



ENVIRONMENTAL PRODUCT DECLARATION

in accordance with ISO 14025, ISO 21930 and EN 15804

Owner of the declaration:	Mapei AS
Program operator:	The Norwegian EPD Foundation
Publisher:	The Norwegian EPD Foundation
Declaration number:	NEPD-470-322-EN
Issue date:	01.07.2016
Valid to:	01.07.2021

Uniplan Eco, Conplan Eco, Uniplan Pro

Mapei Norge AS



www.epd-norge.no



General information

Product:

Uniplan Eco, Conplan Eco, Uniplan Pro

Program operator:

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Declaration number:

NEPD-470-322-EN

ECO Platform reference number:

-

Owner of the declaration:

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Manufacturer:

Mapei AS
Vallsetvegen 6 2120 Sagstua
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e-mail: post@mapei.no

Place of production:

Vallsetvegen 6 2120 Sagstua, Norway

Management system:

EMAS, ISO 9001, ISO 14001, OHSAS 18001, ISO 10002

This declaration is based on Product Category Rules:

CEN Standard EN 15804 serves as core PCR
NPCR 09, For preparing an environmental declaration (EPD)
for Product Group, Technical - Chemical products for the
building- and construction industry, January 2012

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.

Organisation no:

911103079

Issue date:

01.07.2016

Valid to:

01.07.2021

Year of study:

2015

Declared unit:

1 kg of dry mortar product

Declared unit with option:

1 m² of mortar applied, 25 mm thickness using 41 kg of
mortar per m²

Comparability:

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

Functional unit:
The EPD has been worked out by:

Sweco Norge AS

Karin Sjøstrand 

Verification:

The CEN Norm EN 15804 serves as the core PCR.
Independent verification of the declaration and data,
according to ISO14025:2010

internal external

Third party verifier:

Mie Vold  Østfoldforskning
SUSTAINABLE INNOVATION

Senior Research Scientist, Mie Vold
(Independent verifier approved by EPD Norway)

Approved

Håkon Hauan
Håkon Hauan
Managing Director of EPD-Norway

Product

Product description:

Uniplan and Conplan Eco are cement-based, pumpable smoothing compound for levelling of concrete floors. Uniplan is in addition fibre reinforced and is thus also intended for levelling of wooden floors with sufficient stiffness. The products can be used for floors in homes, offices and institutions (Uniplan also in light industry). Uniplan and Conplan can be laid in thicknesses of respectively 5-50 mm and 3-25 mm.

Product specification:

The 3 products are very similar in their components. There is one minor additive that differs between each of them at the size of 0,05 to 0,2 %.

Materials	kg	%
Sand	16,4	32
Milled Gypsum and Limestone	16,81	32,8
Cement	6,97	13,6
Additives	0,82	1,6
Water	10,25	20

Technical data:

1700 kg/m³ for the dry mortar and 2050 kg/m³ for the finished product. The water content is 20 %. In total there is 41 kg dry mortar product per m².

Market:

Nordic countries

Reference service life, product:

N/A

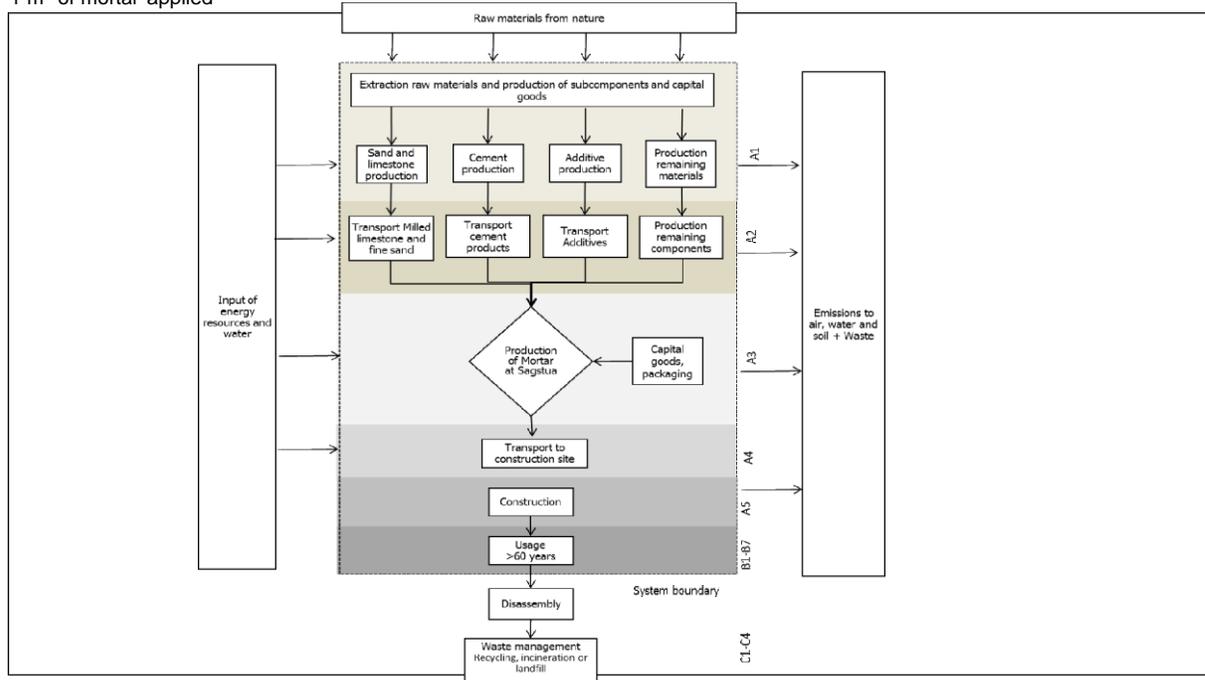
Reference service life, building:

