Environmental Product Declaration

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

National Shield Extreme

Program:
Environmental Footprint Institute

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Registration # : 230615EPD CR:P-15808

Issue Date: 26.06.2023

Valid Until: 26.06.2028

An EPD should provide current information and may be updated if conditions change. The stated validity is therefore subject to the continued verification and registration at www.environmentalfootprintinstitute.org

ENVIRONMENTAL FOOTPRINT INSTITUTE

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1.0 PROGRAM INFORMATION

Program	The Environmental Footprint Institute
Product Group Classification	UN CPC 3511
Product Category Rules (PCR)	P-1100: Construction products in general (EN-15804)
Registration Number	230615EPD CR:P-15808
Issue Date	26.06.2023
Validity Date	26.06.2028 An EPD should provide current information and may be updated if conditions change. The stated validity is therefore subject to the continued registration and publication at www.environmentalfootprintinstitute.org
Geographical Scope	Manufactured in Sharjah and distributed in United Arab Emirates

2.0 INTRODUCTION

This report contains the environmental performance of the manufacturing process of National Shield Extreme manufactured by National Paints Factories Co Ltd. This Environmental Product Declaration (EPD) has been developed using the Life Cycle Assessment (LCA) methodology. The environmental impact values calculated are expressed to One-Kg of Paint.

The assessed life cycle includes all phases in the manufacturing process of Paints in a “cradle to gate with options” scope. This LCA covers transportation of Raw materials, production, distribution of final product to the customer and end of life stages.

This EPD has been conducted according to the program operator regulations and it has been verified in accordance with The Environmental Footprint Institute. The EPD regulation is a system for the international use of Type III Environmental Declarations, according to ISO 14025:2006. Not only the system, but also its applications, is described in the Programmer’s Product Category Rules (PCR). This report has been made following the specifications given in the European standard EN 15804:2012+A2:2019/AC:2021.

3.0 COMPANY INFORMATION

National Paints is a third-generation business, built on a family's entrepreneurial vision and values. Our story begins in 1948, when Faeq Ibrahim Sayegh opened a building materials shop on a bustling merchant street in Amman, Jordan. Later, recognizing a gap in the market for high-quality paint products, the Sayegh brothers were inspired to contribute to the growth of the paint industry. And so, National Paints was born in 1969 with a commitment to exceptional quality and superior service.

In 1977, Saleem Sayegh saw an opportunity in the United Arab Emirates, and opened a factory in Sharjah. The plant became the epicenter of National Paints' journey of growth as it became the region's biggest paints and coatings factory.

Today, National Paints products improve, protect and uplift projects and properties across 80 countries. Yet, we remain under family stewardship, and our approach is still built on Sayegh family values. We take pride in what we do and hold ourselves to exacting standards. We continuously strive towards exceptional customer service and are willing to go the extra mile to help customers find or customize the perfect product.

Sustainable Practices

National Paints is committed to green and sustainable practices by using backward and forward integration into its manufacturing processes:

- Sourcing of raw materials from the closest source to reduce the impact on transportation;
- Using recycled materials and minimizing waste which further helps reduce environmental impact and carbon footprint;
- Manufacturing own resin and packing materials.

Certifications

National Paints has achieved the below certifications:

- ISO 9001:2015 – Quality Management System;
- ISO 14001:2015 – Environmental Management System;
- ISO 45001:2018 – Occupational Health & Safety Management System;
- Sharjah Economic Excellence Award for the Industrial Sector in the Large Firms Category;
- Dubai Central Laboratory Product Conformity and Emirates Quality Mark.

4.0 PRODUCT INFORMATION

4.1 Analyzed Product

The product covered in this Environmental Product Declaration (EPD) is National Shield Extreme. It is an infrared (IR) heat reflective 100% pure acrylic exterior water based topcoat, to withstand the harsh tropical weather condition. It is formulated with excellent UV protected colors and allows the colors to stay true for a longer period of time. It reflects the heat-producing region of the infrared radiation ranges in sunlight, by its temperature reduction technology. It protects concrete from carbonation (anti-carbonation coating) and remains protected from algae and fungus. It offers moisture barrier and vapor permeable properties with very low dirt pick up. It has low VOC and is highly washable. It is free from any harmful chemicals. It contains anti-fungal and anti-bacterial additives.

