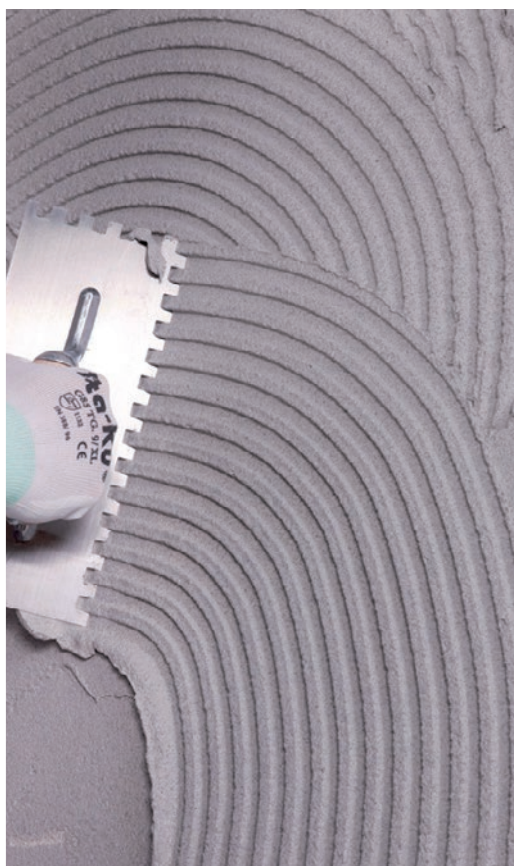




ENVIRONMENTAL PRODUCT DECLARATION

In accordance with ISO 14025 for

Mapetherm AR1
Mapetherm AR1 GG
Mapetherm AR1 Light



Programme:
**The International
EPD® System;**
www.environdec.com

Programme
operator:
EPD International AB

EPD registration
number:
S-P-01012

Approval
date:
2017-10-20

Valid until:
2022-10-19

Geographical
scope:
International





1. COMPANY DESCRIPTION / GOAL & SCOPE

Founded in 1937 in Milan, Italy, Mapei produces adhesives and complementary products for laying all types of floor, wall and coating materials, and is also specialized in other chemical products used in the building industry, such as waterproofing products, special mortars, admixtures for concrete, products for underground constructions and for the restoration of concrete and historical buildings.

There are currently 81 subsidiaries in Mapei Group, with a total of 73 production facilities located around the world in 34 different countries and in 5 different continents. Mapei has also 18 central laboratories. Most locations are ISO 9001 and ISO 14001 or EMAS-certified.

Mapei's strategy of internationalization is based on two main objectives: being closer to local needs and the lowest transport costs possible. With the declared objective of being close to buyers and clients, the strength of Mapei in the five continents is to comply the requirements of each single country, and to use only locally-based managers and qualified personnel, without changing the approach of the Company.

Mapei invests 12% of its company's total work-force and 5% of its turnover in Research & Development; in particular, 70% of its R&D efforts are directed to develop eco-sustainable and environmentally friendly products which give important contribution to all main green rating for eco-sustainable buildings such as LEED and BREEAM.

Furthermore, Mapei has developed a sales and technical service network with offices all over the world and offers an efficient Technical Assistance Service that is valued by architects, engineers, contractors and owners.

The goal of the study is to provide necessary data and documentation to produce an EPD according to the requirements of PCR according to EN 15804:2014 and PCR Environdec, version 2.2, date 2017-05-30 and to have more comprehension about the environmental impacts related to **Mapetherm AR1**, **Mapetherm AR1 GG** and **Mapetherm AR1 Light** manufactured in Mapei Italian plants (located in Mediglia, Latina, Sassuolo and Fiorano) and in Norwegian plant (located in Sagstua), in year 2016, including packaging of the finished products.

Target audiences of the study are customers and other parties with an interest in the environmental impacts of **Mapetherm AR1**, **Mapetherm AR1 GG** and **Mapetherm AR1 Light**.

This analysis shall not support comparative assertions intended to be disclosed to the public.

2. PRODUCT DESCRIPTION

Mapetherm AR1, **Mapetherm AR1 GG** and **Mapetherm AR1 Light** are one component cementitious mortars for bonding and leveling thermal insulating panels and insulation cladding systems.

