Environmental
Product
Declaration

ISO14025+EN15804+A2 Bepalingsmethode
'Milieuprestatie Bouwwerken' versie 1.2-januari 2025

This declaration is for:

Splashproof socket-outlet 16 A/250 Vac with side earthing and shutters mounted in a splashproof surface-mounting box

Provided by:

Niko





MRPI® registration:
00032.2026.1.0
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Stichting MRPI
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www.mrpi.nl

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COMPANY INFORMATION

Niko
Industriepark West 40
BE-9100

Sint-Niklaas
Belgium
+32-37789000

https://www.niko.eu

MRPI® REGISTRATION

00032.2026.1.0

DATE OF THIS ISSUE

21-07-2026

EXPIRY DATE

21-07-2031

SCOPE OF DECLARATION

This MRPI®-EPD certificate is verified by Roijen, Bob,SGS Intron B.V.. The LCA study has been done by Janssen, An, Enperas. The certificate is based on a LCA-dossier According to ISO14025+EN15804+A2 Bepalingsmethode ‘Milieuprestatie Bouwwerken’ versie 1.2-januari 2025. It is verified according to the. 'Verification protocol for MRPI LCA project report & EPD 16th of April 2026, V. 5.3'. EPDs of construction products may not be comparable if they do not comply with EN15804+A2.

PROGRAM OPERATOR

Stichting MRPI
Kingsfordweg 151
1043 GR
Amsterdam

PRODUCT

Splashproof socket-outlet 16 A/250 Vac with side earthing and shutters mounted in a splashproof surface-mounting box

DECLARED AND FUNCTIONAL UNIT

Piece (1 piece)

DESCRIPTION OF PRODUCT

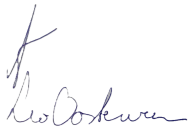
The product is a splashproof socket-outlet 16 A/250 Vac with side earthing and shutters that is mounted in a splashproof surface-mounting box. The products are designed and installed in the fixed installation to provide power to appliances within a residential environment. The entire unit is splashproof, which makes it extremely well-suited for use in wet locations.

VISUAL PRODUCT



MORE INFORMATION

https://www.niko.eu/nl

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 ISO14025+EN15804+A2 Bepalingsmethode ‘Milieuprestatie Bouwwerken’ versie 1.2-januari 2025 Internal: External: X
	Independent verifier: Roijen, Bob, SGS Intron B.V..
	
	[1] PCR = Product Category Rules

DETAILED PRODUCT DESCRIPTION

The product is a splashproof socket-outlet 16 A/250 Vac with side earthing and shutters, mounted in a splashproof surface-mounting box. It consists of two parts: a mechanism and a surface-mounting box. The entire unit is splashproof, which makes it extremely well-suited for use in wet locations.

In this EPD, one reference socket-outlet and 23 variants are considered (see table below). The reference socket-outlet consists of a mechanism with plug-in terminals and a splashproof single surface-mounting box with one M20 input with cable gland for one function. The variant socket-outlets are characterised by small differences in type and composition of the mechanism and/or the surface-mounting box and consist of either a mechanism with plug-in terminals or a mechanism with screw-type terminals and either a splashproof single surface-mounting box with one M20 input with cable gland for one function or a splashproof single flush-mounting box for one function. Both parts come in three colours: grey, white and black. The screws for mounting the mechanism to the surface mounting-box are included in the product, while the screws for mounting the surface mounting-box to the wall are not included in the product and thus also excluded from this EPD. The reference socket-outlet is grey and corresponds to the most sold splashproof socket-outlet in The Netherlands (good for a market share of 23%). The total market share for these 24 socket-outlets is 70%. The results given in the EPD are the results for the reference socket-outlet. The environmental impact of the 23 variant products all fall within +/-20% against the results for the reference socket-outlet, as is required by the NMD Bepalingsmethode (2025).