4.2 Technical Specifications

Color, Dry film	As per the National shade card
Finish, Dry Film	Matt - Smooth
Volumes Solids (ASTM D2697)	37 +/- 2%
Specific Gravity	1.45 +/- 0.04
Theoretical Spreading	12.3 – 7.4 m^2/Ltr
Recommended DFT (Dry Film)	30-50 Microns/Coat
Recommended WFT (Wet Film)	81-135 Microns/Coat
Flash Point	Water base

4.3 Applications

National Shield Extreme Matt is recommended for exterior application, suitable for the buildings to remain cooler during hot climates by reducing the surface temperature. It improves thermal comfort conditions of houses, industrial and residential buildings. It is the best option for those who believe in caring for the environment and durability of the building.

5.0 LCA INFORMATION

5.1 Declared Unit

The Declared Unit of the Life Cycle Assessments is One-Kg of paint. All direct and indirect environmental impacts, as well as the use of resources, are reported referred to this unit. This EPD presents the environmental impacts associated to the LCA of the analyzed products

5.2 Time representativeness

Manufacturing facility specific data from National Paints Factories Co Ltd are based on 1 year average for process data (Reference year January to December 2022). The following rules for time scope of data were applied - < 10 years for background data and < 2 years for manufacturer's data.

5.3 LCA Software and Database

Version 3.14.0.15 of software Air.e LCA™ with Ecoinvent™ 3.9 database has been used for LCA modeling and impacts calculations.

5.4 System Boundaries

This EPD covers all product stages from “cradle to gate with options”, i.e this LCA covers Production stage A1-A3, Transportation A4, End of life stages C1-C4 and Resource recovery stage D according to EN 15804 + A2/AC:2021.

The procedures that are not controlled by the company, but are included in this environmental study, are:

- The extraction and production of fuels.
- The production of electricity.
- The production of the machinery, buildings, and vehicles.

All related direct and indirect environmental impacts related to these elements have been calculated and were included in the LCAs in this EPD.

Upstream Processes (A1: Raw Material Supply): Production of the product starts with mainly raw material production and transportation from different parts of the world and some locally sourced. ‘Raw material supply’ includes raw material extraction before production.

Core Processes (A2: Transportation, A3: Manufacturing and A4: Transport): Transport is relevant for delivery of raw materials to the plant and the transport of materials within the plant. Electricity is consumed in the production process. Paints are distributed to customer's places. Paint production starts with receipt of raw materials, pre-mixing, dispersion, tinting, quality inspection, filtration, filling & packaging and transport to warehouse. To create a scenario of the A4 phase, all the paints sold from January – December 2022 has been analyzed as representative of the international transport. The transport means 3.5-7.5t & >32t trucks, Euro 6.

Scenario Details	Description
Vehicle used for transport	3.5-7.5t & >32t trucks, Euro 6.
Vehicle capacity	3.5 -7.5 tons and 25 tons
Fuel type and consumption	Diesel, 0.38 liters per km
Capacity utilization (including empty drums)	50% as assumed in Ecoinvent
Bulk transportation	Mass of the transported product.

Module C1: Calculations for paints are done based on dried/cured paint. As a result of the drying and curing processes that take place in modules A5 and B2, solvents & water are eliminated from the coating mass as a whole. Since the coating is not removed from the substrate, the environmental impact of module C1 can be taken as zero.

Module C2: Module C2 assumes that the entire waste paint is transported to a nearby waste treatment facility in a Euro 6 truck. Distance to a nearby waste treatment facility can be averaged at 50 kms.

Module C3: Module C3 assumes that none of the produced paint is passed on to waste processing. Hence, the environmental impact of this module is set to be zero.

Module C4 Disposal - Paint waste is usually collected as part of the substrate in construction materials. Hence, module C4 assumes that 100% of the paint that is applied to the substrate is transported to a landfill.

Scenario Details	Description
Collection Process by type	1 ton of collected product mixed with construction waste
Recovery	Nil. 100% of the paint that is applied to the substrate is transported to a landfill.

