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The Norwegian EPD Foundation

ENVIRONMENTAL PRODUCT DECLARATION

in accordance with ISO 14025, ISO 21930 and EN 15804

Owner of the declaration:	Skanska Industrial Solutions AB
Program operator:	The Norwegian EPD Foundation
Publisher:	The Norwegian EPD Foundation
Declaration number:	NEPD-2514-1242-EN
Registration number:	NEPD-2514-1242-EN
ECO Platform reference number:	-
Issue date:	10.11.2020
Valid to:	10.11.2025

ABT 16 Vällsta Asphalt Plant

Skanska Industrial Solutions AB

SKANSKA

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General information

Product:

ABT 16 Vällsta Asphalt Plant

Owner of the declaration:

Skanska Industrial Solutions AB
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Manufacturer:

Skanska Industrial Solutions AB

Declaration number:

NEPD-2514-1242-EN

Place of production:

Vällsta Asfaltverk
Rydholmsvägen 7
19491 Upplands Väsby

ECO Platform reference number:

Management system:

ISO 14001, ISO 9001

This declaration is based on Product Category Rules:

CEN Standard EN 15804:2012+A1:2013 serves as core PCR
NPCR 025:2017 Part B for Asphalt

Organisation no:

556793-1638

Statement of liability:

The owner of the declaration shall be liable for the underlying information and evidence. EPD Norway shall not be liable with respect to manufacturer information, life cycle assessment data and evidences.

Issue date: 10.11.2020

Valid to: 10.11.2025

Declared unit:

1 tonne ABT 16 Vällsta Asphalt Plant

Year of study:

2019

Declared unit with option:

A1,A2,A3,A4

Comparability:

EPD of construction products may not be comparable if they not comply with EN 15804 and seen in a building context.

Functional unit:

Author of the Life Cycle Assessment:

The declaration is developed using eEPD v4.0 from LCA.no
Approval:
Company specific data are:

Collected/registered by:	Henrik Sjoholm
Internal verification by:	Nicklas Magnusson

Verification:

Independent verification of data, other environmental information and the declaration according to ISO14025:2010, § 8.1.3 and § 8.1.4

External

Third party verifier:

Sign

Martin Erlandsson, IVL Swedish Environmental Research Institute

(Independent verifier approved by EPD Norway)

Approved:

Sign

Håkon Hauan
Managing Director of EPD-Norway

Product

Product description:

Asphalt Wearing course for road contruction.

Product specification

ABT 16 (AC 16)

Materials	%
Aggregate	56,10
Bitumen	3,90
Amin, CAS Nr. 68910-93-0	0,01
Bitumen from reclaimed asphalt	2,00
Aggregates from reclaimed asphalt	38,00

Technical data:

ABT 16 wearing course according to Swedish road administration specification TDOK 2013:0529.

Market:

Sweden

Reference service life, product

Depending on traffic, road design and climate conditions.

Reference service life, construction works

Depending on traffic, road design and climate conditions.

LCA: Calculation rules

Declared unit:

1 tonne ABT 16 Vällsta Asphalt Plant

Cut-off criteria:

All major raw materials and all the essential energy is included. The production processes for raw materials and energy flows with very small amounts (less than 1%) are not included. These cut-off criteria do not apply for hazardous materials and substances.

Allocation:

The allocation is made in accordance with the provisions of EN 15804. Incoming energy and water and waste production in-house is allocated equally among all products through mass allocation. Effects of primary production of recycled materials is allocated to the main product in which the material was used. The recycling process and transportation of the material is allocated to the analysis in this EPD. For bitumen production, crude oil extraction and transport are allocated by mass, while the final products from oil refineries are allocated by economic factors.