Mapetherm AR1 and **Mapetherm AR1 GG** are supplied in 25 kg multiply bags.

Mapetherm AR1 Light is supplied in 23 kg multiply bags.

Mapetherm AR1 and **AR1 GG (grey)** are manufactured in Mediglia, Latina and Fiorano plants (Italy). **Mapetherm AR1 GG (grey)** is also manufactured in Sagstua plant (Norway).

Mapetherm AR1 GG (white) is manufactured in Mediglia and Fiorano plants and **Mapetherm AR1 Light** is manufactured entirely in Sassuolo plant.

These three products are compliant with EN 998-1 and their consumptions are the following:

Table 1: Consumption of **Mapetherm AR1**, **Mapetherm AR1 GG** and **Mapetherm AR1 Light**

Product	Consumption (kg/m ²)	
Mapetherm AR1	5 1,4	(for bonding insulating panels) (as skimming compound)
Mapetherm AR1 GG	5 1,45	(for bonding insulating panels) (as skimming compound)
Mapetherm AR1 Light	4 1,30	(for bonding insulating panels) (as skimming compound)

Note: Average amounts from Technical Data Sheets (TDS)

3. CONTENT DECLARATION

The main components and ancillary materials of **Mapetherm AR1**, **Mapetherm AR1 GG** and **Mapetherm AR1 Light** are the following:

Table 2: Composition

Materials	Percentage (%)
Binders	20 – 30
Fillers	60 – 80
Other (additives & packaging)	2 – 5

These products contain no substances of very high concern (SVHC) on the REACH Candidate List published by the European Chemicals Agency in a concentration more than 0,1 % (by unit weight).



Mapetherm AR1
Mapetherm AR1 GG
Mapetherm AR1 Light



4. DECLARED UNIT AND REFERENCE SERVICE LIFE

The declared unit is 1 kg of powder (packaging included).

Packaging materials include:

- Wooden pallet
- Multiply bags (paper/PE/paper)
- LDPE used as wrapping material

Due to the selected system boundary, the reference service life of the products is not specified.

5. SYSTEM BOUNDARIES & ADDITIONAL TECHNICAL INFORMATION

The approach is a “cradle to gate”.

The following modules have been considered:

- A1, A2, A3 (Product stage): extraction and transport of raw materials, packaging included, and manufacturing process;

Table 3: System boundaries

System Boundaries													
A1 – A3			A4 – A5		B1 – B7					C1 – C4			
PRODUCT STAGE			CONSTRUCTION STAGE		USE STAGE					END OF LIFE STAGE			
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	C1	C2	C3	C4
Raw Material Supply	Transport	Manufacturing	Transport	Installation Process	Use	Maintenance	Repair	Replacement	Refurbishment	Deconstruction/ Demolition	Transport	Waste Processing	Disposal
					B6	Operational Energy Use							
					B7	Operational Water Use							

includedexcluded

■ included ■ excluded

A brief description of production process is the following:

Figure 1: Production process detail - © Photo Halvor Gudim



The production process starts from raw materials, that are purchased from external and intercompany suppliers and stored in the plant. Bulk raw materials are stored in specific silos and added automatically in the production mixer, according to the formula of the product. Other raw materials, supplied in bags or big bags, are stored in the warehouse and added automatically or manually in the mixer. The production is a discontinuous process, in which all the components are mechanically mixed in batches. The semi-finished product is then packaged in bags, put on wooden pallets, covered by stretched hoods and stored in the Finished Products' warehouse. The quality of final products is controlled before the sale.

Mapetherm AR1
Mapetherm AR1 GG
Mapetherm AR1 Light



Figure 2: Sagstua Plant



Figure 3: Mediglia Plant



6. CUT-OFF RULES & ALLOCATION

Criteria for the exclusion of inputs and outputs (cut-off rules) in the LCA, information modules and any additional information are intended to support an efficient calculation procedure. They are not applied in order to hide data.

The following procedure is followed for the exclusion of inputs and outputs:

- All inputs and outputs to a unit process, for which data are available, are included in the calculation.
- Less than 1% of the total mass inputs/outputs of the unit process A3 are cut-off (see Table 4).

Input flows are covered for the whole formula.