Module D Reuse, Recycling & Recovery Potential - Paint applied on buildings is not considered to be recycled, hence the environmental impacts of module D are negligible.

5.5 Manufacturing Flow and System Boundaries Diagram

The scope of this EPD is "cradle to gate with options".

Possible scopes of the LCA defined in the European standard EN 15804:2012+A2:2019/AC:2021 are:

	Production Stage			Construction Process Stage		Use Stage						End of Life Stage					Resource Recovery Stage
	Raw Materials	Transport	Manufacturing	Transport	Construction Installation	Use	Maintenance	Repair	Replacement	Refurbishment	Operational Energy Use	Operational Water Use	De-construction Demolition	Transport	Waste Processing	Disposal	Reuse Recovery Recycling Potential
Module	**A1**	**A2**	**A3**	**A4**	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Modules declared	**X**	**X**	**X**	**X**	ND	ND	ND	ND	ND	ND	ND	ND	**X**	**X**	**X**	**X**	**X**
Geography	UAE/ GLO	UAE/ GLO	UAE	-	-	-	-	-	-	-	-	-	GLO	GLO	GLO	GLO	GLO
Specific data	GWP > 90%				-	-	-	-	-	-	-	-	-	-	-	-	-
Variation – products	0				-	-	-	-	-	-	-	-	-	-	-	-	-
Variation – sites	0				-	-	-	-	-	-	-	-	-	-	-	-	-

X = Included, ND=Module not declared, NR= Module not relevant

Scope of this Life Cycle Assessment 'Cradle to Gate with Options'					
A1 Raw Materials Production	**A2 Transport raw materials**	**A3 Manufacture**	**A4 Distribution**	**C1-C4 End of use Stage**	**D Recovering & Recycling**
Raw Materials and Chemicals	Transport from supplier by land or sea	Paint Manufacturing	Transport to customers by trucks & Ships	Demolition, transport, disposal.	Reuse, recovery and recycling potential

5.6 Content Declaration

Product Components	%	Post-consumer material, weight-%	Biogenic material, weight-% and kg C/kg
Extenders	20-50	0	0
Binders	10-50	0	0
Pigment	5-20	0	0
Additives	0-5	0	0
Biocide	0-2	0	0
Water	10-30	0	0

Packaging Materials			
Packaging Materials	**Weight Kg**	**Weight % (Versus the Product)**	**Weight biogenic carbon, kg C/kg**
Wooden Pallet	154.33	2.89	0*
Metal Drum	445.1	8.83	0
*Biogenic carbon content is not presents since the packaging weights less than a 5% over the product's weight.			

5.7 Substances listed in the "Candidate List of SVHC"

During the life cycle of the product no hazardous substance listed in the "Candidate List of Substances of Very High Concern (SVHC) for authorization" has been used in a percentage higher than 0.1% of the weight of the product.

5.8 Life Cycle Assessment Modeling

The following diagram designed using Air.e LCA software shows and example of the materials, fuels consumption, energy consumption, transports and other elements and procedures included in the assessments.

5.9 More information

Cut-off rules: more than 99% of the materials and energy consumption have been included. The Polluter Pays Principle and the Modularity Principle have been followed.

Allocations: The allocation of common inputs and outputs is based on the general allocation rule what represents the proportion of production of every specific product in overall production expressed in kg. Generic process data for production of input materials were used.

Electricity: A specific dataset with the Life Cycle Inventory (LCI) corresponding to the electricity mix in United Arab Emirates, has been used for this LCA.

Calculation Rules: Datasets from Ecoinvent 3.9.0 with emission factors for raw materials and generic chemicals have been characterized to adjust them to the characteristics of manufacturing of suppliers or counties where suppliers are located. Specific datasets with the emissions factors corresponding to the fuel combustion of production plant and machinery have been developed for these LCAs. Indirect emissions due to diesel production and transportation are also included in the environmental impact. Minor components are not directly related to the product, with less than 1% impact, such as office supplies, has been excluded from the assessment.

All transports of components have been included in the LCA considering real distances travelled by materials used for production. It is estimated in a global scale according to Ecoinvent™ criteria. As exact port locations are not known in detail, transport distances have been calculated from a one of the ports in the country of origin to the factory. Operation in port has also been excluded. Road distances calculated using Google Maps. Maritime distances calculated using Marine Traffic Voyage Planner.