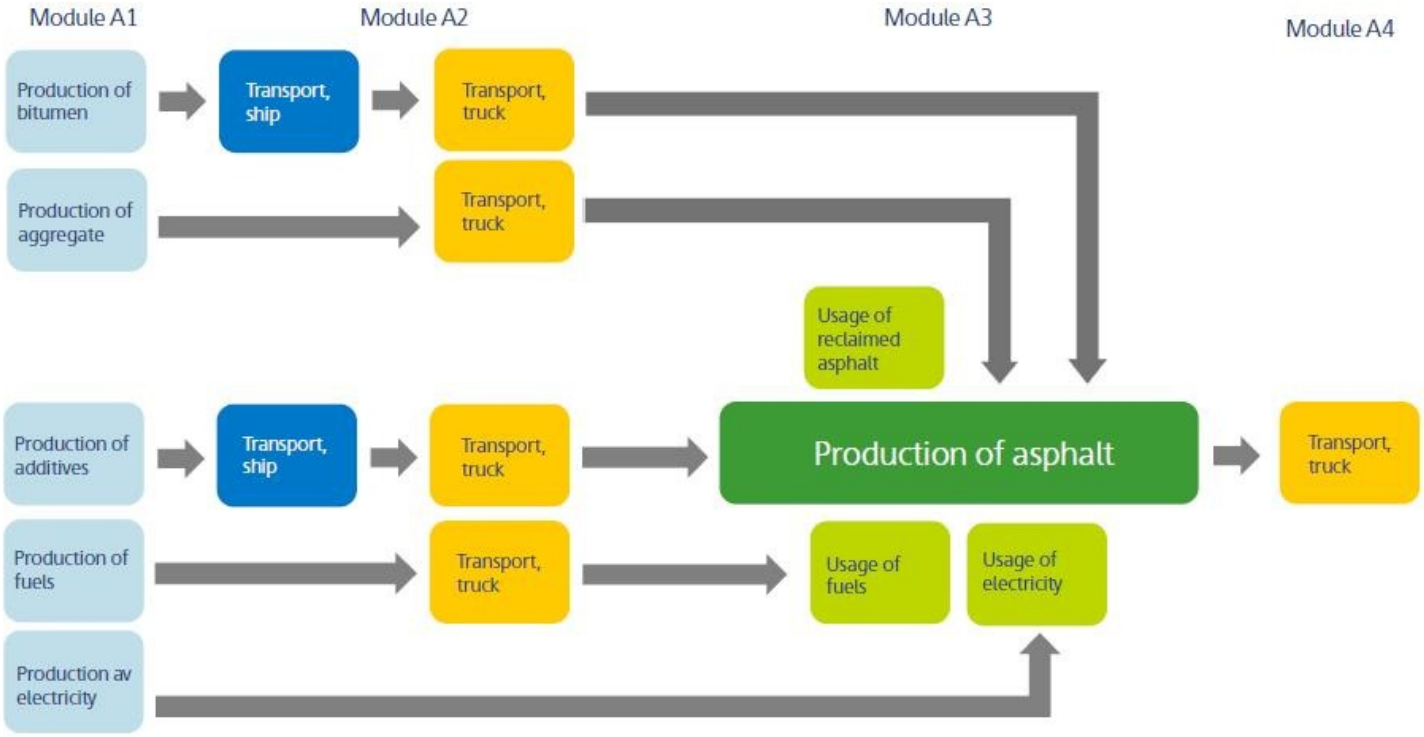
Data quality:

Specific data for the product composition are provided by the manufacturer. They represent the production of the declared product and were collected for EPD development in the year of study. Background data is based on registered EPDs according to EN 15804, Ostfold Research databases, ecoinvent and other LCA databases. The data quality of the raw materials in A1 is presented in the table below.

Specific environmental data from EPDs (Skanska EPD), in accordance with EN 15804, have been used for aggregates. Similarly, specific data have been used for transport distances from supplier to asphalt plant and for all factory data (energy use, waste quantities, etc.). For all other data, generic data available in EPD tool v4.0 have been used. Transport of reclaimed asphelt from the road to asphalt factory includes a return distance.
For bitumen, generic data from Eurobitume is used because specific data cannot be determined from the mix of bitumen suppliers according to EU standards etc. used by Skanska.
Environmental impact for reclaimed asphalt falls to previous product systems until arrival at the asphalt plant. The asphalt plant uses electricity marked "Good Environmental Choice".

Materials	Source	Data quality	Year
Bitumen	Eurobitume	Database	2012
Aggregate	NEPD-1257-403	EPD	2016
Aggregates from reclaimed asphalt	Østfoldforskning	Database	2017
Bitumen from reclaimed asphalt	Østfoldforskning	Database	2017
Amin, CAS Nr. 68910-93-0	Supplier	Eco footprint	2020

System boundary:



Additional technical information:

40% reclaimed asphalt is included.
40% renewable energy used in production (A3).

LCA: Scenarios and additional technical information

The following information describe the scenarios in the different modules of the EPD.

Transport from production place to user (A4)

Type	Capacity utilisation (incl. return) %	Type of vehicle	Distance km	Fuel/Energy consumption	Unit	Value (l/t)
Truck	50,0 %	Asfaltbil med henger, EURO 6	50	0,023668	l/tkm	1,18
Railway					l/tkm	
Boat					l/tkm	
Other Transportation					l/tkm	

Assembly (A5)

.	Unit	Value
Auxiliary	kg	
Water consumption	m^3	
Electricity consumption	kWh	
Other energy carriers	MJ	
Material loss	kg	
Output materials fr ste treatment	kg	
Dust in the air	kg	
VOC emissions	kg	

Use (B1)

.	Unit	Value

Maintenance (B2)/Repair (B3)

.	Unit	Value
Maintenance cycle*		
Auxiliary		
Other resources		
Water consumption	m^3	
Electricity consumption	kWh	
Other energy carriers	MJ	
Material loss	kg	
VOC emissions	kg	

Replacement (B4)/Refurbishment (B5)