Table 4: Cut-off criteria

Process excluded from study	Cut-off criteria	Quantified contribution from process
A3: production (auxiliary materials)	less than 10^{-5} kg/kg of finished product	Sensitivity study demonstrates a relative contribution lower than 0,5%
A3: waste	less than 10^{-5} kg/kg of finished product	Sensitivity study demonstrates a relative contribution lower than 0,5%

For the allocation procedure and principles, consider the following table (Table 5):

Table 5: Allocation procedure and principles

Module	Allocation Principle
A1	All data are referred to 1 kg of powder product <ul style="list-style-type: none"> • A1: electricity is allocated to the whole plant (for Italian plants) and to mortar plant (for Norwegian plant)
A3	All data are referred to 1 kg of powder packaged product <ul style="list-style-type: none"> • A3-wastes: all data are allocated to the whole plant (for the Italian plants) and to the mortar plant (for Norwegian plant)

Mapetherm AR1
Mapetherm AR1 GG
Mapetherm AR1 Light










7. ENVIRONMENTAL PERFORMANCE & INTERPRETATION

Following tables show environmental impacts for the products considered according to CML methodology (2010 – Jan2016).

Mapetherm AR1 (Italian production)

Table 6: **Mapetherm AR1** (average Italian production): Environmental categories

System boundary		Upstream + core	
Modules	Unit	A1-A3	
 ADP_e (element)	kg Sb eq.	9,92E-08	
 ADP_f (fossil)	MJ	3,68E+00	
 AP	kg SO ₂ eq.	2,87E-04	
 EP	kg (PO ₄) ³⁻ eq.	9,48E-05	
 GWP₁₀₀	kg CO ₂ eq.	3,00E-01	
 ODP	(Kg R-11 eq.)	1,07E-08	
 POCP	kg ethylene eq.	1,31E-04	

GWP100: Global Warming Potential; **ADPe:** Abiotic Depletion Potential (elements); **EP:** Eutrophication Potential; **AP:** Acidification Potential; **POCP:** Photochemical Ozone Creation Potential; **ODP:** Ozone Depletion Potential; **ADPf:** Abiotic Depletion Potential (fossil)

Table 7: **Mapetherm AR1** (average Italian production): Other environmental indicators

System boundary		Upstream + core
Parameter	Unit	A1-A3
RPEE	MJ	4,46E-01
RPEM	MJ	-
TPE	MJ	4,46E-01
NRPE	MJ	3,77E+00
NRPM	MJ	-
TRPE	MJ	3,77E+00
SM	kg	-
RSF	MJ	-
NRSF	MJ	-
W	m ³	1,41E-03

RPEE Renewable primary energy as energy carrier; **RPEM** Renewable primary energy as material utilisation; **TPE** Total use of renewable primary energy sources; **NRPE** Non-renewable primary energy as energy carrier; **NRPM** Non-renewable primary energy as material utilization; **TRPE** Total use of non-renewable primary energy sources; **SM** Use of secondary materials; **RSF** Renewable secondary fuels; **NRSF** Non-renewable secondary fuels; **W** Net use of fresh water [total freshwater consumption]

Table 8: **Mapetherm AR1** (average Italian production): Waste production & other output flows

System boundary		Upstream + core
Parameter	Unit	A1-A3
NHW	kg	2,45E-03
HW	kg	1,29E-04
RW	kg	0,00E+00
Components for re-use	kg	-
Materials for recycling	kg	-
Materials for energy recovery	kg	-
Exported energy	MJ	-

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








Mapetherm AR1
Mapetherm AR1 GG
Mapetherm AR1 Light



Mapetherm AR1 GG grey

(Italian production)

Table 9: **Mapetherm AR1 GG grey** (average Italian production): Environmental categories

System boundary		Upstream + core	
Modules	Unit	A1-A3	
 ADP_e (element)	kg Sb eq.	1,78E-07	
 ADP_f (fossil)	MJ	3,12E+00	
 AP	kg SO ₂ eq.	2,58E-04	
 EP	kg (PO ₄) ³⁻ eq.	1,11E-04	
 GWP₁₀₀	kg CO ₂ eq.	3,29E-01	
 ODP	(Kg R-11 eq.)	1,45E-08	
 POCP	kg ethylene eq.	1,50E-04	