Overview of the 24 variants of splashproof socket-outlets mounted in a splashproof surface-mounting box	reference/variant
700-36805 - 700-84151	reference product
7XX-36800 - 7XX-84151	3 variants
7XX-36805 - 7XX-84151	2 variants
7XX-36870 - 7XX-84151	3 variants
7XX-36875 - 7XX-84151	3 variants
7XX-36800 - 7XX-73000	3 variants
7XX-36805 - 7XX-73000	3 variants
7XX-36870 - 7XX-73000	3 variants
7XX-36875 - 7XX-73000	3 variants
7XX can refer to the following colours: 700 = grey, 701 = white, 761 = black	

Production process:
The manufacturing process for socket-outlets in the NIKO factory at Sint-Niklaas, Belgium, consists of two steps. In a first step, the raw materials are put into shape. This is done by pressing metal bands and sheets into the right dimensions and by injection moulding of plastic grains into the different needed parts. In a second step, subassemblies are automatically or manually assembled and combined into one end product. At the end, the final product is packed so that it is ready for transport to the customers.

Reference service life:
The reference service life (RSL) of a socket-outlet is estimated at 20 years. These 20 years are based on the reference service life, taken into account in the specific rules for electrical switch gear and control gear solutions of the French PEP ecopassport® programme (PSR 0005, 2023), which also serve as a guideline for this EPD.

Installation:
The splashproof socket-outlets are simply mounted in a splashproof surface-mounting box using the incorporated screws with a combination screwhead. The surface-mounting box is also installed using screws that are not supplied with the product. The electrical wiring is either inserted into the plug-in terminals or into the screw-type terminals of the socket-outlet. The installation can be done manually using a manual screwdriver or by using an electric machine.

Technical data/Physical characteristics
The most important technical properties of a splashproof socket-outlet 16 A/250 Vac with side earthing and shutters, mounted in a splashproof surface-mounting box, are given in the table below. More specific information (e.g. technical sheets) on each of the components, considered in the EPD, can be found on the manufacturer's website (www.niko.eu).

Technical property	Value	Unit	Standard
Current	16	A	IEC 62986:2017
Voltage	250	Vac	IEC 62986:2017
protection degree of the combination of a splashproof socket-outlet and a splashproof surface-mounting box	IP55		IEC 60529:1989+AMD1:1999+ AMD2:2013 CSV
impact resistance of the combination of a splashproof socket-outlet and a splashproof surface-mounting box	IK07		IEC 62262:2002

The splashproof socket-outlet 16 A/250 Vac with side earthing and shutters mounted in a splashproof surface-mounting box consists of two separate parts: a mechanism with plug-in terminals or with screw-type terminals and a surface-mounting box. The composition of the reference splashproof socket-outlet is given in the table below. The variant splashproof socket-outlets are characterised by small differences in type and composition of the mechanism and/or the surface-mounting box.

Component (> 1%)	(kg / %)
mechanism	0,081
surface-mounting box	0,077
steel	2%
brass	7%
plastics	91%

Biogenic carbon content	Unit	Amount of uptake per functional unit
Biogenic carbon content in product	Kg C	0
Biogenic carbon content in accompanying packaging	Kg C	0,0368
Note that 1 kg of biogenic carbon is equivalent to 44 / 12 kg of CO2.		

SCOPE AND TYPE

Background database: Ecoinvent 3.9.1
Method: Cut-off by classification
Software: Simapro 10.2
Characterization factor: Environmental Footprint (EF) 3.1
Yes

This is a specific EPD for a splashproof socket-outlet 16 A/250 Vac with side earthing and shutters, mounted in a splashproof surface-mounting box, produced by Niko NV in Sint-Niklaas, Belgium. The socket-outlet is installed in The Netherlands and at its end-of-life waste is treated according to the Dutch end-of-life scenarios. As a result, the EPD is representative for the Dutch market.