By Products Assignment There are no By Products in this Environmental Product Declaration. Hence, no allocation had to be applied.

6.0 ENVIRONMENTAL PERFORMACE

6.1 Potential Environment Impacts

In the following tables, the environmental performance of the declared units “One-Kg of Paints” is presented for the National Paints Factories Co Ltd. During the assessment it was not evident to distinguish the differences in the consumption of electricity, water, raw material and chemicals during the manufacturing. Hence, the calculation is based on total production vs total consumption against production of the product. Environmental impacts are calculated using the EF-3.0, (ILCD).

The estimated impact results are only relative statements, which do not indicate the endpoints of the impact categories, exceeding thresholds values, safety margins or risks.

Core Environmental Impact Indicators

Impact Category	Unit	A1-A3	A4	A5	B1-B7	C1	C2	C3	C4	Total	D
Climate change (GWP) – fossil	kg CO2e	2.88E+00	2.17E-03	0	0	0.00E+00	2.93E-03	0.00E+00	1.19E-01	3.00E+00	-2.45E-01
Climate change (GWP) – biogenic	kg CO2e	1.19E-02	0.00E+00	0	0	0.00E+00	0.00E+00	0.00E+00	7.70E-05	1.20E-02	-2.48E-03
Climate change (GWP) – LULUC	kg CO2e	-1.08E-04	0.00E+00	0	0	0.00E+00	0.00E+00	0.00E+00	-7.91E-07	-1.09E-04	-1.18E-05
Climate change (GWP) – total	kg CO2e	2.90E+00	2.17E-03	0	0	0.00E+00	2.93E-03	0.00E+00	1.19E-01	3.02E+00	-2.49E-01
Ozone depletion	kg CFC11e	2.35E-07	0.00E+00	0	0	0.00E+00	0.00E+00	0.00E+00	3.20E-09	2.38E-07	-2.56E-08
Acidification	mol H+e	2.30E-02	7.56E-07	0	0	0.00E+00	1.02E-06	0.00E+00	9.00E-05	2.31E-02	-1.68E-03
Eutrophication, aquatic freshwater	kg PO4e	3.63E-03	0.00E+00	0	0	0.00E+00	0.00E+00	0.00E+00	1.45E-05	3.63E-03	-2.08E-04
Eutrophication, aquatic freshwater	Kg P eq	1.18E-03	0.00E+00	0	0	0.00E+00	0.00E+00	0.00E+00	1.43E-06	1.18E-03	-6.76E-05
Eutrophication, aquatic marine	kg Ne	4.49E-03	3.79E-07	0	0	0.00E+00	5.12E-07	0.00E+00	3.06E-05	4.52E-03	-4.29E-04
Eutrophication, terrestrial	mol Ne	4.76E-02	4.24E-06	0	0	0.00E+00	5.73E-06	0.00E+00	3.30E-04	4.79E-02	-4.74E-03
Photochemical ozone formation	kg NMVOCe	1.48E-02	1.12E-06	0	0	0.00E+00	1.51E-06	0.00E+00	1.21E-04	1.49E-02	-1.54E-03
Abiotic depletion, minerals & metals	kg Sbe	4.28E-04	0.00E+00	0	0	0.00E+00	0.00E+00	0.00E+00	3.35E-08	4.28E-04	-2.95E-06
Abiotic depletion of fossil resources	MJ	5.93E+01	0.00E+00	0	0	0.00E+00	0.00E+00	0.00E+00	2.61E-01	5.96E+01	-3.76E+00
Water use	m3e depr.	2.26E+00	0.00E+00	0	0	0.00E+00	2.93E-03	0.00E+00	1.12E-02	2.27E+00	-1.62E-01

EN 15804+ A2 disclaimers for Abiotic depletion and Water use indicators and all 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 experienced with the indicator. "Reading example: 1.57E-03 = 1.57*10-3 = 0.00157"

