ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH EN 15804+A2 & ISO 14025 / ISO 21930

NM Golv 80
Nils Malmgren AB

EPD HUB, HUB-2057
Published on 27.10.2024, last updated on 27.10.2024, valid until 27.10.2029

Created with One Click LCA

GENERAL INFORMATION

MANUFACTURER

Manufacturer	Nils Malmgren AB
Address	Valnäsgatan 6, 442 52 Ytterby
Contact details	info@nilsmalmgren.se
Website	https://www.nilsmalmgren.se/

EPD STANDARDS, SCOPE AND VERIFICATION

Program operator	EPD Hub, hub@epdhub.com
Reference standard	EN 15804+A2:2019 and ISO 14025
PCR	EPD Hub Core PCR Version 1.1, 5 Dec 2023
Sector	Construction product
Category of EPD	Third party verified EPD
Scope of the EPD	Cradle to gate with options, A4-A5, and modules C1-C4, D
EPD author	Oscar Ternstrom
EPD verification	Independent verification of this EPD and data, according to ISO 14025: ☐ Internal verification ☑ External verification
EPD verifier	Imane Uald lamkaddam, as an authorized verifier acting for EPD Hub Limited

The manufacturer has the sole ownership, liability, and responsibility for the EPD. EPDs within the same product category but from different programs may not be comparable. EPDs of construction products may not be comparable if they do not comply with EN 15804 and if they are not compared in a building context.

PRODUCT

Product name	NM Golv 80
Additional labels	NM Floor 80
Product reference	
Place of production	Ytterby, Sweden
Period for data	From 01/01 2023 to 31/12 2023
Averaging in EPD	No averaging
Variation in GWP-fossil for A1-A3	%

ENVIRONMENTAL DATA SUMMARY

Declared unit	1 kg of Golv 80 epoxy resin
Declared unit mass	1 kg
GWP-fossil, A1-A3 ($kgCO_2e$)	3,56E+00
GWP-total, A1-A3 ($kgCO_2e$)	3,48E+00
Secondary material, inputs (%)	1.87
Secondary material, outputs (%)	0
Total energy use, A1-A3 (kWh)	15
Net freshwater use, A1-A3 (m^3)	0.08

PRODUCT AND MANUFACTURER

ABOUT THE MANUFACTURER

Nils Malmgren AB formulates and manufactures products based on epoxy and associated hardeners. Our ability to formulate means we can adapt to existing needs and develop customized solutions

PRODUCT DESCRIPTION

NM Golv 80 is a coating designed for heavy pedestrian traffic and light rubber-wheel truck traffic. NM Golv 80 gives a smooth, tight and very wear resistant surface with god flexibility. NM Golv 80 is suitable in warehouses, shops, light industry, hospitals, corridors, sports halls, etc.

Further information can be found at https://www.nilsmalmgren.se/.

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass %	Material origin
Metals	7	Europe
Minerals	8	Sweden
Fossil materials	85	China
Bio-based materials	0	

BIOGENIC CARBON CONTENT

Product's biogenic carbon content at the factory gate

Biogenic carbon content in product, kg C	0
Biogenic carbon content in packaging, kg C	0.029

FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	1 kg of Golv 80 epoxy resin
Mass per declared unit	1 kg
Functional unit	
Reference service life	

SUBSTANCES, REACH - VERY HIGH CONCERN

The product does not contain any REACH SVHC substances in amounts greater than 0,1 % (1000 ppm).

PRODUCT LIFE-CYCLE

SYSTEM BOUNDARY

This EPD covers the life-cycle modules listed in the following table.

Product stage			Assembly stage		Use stage							End of life stage				Beyond the system boundaries		
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D		
×	×	×	×	×	MND	MND	MND	MND	MND	MND	MND	×	×	×	×	×		
Raw materials	Transport	Manufacturing	Transport	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	Deconstruction/ demolition	Transport	Waste processing	Disposal	Reuse	Recovery	Recycling

Modules not declared = MND. Modules not relevant = MNR

MANUFACTURING AND PACKAGING (A1-A3)

The environmental impacts considered for the product stage cover the manufacturing of raw materials used in the production as well as packaging materials and other ancillary materials. Also, fuels used by machines, and handling of waste formed in the production processes at the manufacturing facilities are included in this stage. The study also considers the material losses occurring during the manufacturing processes as well as losses during electricity transmission.