.	Unit	Value
Replacement cycle*		
Electricity consumption	kWh	
Replacement of worn parts		

* Described above if relevant

Operational energy (B6) and water consumption (B7)

.	Unit	Value
Water consumption	m^3	
Electricity consumption	kWh	
Other energy carriers	MJ	
Power output of equipment	kW	

End of Life (C1, C

.	Unit	Value
Hazardous waste disposed	kg	
Collected as mixed construction wa	kg	
Reuse	kg	
Recycling		
Energy recovery		
To landfill	kg	

Scenarios after A1-A4 are not included

Transport to waste processing (C2)

Type	Capacity utilisation (incl. return) %	Type of vehicle	Distance km	Fuel/Energy consumption	Unit	Value (l/t)
Truck					l/tkm	
Railway					l/tkm	
Boat					l/tkm	
Other Transportation					l/tkm	

LCA: Results

The LCA results are presented below for the declared unit defined on page 2 of the document.

System boundaries (X=included, MND=module not declared, MNR=module not relevant)

Product stage			Construction installation stage		User stage							End of life stage				.	Beyond the system bondaries
Raw materials	Transport	Manufacturing	Transport	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	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	.	MND

Environmental impact

Parameter	Unit	A1-A3	A4
GWP*	kg CO_2 -eq	3,19E+01	4,34E+00
ODP	kg CFC11 -eq	3,80E-06	9,00E-07
POCP	kg C_2H_4-eq	1,46E-02	6,83E-04
AP	kg SO_2 -eq	1,97E-01	1,13E-02
EP	kg PO_4^{3-} -eq	3,89E-02	1,55E-03
ADPM	kg Sb -eq	2,26E-05	1,08E-05
ADPE	MJ	2,05E+03	7,13E+01

GWP Global warming potential; ODP Depletion potential of the stratospheric ozone layer; POCP Formation potential of tropospheric photochemical oxidants; AP Acidification potential of land and water; EP Eutrophication potential; ADPM Abiotic depletion potential for non fossil resources; ADPE Abiotic depletion potential for fossil resources

"Reading example: 9,0 E-03 = 9,0*10-3 = 0,009"
*INA Indicator Not Assessed

***Remarks to environmental impacts**

The results for GWP exclude biogenic CO2 (IPCC 2007)

Resource use

Parameter	Unit	A1-A3	A4
RPEE	MJ	1,75E+02	1,30E+00
RPEM	MJ	1,07E+00	0,00E+00
TPE	MJ	1,76E+02	1,30E+00
NRPE	MJ	4,05E+02	7,35E+01
NRPM	MJ	2,60E+03	0,00E+00
TRPE	MJ	2,12E+03	7,35E+01
SM	kg	4,00E+02	0,00E+00
RSF	MJ	2,82E-02	0,00E+00
NRSF	MJ	0,00E+00	0,00E+00
W	m^3	4,77E+00	1,74E-02

RPEE Renewable primary energy resources used as energy carrier; RPEM Renewable primary energy resources used as raw materials; TPE Total use of renewable primary energy resources; NRPE Non renewable primary energy resources used as energy carrier; NRPM Non renewable primary energy resources used as materials; TRPE 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; W Use of net fresh water

"Reading example: 9,0 E-03 = 9,0*10-3 = 0,009"
*INA Indicator Not Assessed

End of life - Waste

Parameter	Unit	A1-A3	A4
HW	kg	2,38E-03	3,97E-05
NHW	kg	4,09E+00	6,71E+00
RW	kg	INA*	INA*

HW Hazardous waste disposed; NHW Non hazardous waste disposed; RW Radioactive waste disposed

"Reading example: 9,0 E-03 = 9,0*10-3 = 0,009"
*INA Indicator Not Assessed

End of life - Output flow

Parameter	Unit	A1-A3	A4
CR	kg	0,00E+00	0,00E+00
MR	kg	5,20E-02	0,00E+00
MER	kg	0,00E+00	0,00E+00
EEE	MJ	INA*	INA*
ETE	MJ	INA*	INA*

CR Components for reuse; MR Materials for recycling; MER Materials for energy recovery; EEE Exported electric energy; ETE Exported thermal energy

"Reading example: 9,0 E-03 = 9,0*10-3 = 0,009"
*INA Indicator Not Assessed

Additional Norwegian requirements

Greenhouse gas emissions from the use of electricity in the manufacturing phase

National production mix from import, low voltage (production of transmission lines, in addition to direct emissions and losses in grid) of applied electricity for the manufacturing process (A3).

Electricity mix	Data source	Amount	Unit
El-mix, Sweden (kWh)	ecoinvent 3.4 Alloc Rec	42,67	g CO2-ekv/kWh

Dangerous substances

The product contains no substances given by the REACH Candidate list or the Norwegian priority list.

Indoor environment

Bibliography

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ISO 14044:2006 Environmental management - Life cycle assessment - Requirements and guidelines.
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