Additional Environmental Impact Indicators

Impact Category	Unit	A1-A3	A4	A5	B1-B7	C1	C2	C3	C4	Total	D
Particulate matter	Incidence	2.20E-07	3.89E-12	0	0	0.00E+00	5.25E-12	0.00E+00	1.75E-09	2.21E-07	-3.27E-08
Ionizing radiation, human health	kBq U235e	1.31E+04	0.00E+00	0	0	0.00E+00	0.00E+00	0.00E+00	1.56E-03	1.31E+04	-1.54E-02
Eco-toxicity (freshwater)	CTUe	3.76E-02	5.45E-06	0	0	0.00E+00	7.37E-06	0.00E+00	2.18E-01	2.56E-01	-6.85E+00
Human toxicity, cancer effects	CTUh	3.31E-09	7.41E-14	0	0	0.00E+00	1.00E-13	0.00E+00	1.37E-11	3.33E-09	-1.70E-09
Human toxicity, non-cancer effects	CTUh	1.24E-07	3.55E-12	0	0	0.00E+00	4.79E-12	0.00E+00	1.60E-10	1.24E-07	-5.25E-09
Land use related impacts/soil quality	Dimensionless	1.43E+02	0.00E+00	0	0	0.00E+00	0.00E+00	0.00E+00	5.92E-01	1.44E+02	-1.29E+02

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.

Environmental impacts – GWP-GHG

Impact Category	Unit	A1-A3	A4	A5	B1-B7	C1	C2	C3	C4	Total	D
GWP-GHG	kg CO2e	2.88E+00	2.17E-03	0	0	0.00E+00	2.93E-03	0.00E+00	1.19E-01	3.01E+00	-2.46E-01

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) This indicator Is almost equal to the GWP indicator originally defined in EN 15804:2012+A1:2013.

Use of Natural Resources

Impact Category	Unit	A1-A3	A4	A5	B1-B7	C1	C2	C3	C4	Total	D
Renewable PER used as energy	MJ	1.90E+01	0.00E+00	0	0	0.00E+00	0.00E+00	0.00E+00	4.18E-03	1.90E+01	1.77E+01
Renewable PER used as materials	MJ	5.79E-03	0.00E+00	0	0	0.00E+00	0.00E+00	0.00E+00	1.93E-05	5.81E-03	7.88E-04
Total use of renewable PER	MJ	1.90E+01	0.00E+00	0	0	0.00E+00	0.00E+00	0.00E+00	4.20E-03	1.90E+01	1.77E+01

Non-renew. PER used as energy	MJ	5.93E+01	0.00E+00	0	0	0.00E+00	0.00E+00	0.00E+00	2.61E-01	5.96E+01	3.76E+00
Non-renew. PER used as materials	MJ	9.97E-06	0.00E+00	0	0	0.00E+00	0.00E+00	0.00E+00	1.81E-07	1.02E-05	5.83E-07
Total use of non-renewable PER	MJ	5.93E+01	0.00E+00	0	0	0.00E+00	0.00E+00	0.00E+00	2.61E-01	5.96E+01	3.76E+00
Use of secondary materials	Kg	0.00E+00	0.00E+00	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Use of renewable secondary fuels	MJ	0.00E+00	0.00E+00	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Use of non-renew. secondary fuels	MJ	0.00E+00	0.00E+00	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Use of net fresh water	m3	9.74E-01	0.00E+00	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.07E-02	0.00E+00

End of Life - Waste

Impact Category	Unit	A1-A3	A4	A5	B1-B7	C1	C2	C3	C4	Total	D
Hazardous waste	Kg	0.00E+00	0.00E+00	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-hazardous waste	Kg	1.07E+01	0.00E+00	0	0	0.00E+00	0.00E+00	0.00E+00	5.34E+03	5.35E+03	0.00E+00
Radioactive waste	Kg	0.00E+00	0.00E+00	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

End of Life - Outflows

Impact Category	Unit	A1-A3	A4	A5	B1-B7	C1	C2	C3	C4	Total	D
Components for reuse	Kg	0.00E+00	0.00E+00	0	0	0.00E+00	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	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.77E+02
Materials for energy recovery	Kg	0.00E+00	0.00E+00	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Exported energy - electricity	MJ	1.58E+03	0.00E+00	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.58E+03	0.00E+00
Exported energy - thermal	MJ	0.00E+00	0.00E+00	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Biogenic Carbon Content