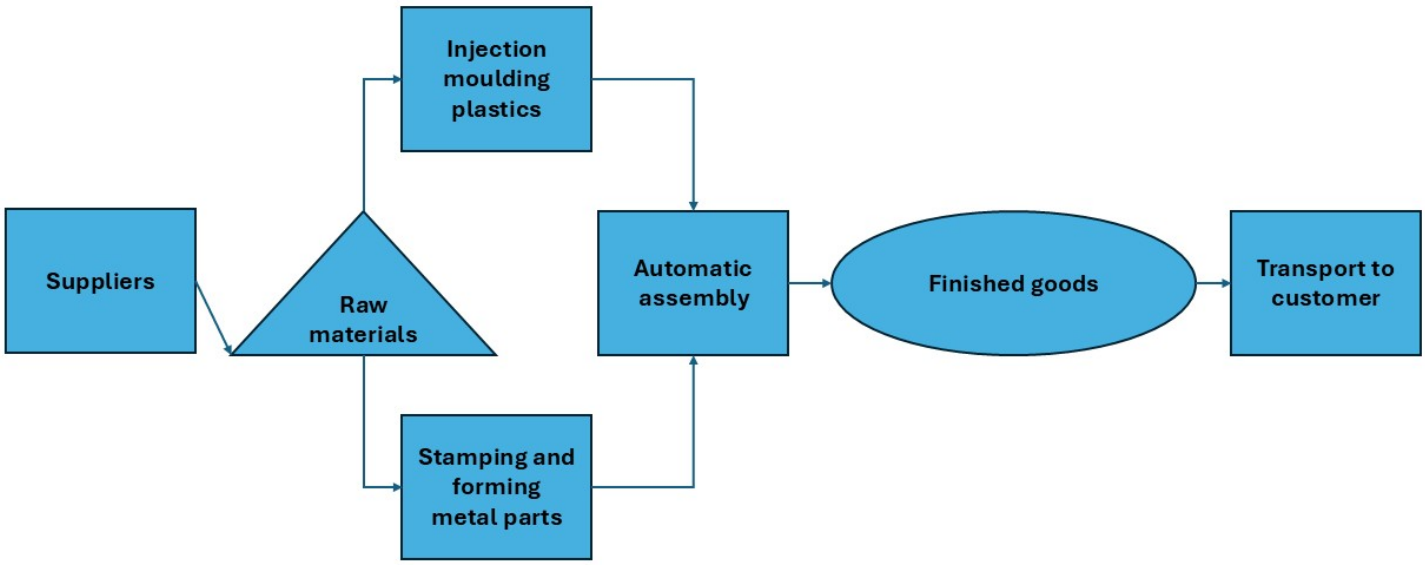
Company-specific data for the product stage have been collected by Niko NV and were provided to Enperas NV through a data collection questionnaire. Enperas NV uses publicly available generic data for all background processes, such as the production of electricity, transportation by means of a specific truck, etc. Primary data is used for modules A1, A2, A3 and A5. The rest of the study is based on scenarios (module A4, modules C1-C4 and module D).

The LCI source used in this EPD is the Ecoinvent v3.9.1 Cut-off database for calculation of the set A2 indicators, as is required by the NMD Bepalingsmethode (January 2025).

For the calculation of the LCA results, the software program SimaPro 10.2 (PRé Consultants, 2025) has been used, as well as the Enperas Quadrant LCA tool for Niko socket-outlets and switches (Enperas, 2025). The EF3.1 characterisation factors from EC-JRC were applied where relevant.

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	x	x	x	x	x	ND	ND	x	x	x	x	x

X = Modules Assesed
ND = Not Declared



REPRESENTATIVENESS (IF AVERAGE)

The data used for the LCA study and the EPD is representative for the production of a splashproof socket-outlet 16 A/250 Vac with side earthing and shutters, mounted in a splashproof surface-mounting box, produced by Niko NV in Sint-Niklaas, Belgium, and installed in The Netherlands. 24 variants of this type of socket-outlets have been considered and the environmental impacts declared in this EPD correspond to the reference product. The impacts of the variant socket-outlets fall within +/-20% in comparison to the reference product, as is required by the NMD Bepalingsmethode (2025).