The production of the epoxy product begins with the on-site manufacturing of both the epoxy resin and the hardener. The raw materials for the resin and hardener are first transported to separate storage tanks, where they are precisely measured and fed into dedicated mixing systems. Each component is carefully mixed in its own system to ensure a consistent quality.

After mixing, the epoxy mixture is dispensed into metal buckets, ready for further use or distribution.
The environmental impacts considered for the production stage include the manufacturing of the raw materials used to produce the epoxy resin and hardener, as well as other ancillary materials such as lubricating oils and water. Additionally, the use of fuels for machinery and the management of waste generated during the production processes at the manufacturing facility are included in this stage. The study also accounts for energy losses during electricity transmission.

Transportation from suppliers is also considered.

TRANSPORT AND INSTALLATION (A4-A5)

Transportation impacts occurred from final products delivery to construction site (A4) cover fuel direct exhaust emissions, environmental impacts of fuel production, as well as related infrastructure emissions.

The transportation distance is defined according to the PCR. Average distance of transportation from production plant to building site is assumed as 100 km and the transportation method is assumed to be lorry. Vehicle capacity utilization is assumed to be 100 % which means full load. In reality, it may vary but as transportation emissions in total results is small, the variety in load is assumed to be negligible. Empty returns are not taken into account as it is assumed that return trip is used by the transportation company to serve the needs of other clients. Transportation does not cause losses as product are

packaged properly. Also, volume capacity utilisation factor is assumed to be 100 % for the nested packaged products.

PRODUCT USE AND MAINTENANCE (B1-B7)

This EPD does not cover the use phase.
Air, soil, and water impacts during the use phase have not been studied.
Air, soil, and water impacts during the use phase have not been studied.

PRODUCT END OF LIFE (C1-C4, D)

Due to the fact that separating Epoxy resin from the host surface after curing, no kind of recycling is possible. Assmumed for this scenario is that the product is landfilled after end of life.

Distance to landfill is assmumed to be 50 km.

MANUFACTURING PROCESS

Materials	Transport	Manufacturing	Construction	End of Life
• Tap water • Raw material production	• Transport to facility	• Electricity • Fuel for machines	• Transport to site	• De-construction • Landfill

LIFE-CYCLE ASSESSMENT

CUT-OFF CRITERIA

The study does not exclude any modules or processes which are stated mandatory in the reference standard and the applied PCR. The study does not exclude any hazardous materials or substances. The study includes all major raw material and energy consumption. All inputs and outputs of the unit processes, for which data is available for, are included in the calculation. There is no neglected unit process more than 1% of total mass or energy flows. The module specific total neglected input and output flows also do not exceed 5% of energy usage or mass.

ALLOCATION, ESTIMATES AND ASSUMPTIONS

Allocation is required if some material, energy, and waste data cannot be measured separately for the product under investigation. All allocations are done as per the reference standards and the applied PCR. In this study, allocation has been done in the following ways:

Data type	Allocation
Raw materials	No allocation
Packaging material	No allocation
Ancillary materials	No allocation
Manufacturing energy and waste	No allocation

AVERAGES AND VARIABILITY

Type of average	No averaging
Averaging method	Not applicable
Variation in GWP-fossil for A1-A3	%

This EPD is product and factory specific and does not contain average calculations.

LCA SOFTWARE AND BIBLIOGRAPHY

This EPD has been created using One Click LCA EPD Generator. The LCA and EPD have been prepared according to the reference standards and ISO 14040/14044. The EPD Generator uses Ecoinvent v3.8, Plastics Europe, Federal LCA Commons and One Click LCA databases as sources of environmental data.