Details	Unit	A1-A3
Biogenic carbon content in product	Kg C	0
Biogenic carbon content in accompanying packaging	Kg C	0

Note: 1 kg biogenic carbon is equivalent to 44/12 kg CO2. "Reading example: 1.57E-03 = 1.57*10-3 = 0.00157"

Disclaimer: "According to the EN 15804:2012+A2:2019 standard, the LCIA results are relative expressions translating impacts into environmental themes such as climate change, ozone depletion, etc. (midpoint impact categories). Thus, the LCIA results do not predict impacts on category endpoints such as impact on the extinction of species or human health. In addition, the results do not provide information about the exceeding of thresholds, safety margins or risks".

6.2 Interpretation of LCA Study Results

In general terms, as it is shown in the table of core environmental impact indicators, A1-A2 modules have the higher impact, representing above 80% of the whole impact. A4 module has a less impact. C2 and C4 module has little impact too, representing at most 0.16% and 0.01% respectively of the whole impact.

7.0 MANDATORY STATEMENTS

Explanatory material can be obtained from EPD owner and/or LCA author. Contact information can be found below. The verifier and The Program Operator do not make any claim or present any responsibility about the legality of the product.

The EPD owner has the sole ownership, liability, and responsibility for the EPD. The LCA Author shall not be liable with respect to manufacturer information, life cycle assessment data and evidences.

EPDs within the same product category but registered in different EPD programmes may not be comparable. For two EPDs to be comparable, they must be based on the same PCR (including the same 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 equivalent system boundaries and descriptions of data; apply equivalent data quality requirements, methods of data collection, and allocation methods; apply identical cut-off rules and impact assessment methods (including the same version of characterization factors); have equivalent content declarations; and be valid at the time of comparison.

8.0 CONTACT INFORMATION

EPD Owner	National Paints Factories Co Ltd PO Box 5822, Sharjah – U.A.E Tel : +971 6 5130000 mehmood.khan@nationalpaints.com www.nationalpaints.com
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Verifier Details	Name: Iván Jiménez Location: Spain Accredited by: Environmental Footprint Institute

9.0 ADDITIONAL INFORMATION

9.1 Action against Erosion, Environmental Restoration, and Landscaping of the work.

Application of measures to prevent erosion, restore the environment, and landscape the job includes restoring all elements immediately connected to it. The restoration of other related items indirectly is also suggested, including work roads, auxiliary facilities, and loan and landfill lands.

In the areas of air protection, National Paints makes an effort to stop pollution and lessen its damaging effects on the environment management of both waste and water. The foundation of quality and environmental policy is a long-term growth plan built on recognized and global trends that have been expertly evaluated in relation to the development of potential clients' needs.

National Paints has a long history of developing and manufacturing high quality, cost efficient and environmentally compliant products and services. National Paints has one of the finest research and development laboratories in the Middle East.

Group R&D Centers caters to all the National Paint factories. Technologically advanced equipment is used to develop products that fulfill markets requirements and exceed customers' expectations.

9.2 Information related to Sector EPD

This is not a sector EPD.

9.3 Differences versus previous versions

This is the first version of the EPD.

10.0 REFERENCES

LCA Report: Life Cycle Inventory of National Shield Extreme by National Paints Factories Co Ltd.

Software: Air.e LCA Version 3.14.0.15 www.solidforest.com

Main database: Ecoinvent 3.9 www.ecoinvent.org

Geographical scope of the EPD: United Arab Emirates

ISO 14040:2006 “Environmental management -- life cycle assessment -- principles and framework”;

ISO 14044:2006 “Environmental management -- life cycle assessment -- requirements and guidelines”;

ISO 14020:2000 “Environmental Labels and declarations - General Principles

ISO 14025:2006 “Environmental labels and declarations -- type III environmental declarations -- principles and procedures”.

EN 15804+A2:2019/AC:2021 European Committee for Standardization: Sustainability of construction works − Environmental product declarations − Core rules for the product category of construction products.

General Programme Instructions of the Environmental Footprint Institute

Product Category Rules: P-1100: Construction products in general (EN-15804)