	2,95E-05
NHWD	kg	3,53E+00	1,94E-01	8,72E-03	3,73E+00	8,22E-02	9,83E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,29E-02	2,87E-02	0,00E+00	-2,01E-01
RWD	kg	3,14E-04	2,13E-05	1,76E-06	3,37E-04	8,51E-06	2,43E-06	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,34E-06	2,16E-06	0,00E+00	-2,13E-05
CRU	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	ND	ND	ND	ND	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	ND	ND	ND	ND	ND	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	ND	ND	ND	ND	ND	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	ND	ND	ND	ND	ND	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	ND	ND	ND	ND	ND	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	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
PERE	MJ	1,47E+01	4,50E-02	5,28E+00	2,00E+01	1,62E-02	4,65E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	2,55E-03	2,61E-02	0,00E+00	-1,30E+00
PERM	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PERT	MJ	1,47E+01	4,50E-02	5,28E+00	2,00E+01	1,62E-02	4,65E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	2,55E-03	2,61E-02	0,00E+00	-1,30E+00
PENRE	MJ	1,18E+02	3,33E+00	8,28E+01	2,04E+02	1,38E+00	5,86E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	2,16E-01	5,58E-01	0,00E+00	-2,30E+01
PENRM	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PENRT	MJ	1,18E+02	3,33E+00	8,28E+01	2,04E+02	1,38E+00	5,86E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	2,16E-01	5,58E-01	0,00E+00	-2,30E+01
SM	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	3,35E-03	ND	ND	ND	ND	ND	ND	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	ND	ND	ND	ND	ND	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	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
FW	m3	9,55E-02	3,55E-04	2,91E-02	1,25E-01	1,58E-04	1,55E-03	ND	ND	ND	ND	ND	ND	ND	0,00E+00	2,48E-05	1,50E-04	0,00E+00	-6,72E-03

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	ND	ND	ND	ND	ND	ND	ND	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	0,00E+00	0,00E+00	0,00E+00	ND	ND	ND	ND	ND	ND	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

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

All materials (A1) required to produce the SYNTHETIC PRESS FITTING WITHOUT MESSING or INOX INSERT are included, as is the transport 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 SYNTHETIC PRESS FITTING WITHOUT MESSING or INOX INSERT is done by injection molding. In the next stage, the assembly and manual fitting of an O-ring is done. The finished products eventually go to the sales markets. The waste generated during the production process is due to waste treatment.

Components Product (>1%)	(kg/%)
Polyvinylfluoride	43,01%
Chromium steel	56,42%

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 (A5). Sometimes at the construction site, the products shall be made to size. This usually generates 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 and cardboard	75%	10%	15%
Wood	38%	23%	39%
Metals	66%	0%	34%

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). This assumes that 10% will be recycled and 90% incinerated.

The HENCO SYNTHETIC PRESS FITTING WITHOUT MESSING or INOX INSERT is made of PVDF and brass or stainless steel. Separately, all materials used are easy to recycle. The technology to separate these materials is currently only available on a small scale. At the end of the life cycle, the composite fittings are often soiled by other building materials, which makes recycling more difficult. That is why the most important destination is waste incineration with energy recovery. A limited part is also deposited for the reasons stated above.



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.
- [4] 'NEN-EN 15804+A2: Duurzaamheid van bouwwerken - Milieuverklaringen van producten - Basisregels voor de productgroep bouwproducten', NEN-EN 15804:2012+A2:2019.
- [5] 'Bepalingsmethode Milieuprestatie Bouwwerken', Stichting Nationale Milieudatabase, versie 1.1, maart 2022.
- [6] 'NMD-Toetsingsprotocol opname data in de Nationale Milieudatabase, op basis van de Bepalingsmethode Milieuprestatie Bouwwerken', Stichting Nationale Milieudatabase, versie 1.1, maart 2022
- [7] Ecochain 3.2.12 web: <http://app.Ecochain.com>.
- [8] De Bruyn, S.M., Korteland, M.H., Markowska, A.Z., Davidson, M.D., De Jong, F.L., Bles, M., Sevenster, M.N. (2010) "Handboek Schaduwprijzen. Waardering en weging van emissies en milieueffecten", CE Delft.
- [9] Van Harmelen, A.K., Korenromp, R.H.J., Ligthart, T.N., Van Leeuwen, S.M.H., Van Gijlswijk, R.N. (2004) "Toxiciteit heeft z'n prijs. Schaduwprijzen voor (eco-)toxiciteit en uitputting van abiotische grondstoffen binnen DuboCalc", TNO.
- [10] TEPPFA, Environmental Product Declaration – Polymer/Al/Polymer Composite Pipe System For Hot And Cold Water In The Building, 2020, https://www.teppfa.eu/wp-content/uploads/HC02_Revision-2_Polymer-composite_EPD_2020_final-1.pdf
- [11] Nederlandse Milieu Database, Forfaitaire waarden voor verwerking-scenario's einde leven behorende bij: Bepalingsmethode Milieuprestatie Bouwwerken, versie mei 2022
- [12] Environmental Product Declaration: POLYMER/AL/POLYMER COMPOSITE PIPE SYSTEM FOR HOT AND COLD WATER IN THE BUILDING, TEPPFA 2019