N/A

LCA: Calculation rules

Declared unit:

1 m² of mortar applied



Data quality:

Specific data and EPDs have been collected for all the major components while generic or proxy data has been used for the components where specific data was not available and for the less important components.

Data sources for background data: GaBi, ELCD, Ecoinvent 3.1, Industry data

Cut-off criteria:

All major raw materials and all the essential energy is included. The production process for raw materials and energy flows that are included with very small amounts (<1% of total energy demand) are not included. This cut-off rule does 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 allocated to the main product in which the material was used. The recycling process and transportation of the material is allocated to this analysis.

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	Value (l/tkm)
Truck	50% (capacity of 35 tonnes)	Euro 5	100	l/tkm	0,024
Railway				kWh/tkm	
Boat				l/tkm	
<Other Transportation>				<xx>	

The A4 scenario only refers to a standard distance. The impact in A4 may be scaled to the actual distance to a specific customer. It is assumed that the bulk truck loads 35 tonnes at Mapei and goes empty in return.

Assembly (A5)

	Unit	Value
Auxiliary	kg	
Water consumption	m ³	0,01025
Electricity consumption	kWh	0,14555
Diesel consumption - bulk truck	MJ	2,87
Material loss	kg	
Output materials from waste treatment	kg	
Dust in the air	kg	

Use (B1)

	Unit	Value

The scenario is based on a mix of products delivered in bulk and bags (an average of 47 % bulk, 53 % bags with only small differences between the products). The bulk truck uses 30 liter/hour (with 8000 kg/h in capacity), the bags use a blender that uses 2 kWh electricity per 300 kg of mortar.

Maintenance (B2)/Repair (B3)

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

Replacement (B4)/Refurbishment (B5)

	Unit	Value
Replacement cycle*		
Electricity consumption	kWh	
Replacement of worn parts	0	

* Number or RSL (Reference Service Life)

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

End of Life (C1, C3, C4)

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

Transport to waste processing (C2)

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

Benefits and loads beyond the system boundaries (D)

	Unit	Value

Additional technical information

The products have Technical Approval – No. 2329 and are CE approved and classified as CT-C30-F7 in accordance with EN13813.

LCA: Results**System boundaries (X=included, MND= module not declared, MNR=module not relevant)**

Product stage		Assembly stage			Use stage							End of life stage				Beyond the system boundaries
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	x	MNR	MNR	MNR	MND	MND	MNR	MNR	MND	MND	MND	MND	MND

Environmental impact

Parameter	Unit	A1	A2	A3	A1- A3	A4	A5	Sum A1-A5
GWP	kg CO ₂ -eqv	7,30E+00	1,20E+00	2,64E-01	8,76E+00	4,15E-01	2,76E-01	9,45E+00
ODP	kg CFC11 -eqv	6,97E-07	2,24E-07	2,66E-08	9,47E-07	7,82E-08	4,91E-08	1,07E-06
POCP	kg C ₂ H ₄ -eqv	1,87E-03	2,54E-04	8,04E-05	2,20E-03	7,18E-05	5,58E-05	2,33E-03
AP	kg SO ₂ -eqv	3,19E-02	6,05E-03	1,40E-03	3,93E-02	1,47E-03	2,07E-03	4,29E-02
EP	kg PO ₄ ³⁻ -eqv	4,57E-03	1,06E-03	5,55E-04	6,19E-03	3,05E-04	4,75E-04	6,97E-03
ADPM	kg Sb -eqv	5,67E-06	2,49E-06	3,50E-06	1,17E-05	9,20E-07	1,82E-07	1,28E-05
ADPE	MJ	5,92E+01	1,96E+01	3,88E+00	8,27E+01	6,84E+00	4,19E+00	9,37E+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