ENVIRONMENTAL IMPACT DATA

CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, PEF

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP – total[1)]	kg CO_2e	2,95E+00	9,55E-02	4,31E-01	3,48E+00	1,08E-02	1,40E-01	MND	MND	MND	MND	MND	MND	MND	3,31E-04	4,69E-03	0,00E+00	1,05E-02	-3,58E-01
GWP – fossil	kg CO_2e	2,94E+00	9,54E-02	5,34E-01	3,56E+00	1,08E-02	3,70E-02	MND	MND	MND	MND	MND	MND	MND	3,31E-04	4,69E-03	0,00E+00	1,05E-02	-3,57E-01
GWP – biogenic	kg CO_2e	0,00E+00	0,00E+00	-1,03E-01	-1,03E-01	0,00E+00	1,03E-01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
GWP – LULUC	kg CO_2e	1,53E-02	4,41E-05	8,28E-04	1,62E-02	4,00E-06	5,36E-06	MND	MND	MND	MND	MND	MND	MND	3,30E-08	1,73E-06	0,00E+00	1,07E-05	-2,74E-04
Ozone depletion pot.	kg CFC_{-11}e	4,81E-07	2,12E-08	2,80E-08	5,31E-07	2,49E-09	8,06E-10	MND	MND	MND	MND	MND	MND	MND	7,07E-11	1,08E-09	0,00E+00	3,20E-09	-1,56E-08
Acidification potential	mol H^+e	2,07E-02	1,11E-03	2,71E-03	2,45E-02	4,59E-05	4,05E-05	MND	MND	MND	MND	MND	MND	MND	3,44E-06	1,99E-05	0,00E+00	8,88E-05	-2,18E-03
EP-freshwater[2)]	kg Pe	2,12E-04	6,65E-07	2,25E-05	2,35E-04	8,87E-08	1,67E-07	MND	MND	MND	MND	MND	MND	MND	1,10E-09	3,84E-08	0,00E+00	1,63E-07	-1,32E-05
EP-marine	kg Ne	3,94E-03	2,89E-04	4,74E-04	4,70E-03	1,36E-05	1,53E-05	MND	MND	MND	MND	MND	MND	MND	1,52E-06	5,90E-06	0,00E+00	3,03E-05	-3,23E-04
EP-terrestrial	mol Ne	2,94E-02	3,20E-03	4,88E-03	3,75E-02	1,50E-04	1,35E-04	MND	MND	MND	MND	MND	MND	MND	1,67E-05	6,51E-05	0,00E+00	3,33E-04	-3,70E-03
POCP ("smog")[3)]	kg NMVOCe	8,38E-03	8,88E-04	1,65E-03	1,09E-02	4,81E-05	3,83E-05	MND	MND	MND	MND	MND	MND	MND	4,59E-06	2,08E-05	0,00E+00	9,64E-05	-1,24E-03
ADP-minerals & metals[4)]	kg Sbe	3,46E-05	1,99E-07	9,40E-06	4,42E-05	2,54E-08	1,90E-07	MND	MND	MND	MND	MND	MND	MND	1,68E-10	1,10E-08	0,00E+00	3,54E-08	-7,23E-06
ADP-fossil resources	MJ	6,32E+01	1,37E+00	8,55E+00	7,32E+01	1,63E-01	6,37E-02	MND	MND	MND	MND	MND	MND	MND	4,45E-03	7,05E-02	0,00E+00	2,43E-01	-4,85E+00
Water use[5)]	m^3e depr.	2,89E+00	5,66E-03	2,30E-01	3,12E+00	7,28E-04	2,90E-03	MND	MND	MND	MND	MND	MND	MND	1,20E-05	3,15E-04	0,00E+00	1,42E-03	-1,06E-01

1) GWP = Global Warming Potential; 2) EP = Eutrophication potential. Required characterisation method and data are in kg P-eq. Multiply by 3,07 to get PO4e; 3) POCP = Photochemical ozone formation; 4) ADP = Abiotic depletion potential; 5) EN 15804+A2 disclaimer for Abiotic depletion and Water use and optional indicators except Particulate matter and Ionizing radiation, human health. The results of these environmental impact indicators shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.

ADDITIONAL (OPTIONAL) ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, PEF

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Particulate matter	Incidence	1,11E-07	8,90E-09	4,15E-08	1,61E-07	1,25E-09	6,33E-10	MND	MND	MND	MND	MND	MND	MND	9,22E-11	5,41E-10	0,00E+00	1,78E-09	-2,58E-08
Ionizing radiation[6)]	kBq U235e	2,23E-01	6,48E-03	8,73E-02	3,17E-01	7,75E-04	5,87E-04	MND	MND	MND	MND	MND	MND	MND	2,05E-05	3,36E-04	0,00E+00	1,16E-03	-2,17E-02
Ecotoxicity (freshwater)	CTUe	9,84E+01	1,15E+00	1,34E+01	1,13E+02	1,46E-01	2,28E-01	MND	MND	MND	MND	MND	MND	MND	2,68E-03	6,34E-02	0,00E+00	1,80E-01	-9,93E+00
Human toxicity, cancer	CTUh	1,74E-09	3,83E-11	7,43E-09	9,20E-09	3,60E-12	1,53E-11	MND	MND	MND	MND	MND	MND	MND	1,03E-13	1,56E-12	0,00E+00	7,59E-12	-4,51E-09
Human tox. non-cancer	CTUh	6,26E-08	1,07E-09	9,93E-09	7,35E-08	1,45E-10	2,59E-10	MND	MND	MND	MND	MND	MND	MND	1,94E-12	6,27E-11	0,00E+00	1,20E-10	-6,94E-09
SQP[7)]	-	1,27E+01	1,26E+00	1,23E+01	2,63E+01	1,88E-01	9,82E-02	MND	MND	MND	MND	MND	MND	MND	5,79E-04	8,12E-02	0,00E+00	5,93E-01	-2,31E+00