GWP₁₀₀: Global Warming Potential; **ADPe**: Abiotic Depletion Potential (elements); **EP**: Eutrophication Potential; **AP**: Acidification Potential; **POCP**: Photochemical Ozone Creation Potential; **ODP**: Ozone Depletion Potential; **ADPf**: Abiotic Depletion Potential (fossil)

Table 10: **Mapetherm AR1 GG grey** (average Italian production): Other environmental indicators

System boundary		Upstream + core
Parameter	Unit	A1-A3
RPEE	MJ	4,47E-01
RPEM	MJ	-
TPE	MJ	4,47E-01
NRPE	MJ	3,18E+00
NRPM	MJ	-
TRPE	MJ	3,18E+00
SM	kg	-
RSF	MJ	-
NRSF	MJ	-
W	m ³	9,75E-04

RPEE Renewable primary energy as energy carrier; **RPEM** Renewable primary energy as material utilisation; **TPE** Total use of renewable primary energy sources; **NRPE** Non-renewable primary energy as energy carrier; **NRPM** Non-renewable primary energy as material utilization; **TRPE** Total use of non-renewable primary energy sources; **SM** Use of secondary materials; **RSF** Renewable secondary fuels; **NRSF** Non-renewable secondary fuels; **W** Net use of fresh water [total freshwater consumption]

Table 11: **Mapetherm AR1 GG grey** (average Italian production): Waste production & other output flows

System boundary		Upstream + core
Parameter	Unit	A1-A3
NHW	kg	3,07E-03
HW	kg	1,61E-05
RW	kg	0,00E+00
Components for re-use	kg	-
Materials for recycling	kg	-
Materials for energy recovery	kg	-
Exported energy	MJ	-

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








Mapetherm AR1
Mapetherm AR1 GG
Mapetherm AR1 Light



Mapetherm AR1 GG grey

(Norwegian production)

Table 12: **Mapetherm AR1 GG grey** (produced in Norwegian plant): Environmental categories

System boundary		Upstream + core
Modules	Unit	A1-A3
 ADP_e (element)	kg Sb eq.	3,23E-07
 ADP_f (fossil)	MJ	2,50E+00
 AP	kg SO ₂ eq.	3,14E-04
 EP	kg (PO ₄) ³⁻ eq.	1,32E-04
 GWP₁₀₀	kg CO ₂ eq.	2,84E-01
 ODP	(Kg R-11 eq.)	1,49E-09
 POCP	kg ethylene eq.	3,78E-05

GWP100: Global Warming Potential; **ADPe:** Abiotic Depletion Potential (elements); **EP:** Eutrophication Potential; **AP:** Acidification Potential; **POCP:** Photochemical Ozone Creation Potential; **ODP:** Ozone Depletion Potential; **ADPf:** Abiotic Depletion Potential (fossil)

Table 13: **Mapetherm AR1 GG grey** (produced in Norwegian plant): Other environmental indicators

System boundary		Upstream + core
Parameter	Unit	A1-A3
RPEE	MJ	8,44E-01
RPEM	MJ	-
TPE	MJ	8,44E-01
NRPE	MJ	2,57E+00
NRPM	MJ	-
TRPE	MJ	2,57E+00
SM	kg	-
RSF	MJ	-
NRSF	MJ	-
W	m ³	1,39E-03

RPEE Renewable primary energy as energy carrier; **RPEM** Renewable primary energy as material utilisation; **TPE** Total use of renewable primary energy sources; **NRPE** Non-renewable primary energy as energy carrier; **NRPM** Non-renewable primary energy as material utilization; **TRPE** Total use of non-renewable primary energy sources; **SM** Use of secondary materials; **RSF** Renewable secondary fuels; **NRSF** Non-renewable secondary fuels; **W** Net use of fresh water [total freshwater consumption]

Table 14: **Mapetherm AR1 GG grey** (produced in Norwegian plant): Waste production & other output flows

System boundary		Upstream + core
Parameter	Unit	A1-A3
NHW	kg	2,27E-02
HW	kg	2,75E-06
RW	kg	0,00E+00
Components for re-use	kg	-
Materials for recycling	kg	-
Materials for energy recovery	kg	-
Exported energy	MJ	-