Resource use								
Parameter	Unit	A1	A2	A3	A1- A3	A4	A5	Sum A1-A5
RPEE	MJ	5,21E+00	3,72E-01	1,04E+01	1,60E+01	9,76E-02	6,20E-01	1,67E+01
RPEM	MJ	1,11E+00	0,00E+00	9,12E-01	2,02E+00	0,00E+00	0,00E+00	2,02E+00
TPE	MJ	6,71E+00	3,72E-01	1,16E+01	1,87E+01	9,76E-02	6,20E-01	1,94E+01
NRPE	MJ	5,65E+01	2,67E+01	2,82E+00	8,60E+01	6,97E+00	4,17E+00	9,71E+01
NRPM	MJ	1,64E+01	0,00E+00	3,85E-01	1,68E+01	0,00E+00	0,00E+00	1,68E+01
TRPE	MJ	7,29E+01	2,67E+01	3,60E+00	1,03E+02	6,97E+00	4,18E+00	1,14E+02
SM	kg	3,54E-01	7,12E-03	1,46E-03	3,63E-01	1,63E-03	2,37E-05	3,65E-01
RSF	MJ	1,48E-01	0,00E+00	0,00E+00	1,48E-01	0,00E+00	0,00E+00	1,48E-01
NRSF	MJ	1,69E+01	0,00E+00	0,00E+00	1,69E+01	0,00E+00	0,00E+00	1,69E+01
W	m ³	3,51E+00	1,10E+00	3,51E+00	8,12E+00	2,73E-01	2,90E-01	8,69E+00

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

End of life - Waste								
Parameter	Unit	A1	A2	A3	A1- A3	A4	A5	Sum A1-A5
HW	kg	0,0256799	0,0007362	1,81E-01	2,07E-01	1,70E-04	1,50E-03	1,50E-03
NHW	kg	0,21453136	0,0102714	3,63E-01	5,88E-01	2,37E-03	2,05E-03	2,05E-03
RW	kg	0,00019828	0	0,00E+00	1,98E-04	0,00E+00	7,12E-04	7,12E-04

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

End of life - Output flow								
Parameter	Unit	A1	A2	A3	A1- A3	A4	A5	Sum A1-A5
CR	kg	0	0	0	0	0	0	0
MR	kg	0,00679649	0,0036367	9,63E-05	1,05E-02	8,41E-04	0,00E+00	1,14E-02
MER	kg	0	0	0	0	0	0	0
EEE	MJ	0	0	0	0	0	0	0
ETE	MJ	0	0	0	0	0	0	0

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

Reading example: $9,0 \text{ E-}03 = 9,0 \cdot 10^{-3} = 0,009$

Additional Norwegian requirements

Greenhouse gas emission 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).

Data source	Amount	Unit
Econinvent v3 (june 2014)	24	CO ₂ -eqv/kWh

Dangerous substances

- The product contains no substances given by the REACH Candidate list or the Norwegian priority list
- The product contains substances given by the REACH Candidate list or the Norwegian priority list that are less than 0,1 % by weight.
- The product contain dangerous substances, more then 0,1% by weight, given by the REACH Candidate List or the Norwegian Priority list, see table.
- The product contains no substances given by the REACH Candidate list or the Norwegian priority list. The product is classified as hazardous waste (Avfallsforskriften, Annex III), see table.

Name	CAS no.	Amount

Indoor environment

The products are tested by GEV Emicode in accordance with ISO16000 and meet the requirements for the ECR1^{Plus} label.

Carbon footprint

Carbon footprint has not been worked out for the product.

Bibliography

ISO 14025:2010	Environmental labels and declarations - Type III environmental declarations - Principles and procedures
ISO 14044:2006	Environmental management - Life cycle assessment - Requirements and guidelines
EN 15804:2012+A1:2013	Sustainability of construction works - Environmental product declaration - Core rules for the product category of construction products
ISO 21930:2007	Sustainability in building construction - Environmental declaration of building products
NPCR09:2012	Technical - Chemical products for the building- and construction industry
Sjöstrand, 2016	LCA report for Mapei Mortar products, Sweco, Report nr 01-2016
GEV Emicode: 2012	Association for the control of emissions from products for flooring installation, adhesives and building materials, License nr: 3475/01.10.05, February 1, 2012

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