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	5.01E-01	2.72E-02	7.91E-02	6.07E-01	5.71E-03	1.42E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	ND	ND	0.00E+00	3.10E-03	2.88E-04	2.79E-01	-1.10E+03
GWP-fossil	kg CO2 eq	5.00E-01	2.72E-02	2.09E-01	7.37E-01	5.71E-03	1.48E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	ND	ND	0.00E+00	3.10E-03	2.87E-04	2.79E-01	-6.66E+02
GWP-biogenic	kg CO2 eq	3.67E-04	8.77E-06	-1.33E-01	-1.32E-01	1.89E-06	1.41E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	ND	ND	0.00E+00	1.03E-06	9.76E-07	2.81E-05	0.00E+00
GWP-luluc	kg CO2 eq	3.40E-04	1.34E-05	2.35E-03	2.70E-03	2.79E-06	1.31E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	ND	ND	0.00E+00	1.52E-06	3.47E-07	2.03E-05	-4.32E+02
ODP (A2)	kg CFC11 eq	7.34E-08	5.92E-10	9.23E-09	8.33E-08	1.25E-10	9.12E-11	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	ND	ND	0.00E+00	6.81E-11	4.51E-12	1.64E-09	-2.35E+02
AP mol H+	mol H+ eq	6.29E-03	5.95E-05	7.85E-04	7.13E-03	2.67E-05	9.81E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	ND	ND	0.00E+00	1.45E-05	3.46E-06	1.10E-04	-1.28E+02
EP-freshwater	kg P eq	2.78E-05	2.21E-07	1.97E-05	4.78E-05	4.69E-08	3.20E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	ND	ND	0.00E+00	2.55E-08	1.46E-08	5.48E-07	-6.94E+01
EP-marine	kg N eq	5.62E-04	1.46E-05	3.23E-04	8.99E-04	1.05E-05	3.48E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	ND	ND	0.00E+00	5.70E-06	7.52E-07	3.98E-05	-3.77E+01
EP-terrestrial	mol N eq	6.83E-03	1.52E-04	2.17E-03	9.16E-03	1.13E-04	3.81E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	ND	ND	0.00E+00	6.16E-05	8.66E-06	4.01E-04	-2.05E+01
POCP kg NMVOC	kg NMVOC eq	2.36E-03	9.23E-05	6.89E-04	3.14E-03	3.96E-05	1.17E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	ND	ND	0.00E+00	2.15E-05	2.56E-06	1.08E-04	-1.12E+01
ADP-minerals & metals	kg Sb eq	7.46E-05	8.89E-08	1.70E-06	7.64E-05	1.78E-08	2.42E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	ND	ND	0.00E+00	9.66E-09	2.02E-08	9.71E-08	-6.06E+00
ADP-fossil	MJ, net calorific value	1.09E+01	3.86E-01	5.69E+00	1.70E+01	8.24E-02	2.11E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	ND	ND	0.00E+00	4.48E-02	3.87E-03	1.51E-01	-3.30E+00
WDP	m3 world eq. Deprived	2.39E-01	1.59E-03	1.01E-01	3.42E-01	3.59E-04	2.54E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	ND	ND	0.00E+00	1.95E-04	5.09E-05	4.18E-03	-1.79E+00