6) EN 15804+A2 disclaimer for Ionizing radiation, human health. 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; 7) SQP = Land use related impacts/soil quality.

USE OF NATURAL RESOURCES

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Renew. PER as energy[8)]	MJ	3,17E+00	1,41E-02	2,14E+00	5,32E+00	1,83E-03	6,03E-03	MND	MND	MND	MND	MND	MND	MND	2,54E-05	7,94E-04	0,00E+00	4,22E-03	-8,53E-01
Renew. PER as material	MJ	3,01E-01	0,00E+00	9,21E-01	1,22E+00	0,00E+00	-9,24E-01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	-2,98E-01	0,00E+00
Total use of renew. PER	MJ	3,47E+00	1,41E-02	3,06E+00	6,54E+00	1,83E-03	-9,18E-01	MND	MND	MND	MND	MND	MND	MND	2,54E-05	7,94E-04	0,00E+00	-2,94E-01	-8,53E-01
Non-re. PER as energy	MJ	3,96E+01	1,37E+00	7,60E+00	4,85E+01	1,63E-01	6,37E-02	MND	MND	MND	MND	MND	MND	MND	4,45E-03	7,05E-02	0,00E+00	2,43E-01	-3,96E+00
Non-re. PER as material	MJ	2,40E+01	0,00E+00	1,97E+00	2,59E+01	0,00E+00	-2,21E+00	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	-2,37E+01	0,00E+00
Total use of non-re. PER	MJ	6,36E+01	1,37E+00	9,57E+00	7,45E+01	1,63E-01	-2,15E+00	MND	MND	MND	MND	MND	MND	MND	4,45E-03	7,05E-02	0,00E+00	-2,35E+01	-3,96E+00
Secondary materials	kg	1,87E-02	4,36E-04	3,91E-02	5,82E-02	4,52E-05	1,15E-04	MND	MND	MND	MND	MND	MND	MND	1,74E-06	1,96E-05	0,00E+00	8,75E-05	5,07E-02
Renew. secondary fuels	MJ	2,64E-04	3,35E-06	2,23E-02	2,26E-02	4,56E-07	1,78E-06	MND	MND	MND	MND	MND	MND	MND	5,70E-09	1,97E-07	0,00E+00	3,37E-06	-7,63E-05
Non-ren. secondary fuels	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Use of net fresh water	m^3	7,02E-02	1,57E-04	7,34E-03	7,76E-02	2,11E-05	5,18E-05	MND	MND	MND	MND	MND	MND	MND	2,70E-07	9,13E-06	0,00E+00	2,62E-04	-3,51E-03

8) PER = Primary energy resources.

END OF LIFE – WASTE

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Hazardous waste	kg	1,77E-01	1,83E-03	3,36E-01	5,15E-01	2,16E-04	4,03E-04	MND	MND	MND	MND	MND	MND	MND	5,96E-06	9,34E-05	0,00E+00	0,00E+00	-2,41E-01
Non-hazardous waste	kg	3,69E+00	2,65E-02	8,87E-01	4,60E+00	3,55E-03	9,19E-02	MND	MND	MND	MND	MND	MND	MND	4,19E-05	1,54E-03	0,00E+00	1,00E+00	-7,00E-01
Radioactive waste	kg	8,28E-05	9,30E-06	2,71E-05	1,19E-04	1,09E-06	2,62E-07	MND	MND	MND	MND	MND	MND	MND	3,13E-08	4,71E-07	0,00E+00	0,00E+00	-9,06E-06

END OF LIFE – OUTPUT FLOWS

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Components for re-use	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Materials for recycling	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,07E-01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Materials for energy rec	kg	0,00E+00	0,00E+00	1,00E-02	1,00E-02	0,00E+00	3,19E-02	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Exported energy	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,17E+00	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