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
AP-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 withthe 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	2.79E-08	2.02E-09	7.70E-09	3.76E-08	5.61E-10	1.32E-10	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	ND	ND	0.00E+00	3.05E-10	4.62E-11	8.74E-10	-9.77E-01
IRP	kBq U235 eq	2.20E-02	1.96E-04	4.72E-02	6.94E-02	4.27E-05	3.41E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	ND	ND	0.00E+00	2.32E-05	1.16E-05	5.30E-04	-5.29E-01
ETP-fw	CTUe	7.69E+00	1.91E-01	1.20E+00	9.08E+00	4.06E-02	2.62E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	ND	ND	0.00E+00	2.20E-02	3.08E-03	7.18E-01	-2.85E-01
HTP-c	CTUh	1.47E-09	1.24E-11	8.63E-11	1.57E-09	3.07E-12	3.62E-12	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	ND	ND	0.00E+00	1.67E-12	4.79E-13	5.60E-11	-1.63E-01
HTP-nc	CTUh	6.81E-08	2.74E-10	2.29E-09	7.06E-08	6.39E-11	4.18E-11	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	ND	ND	0.00E+00	3.47E-11	2.22E-11	6.25E-10	-8.14E-02
SQP	-	2.31E+00	2.34E-01	4.47E+00	7.01E+00	6.19E-02	1.33E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	ND	ND	0.00E+00	3.37E-02	7.49E-03	6.11E-02	-4.07E-02

PM = Potential incidence of disease due to particulate matter 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 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
HWD	kg	3.53E-05	2.46E-06	2.29E-05	6.07E-05	5.19E-07	1.10E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	ND	ND	0.00E+00	2.82E-07	2.10E-08	1.00E-07	-2.76E-06
NHWD	kg	7.49E-02	1.92E-02	2.90E-02	1.23E-01	5.21E-03	1.83E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	ND	ND	0.00E+00	2.83E-03	9.95E-05	7.99E-03	-1.02E-02
RWD	kg	7.71E-06	1.27E-07	3.83E-05	4.62E-05	2.77E-08	2.38E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	ND	ND	0.00E+00	1.51E-08	8.89E-09	3.46E-08	-6.05E-07
CRU	kg	0.00E+00	0.00E00	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	ND	ND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	kg	0.00E+00	0.00E00	6.09E-04	6.09E-04	0.00E+00	8.17E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	ND	ND	0.00E+00	0.00E+00	1.28E-02	0.00E+00	0.00E+00
MER	kg	0.00E+00	0.00E00	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	ND	ND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EEE	MJ	0.00E+00	0.00E00	5.49E-04	5.49E-04	0.00E+00	1.25E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	ND	ND	0.00E+00	0.00E+00	0.00E+00	6.35E-01	0.00E+00
ETE	MJ	0.00E+00	0.00E00	1.10E-03	1.10E-03	0.00E+00	2.50E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	ND	ND	0.00E+00	0.00E+00	0.00E+00	1.09E+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 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	5.00E-01	5.97E-03	3.73E-02	5.43E-01	1.28E-03	1.25E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	ND	ND	0.00E+00	6.97E-04	6.58E-04	5.39E-03	-1.82E+00
PERM	MJ	1.06E-02	0.00E00	1.43E+00	1.44E+00	0.00E+00	-1.42E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	ND	ND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	MJ	5.11E-01	5.97E-03	1.47E+00	1.98E+00	1.28E-03	-1.30E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	ND	ND	0.00E+00	6.97E-04	6.58E-04	5.39E-03	-1.82E+00
PENRE	MJ	7.08E+00	3.86E-01	5.69E+00	1.32E+01	8.24E-02	2.10E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	ND	ND	0.00E+00	4.48E-02	3.87E-03	3.59E+00	-2.58E-01
PENRM	MJ	3.80E+00	0.00E00	-6.72E-05	3.80E+00	0.00E+00	6.72E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	ND	ND	0.00E+00	0.00E+00	0.00E+00	-3.53E+00	0.00E+00
PENRT	MJ	1.09E+01	3.86E-01	5.69E+00	1.70E+01	8.24E-02	2.11E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	ND	ND	0.00E+00	4.48E-02	3.87E-03	5.88E-02	-2.58E-01
SM	kg	0.00E+00	0.00E00	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	ND	ND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.45E-02
RSF	MJ	0.00E+00	0.00E00	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	ND	ND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	MJ	0.00E+00	0.00E00	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	ND	ND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	m3	1.68E-02	5.21E-05	2.81E-03	1.97E-02	1.16E-05	1.35E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	ND	ND	0.00E+00	6.32E-06	1.97E-06	1.27E-04	-1.93E-04

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

CALCULATION RULES

Allocation:
At Niko NV, different products (i.e. socket-outlets and switches) are produced. Only facility level data were available for the use of electricity, natural gas, water and ancillary materials. The facility level data have been allocated to the analysed product using their respective annual production volume, expressed in kg (physical relationship), therefore mass allocation is applied. Finally, the amounts were recalculated regarding the weight of the in this EPD considered socket-outlets.

Considered to be below cut-off:
The following processes/materials are not considered in this LCA study due to missing data and/or low volumes or weights of the materials:
• Transport of packaging of raw materials to the Niko factory in module A1 (no data available and considered to be below cut-off);
• Infrastructure and land use in module A3 (no data available);
• Transport of ancillary materials in module A3 (considered using Ecoinvent v3.9.1 market processes or considered to be below cut-off);
• Environmental impacts caused by the personnel of the production plants, e.g. waste from the cafeteria and sanitary installations, accidental pollution caused by human mistakes or environmental effects caused by commuter traffic.

In all cases, it is assumed that the cut-off criteria of EN 15804 are met.

Manufacturer specific data have been collected for the year 2024.

DATA QUALITY

The data quality assessment is executed according to the data quality system described in Annex D of the NMD-Toetsingsprotocol (July 2020), as well as according to EN15804+A2 Annex E (table E.2), where the geographical, technological and time representativeness of the most relevant flows (>80%) is assessed.
The used data refer to the year 2024. The data for the foreground processes are based on input output analyses at the Belgian production site of the here considered hydro socket-outlets. The primary data collection was done thoroughly, all flows have been considered. For modelling foreground and background data, the Ecoinvent v3.9.1 Cut-off by classification database has been used as basic database. Data quality of foreground data is good for most of the relevant flows, although in some cases, no specific data records, exactly representing the raw material, were available in the database, so that the raw material had to be composed using available Ecoinvent v3.9.1 Cut-off by classification data records. For background data, relevant Ecoinvent v3.9 Cut-off data records have been used. The data quality can be considered as good.

POWER MIX

The Belgian residual electricity mix and electricity generated with PV panels have been used to model life cycle stage A3, while the Belgian electricity mix (consumption mix + import) has been used to model electricity use in life cycle stages A5, C3, C4 and D. The used data records are the Ecoinvent v3.9.1 data record ‘Electricity, low voltage {BE}| electricity, low voltage, residual mix | Cut-off, U’ with GWP-total equal to 0,200 kg CO2 eq./kWh and 'Electricity, low voltage {BE}| electricity production, photovoltaic, 3kWp slanted-roof installation, single-Si, panel, mounted | Cut-off, U' with GWP-total equal to 0,124 kg CO2 eq./kWh for stage A3 and the Ecoinvent v3.9.1 data record ‘Electricity, low voltage {BE}| market for | Cut-off, U’ with GWP-total equal to 0,206 kg CO2 eq./kWh for stages A5, C3, C4 and D. For the other energy sources, European data from the Ecoinvent v3.9.1 Cut-off database have been used.

SCENARIOS AND ADDITIONAL TECHNICAL INFORMATION

A1 – RAW MATERIAL SUPPLY
This module takes into account the extraction and processing of all raw materials and energy which occur upstream to the studied manufacturing process.

A2 – TRANSPORT TO THE MANUFACTURER
The raw materials are transported to the manufacturing site of the socket-outlets by truck (freight, lorry, 16-32 ton, EURO 6). EURO 6 trucks are the most used in Belgium (Statbel, 2023).