ENVIRONMENTAL IMPACTS – EN 15804+A1, CML / ISO 21930

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Global Warming Pot.	kg CO_2e	2,85E+00	9,45E-02	5,24E-01	3,47E+00	1,07E-02	3,80E-02	MND	MND	MND	MND	MND	MND	MND	3,27E-04	4,64E-03	0,00E+00	1,03E-02	-3,47E-01
Ozone depletion Pot.	kg CFC_{-11}e	4,33E-07	1,68E-08	2,43E-08	4,74E-07	1,97E-09	6,88E-10	MND	MND	MND	MND	MND	MND	MND	5,60E-11	8,55E-10	0,00E+00	2,54E-09	-1,34E-08
Acidification	kg SO_2e	1,73E-02	8,81E-04	2,26E-03	2,04E-02	3,57E-05	3,11E-05	MND	MND	MND	MND	MND	MND	MND	2,45E-06	1,54E-05	0,00E+00	6,73E-05	-1,83E-03
Eutrophication	kg PO_4^{3}e	6,46E-03	1,25E-04	9,55E-04	7,54E-03	8,12E-06	2,14E-04	MND	MND	MND	MND	MND	MND	MND	5,69E-07	3,52E-06	0,00E+00	2,15E-05	-5,24E-04
POCP (“smog”)	kg C_2H_4e	1,45E-03	2,57E-05	1,54E-04	1,63E-03	1,39E-06	2,04E-06	MND	MND	MND	MND	MND	MND	MND	5,36E-08	6,03E-07	0,00E+00	2,74E-06	-1,08E-04
ADP-elements	kg Sbe	3,06E-05	1,94E-07	9,34E-06	4,01E-05	2,46E-08	1,86E-07	MND	MND	MND	MND	MND	MND	MND	1,65E-10	1,07E-08	0,00E+00	3,42E-08	-7,22E-06
ADP-fossil	MJ	6,32E+01	1,37E+00	9,80E+00	7,44E+01	1,63E-01	6,37E-02	MND	MND	MND	MND	MND	MND	MND	4,45E-03	7,05E-02	0,00E+00	2,43E-01	-4,85E+00

ENVIRONMENTAL IMPACTS – GWP-GHG - THE INTERNATIONAL EPD SYSTEM

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-GHG[9)]	kg CO_2e	2,94E+00	9,54E-02	5,34E-01	3,56E+00	1,08E-02	3,70E-02	MND	MND	MND	MND	MND	MND	MND	3,31E-04	4,69E-03	0,00E+00	1,05E-02	-3,57E-01

9) This indicator includes all greenhouse gases excluding biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product as defined by IPCC AR 5 (IPCC 2013). In addition, the characterisation factors for the flows - CH4 fossil, CH4 biogenic and Dinitrogen monoxide - were updated in line with the guidance of IES PCR 1.2.5 Annex 1. This indicator is identical to the GWP-total of EN 15804:2012+A2:2019 except that the characterization factor for biogenic CO2 is set to zero.

VERIFICATION STATEMENT

VERIFICATION PROCESS FOR THIS EPD

This EPD has been verified in accordance with ISO 14025 by an independent, third-party verifier by reviewing results, documents and compliancy with reference standard, ISO 14025 and ISO 14040/14044, following the process and checklists of the program operator for:

- This Environmental Product Declaration
- The Life-Cycle Assessment used in this EPD
- The digital background data for this EPD

Why does verification transparency matter? Read more online.
This EPD has been generated by One Click LCA EPD generator, which has been verified and approved by the EPD Hub.

THIRD-PARTY VERIFICATION STATEMENT

I hereby confirm that, following detailed examination, I have not established any relevant deviations by the studied Environmental Product Declaration (EPD), its LCA and project report, in terms of the data collected and used in the LCA calculations, the way the LCA-based calculations have been carried out, the presentation of environmental data in the EPD, and other additional environmental information, as present with respect to the procedural and methodological requirements in ISO 14025:2010 and reference standard.

I confirm that the company-specific data has been examined as regards plausibility and consistency; the declaration owner is responsible for its factual integrity and legal compliance.

I confirm that I have sufficient knowledge and experience of construction products, this specific product category, the construction industry, relevant standards, and the geographical area of the EPD to carry out this verification.

I confirm my independence in my role as verifier; I have not been involved in the execution of the LCA or in the development of the declaration and have no conflicts of interest regarding this verification.

Imane Uald lamkaddam, as an authorized verifier acting for EPD Hub Limited
27.10.2024