A3 – MANUFACTURING
This module takes into account the production process of the socket-outlets. In a first step, the raw materials are put into shape. This is done by pressing metal bands and sheets into the right dimensions and by injection moulding of plastic grains into the different needed parts. In a second step, subassemblies are automatically or manually assembled and combined into one end product. At the end, the final product is packed, so that it is ready for transport to the customers. All inputs (e.g. energy use, water consumption, ancillary materials, packaging of final product) and outputs (e.g. emissions, production waste and waste from packaging of raw materials) are taken into account. The waste treatment of the packaging of the raw materials is modelled according to the default end-of-life scenarios in Belgium.

A4 – TRANSPORT TO THE BUILDING SITE
The final product is for 100% transported from the factory in Sint-Niklaas to the installation site in The Netherlands (Utrecht) over a distance of 155 km by a truck, unspecified, according to the requirements within the Dutch NMD Bepalingsmethode (2025).

A5 - INSTALLATION IN THE BUILDING
The splashproof socket-outlets are simply mounted in a splashproof surface-mounting box using the incorporated screws with a combination screwhead. The surface-mounting box is also installed using screws that are not supplied with the product and thus not considered in this EPD. The installation can be done manually using a manual screwdriver or by using an electric machine. In this EPD, manual application without any energy consumption is considered. Furthermore, packaging materials are released. The waste treatment of the packaging is modelled according to the default end-of-life scenarios of the Dutch NMD Bepalingsmethode. Additionally, 0,025% material losses are taken into account.

B1 - USE PHASE
The socket-outlets do not have any impact during their entire use phase. Consequently, there are no environmental impacts related to this module.

B2 - MAINTENANCE
The socket-outlets do not require any maintenance during their entire service life. Consequently, there are no environmental impacts related to this module.

B3 - REPAIR
The socket-outlets do not require any repair during their entire service life. Consequently, there are no environmental impacts related to this module.

B4 - REPLACEMENT
The socket-outlets do not require any replacement during their entire service life. Consequently, there are no environmental impacts related to this module.

B5 - REFURBISHMENT
The socket-outlets do not require any refurbishment during their entire service life. Consequently, there are no environmental impacts related to this module.

C1-C4: END-OF-LIFE
The default end-of-life (EOL) scenarios of the Dutch NMD Bepalingsmethode have been applied to the different components of the splashproof socket-outlets, i.e. steel parts, brass parts and plastic parts.

C1: It is assumed that no impacts are related to the demolition of the product, since the different parts can be easily dismantled manually.

C2: Transport of final product components to sorting, landfill and incineration according to the Dutch default scenarios.

C3-C4: EOL of final product components according to the Dutch default scenarios: steel and brass parts are 90% recycled, 5% incinerated and 5% landfilled and plastic parts are 80% incinerated and 20% landfilled.

MODULE D - LOADS AND BENEFITS BEYOND THE SYSTEM BOUNDARIES
In module D, the following waste streams originating from the final product and its packaging are considered to be recycled after their End-of-Waste point: cardboard packaging (of which 90% is recycled), steel parts of the socket-outlet (of which 90% is recycled) and brass parts of the socket-outlet (of which 90% is recycled). Furthermore, module D contains energy recovery through the process of incineration of the following waste from packaging materials disposed off during the installation phase (A5) and some parts of the socket-outlet at its end-of-life (C4): cardboard packaging (of which 9% is incinerated) and plastic parts of the product (of which 80% is incinerated). The EOL waste treatments are according to the Dutch default scenarios within the NMD Bepalingsmethode for the different waste materials of the socket-outlet and to the Eurostat (2023) data for packaging waste treatment in The Netherlands.

DECLARATION OF SVHC

The Niko splashproof socket-outlets, considered in this LCA study, have been evaluated against the REACH Regulation (EC) 1907/2006 of the European Parliament. This evaluation showed that the products referenced as well as articles contained within the products, do contain some of the reportable REACH Substances of Very High Concern for authorisation (SVHCs) over the thresholds as updated by ECHA on 21/01/2025 (https://echa.europa.eu/candidate-list-table). More specifically, there is lead (Pb) present in the rivets of the surface-mounting boxes (i.e. 7XX-84151 and 7XX-73000).

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