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

Mapetherm AR1
Mapetherm AR1 GG
Mapetherm AR1 Light

Mapetherm AR1 GG white

(Italian production)

Table 15: **Mapetherm AR1 GG white** (average Italian production): Environmental categories

System boundary		Upstream + core	
Modules	Unit	A1-A3	
 ADP_e (element)	kg Sb eq.	1,78E-07	
 ADP_f (fossil)	MJ	2,29E+00	
 AP	kg SO ₂ eq.	3,59E-04	
 EP	kg (PO ₄) ³⁻ eq.	1,93E-04	
 GWP₁₀₀	kg CO ₂ eq.	3,65E-01	
 ODP	(Kg R-11 eq.)	6,08E-09	
 POCP	kg ethylene eq.	2,77E-05	

GWP100: Global Warming Potential; **ADP_e:** Abiotic Depletion Potential (elements); **EP:** Eutrophication Potential; **AP:** Acidification Potential; **POCP:** Photochemical Ozone Creation Potential; **ODP:** Ozone Depletion Potential; **ADP_f:** Abiotic Depletion Potential (fossil)

Table 16: **Mapetherm AR1 GG white** (average Italian production): Other environmental indicators

System boundary		Upstream + core
Parameter	Unit	A1-A3
RPEE	MJ	4,80E-01
RPEM	MJ	-
TPE	MJ	4,80E-01
NRPE	MJ	2,35E+00
NRPM	MJ	-
TRPE	MJ	2,35E+00
SM	kg	-
RSF	MJ	-
NRSF	MJ	-
W	m ³	9,92E-04

RPEE Renewable primary energy as energy carrier; **RPEM** Renewable primary energy as material utilisation; **TPE** Total use of renewable primary energy sources; **NRPE** Non-renewable primary energy as energy carrier; **NRPM** Non-renewable primary energy as material utilization; **TRPE** Total use of non-renewable primary energy sources; **SM** Use of secondary materials; **RSF** Renewable secondary fuels; **NRSF** Non-renewable secondary fuels; **W** Net use of fresh water [total freshwater consumption]

Table 17: **Mapetherm AR1 GG white** (average Italian production): Waste production & other output flows

System boundary		Upstream + core
Parameter	Unit	A1-A3
NHW	kg	3,96E-03
HW	kg	1,31E-04
RW	kg	0,00E+00
Components for re-use	kg	-
Materials for recycling	kg	-
Materials for energy recovery	kg	-
Exported energy	MJ	-








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

Mapetherm AR1
Mapetherm AR1 GG
Mapetherm AR1 Light

Mapetherm AR1 Light white

(Italian production)

Table 18: **Mapetherm AR1 Light white** (average Italian production): Environmental categories

System boundary		Upstream + core
Modules	Unit	A1-A3
 ADP_e (element)	kg Sb eq.	3,58E-07
 ADP_f (fossil)	MJ	4,34E+00
 AP	kg SO ₂ eq.	7,09E-04
 EP	kg (PO ₄) ³⁻ eq.	2,26E-04
 GWP₁₀₀	kg CO ₂ eq.	4,36E-01
 ODP	(Kg R-11 eq.)	6,08E-09
 POCP	kg ethylene eq.	6,15E-05

GWP100: Global Warming Potential; **ADPe:** Abiotic Depletion Potential (elements); **EP:** Eutrophication Potential; **AP:** Acidification Potential; **POCP:** Photochemical Ozone Creation Potential; **ODP:** Ozone Depletion Potential; **ADPf:** Abiotic Depletion Potential (fossil)

Table 19: **Mapetherm AR1 Light white** (average Italian production): Other environmental indicators

System boundary		Upstream + core
Parameter	Unit	A1-A3
RPEE	MJ	1,14E-03
RPEM	MJ	-
TPE	MJ	1,14E-03
NRPE	MJ	2,27E-02
NRPM	MJ	-
TRPE	MJ	2,27E-02
SM	kg	-
RSF	MJ	-
NRSF	MJ	-
W	m ³	2,59E-05

RPEE Renewable primary energy as energy carrier; **RPEM** Renewable primary energy as material utilisation; **TPE** Total use of renewable primary energy sources; **NRPE** Non-renewable primary energy as energy carrier; **NRPM** Non-renewable primary energy as material utilization; **TRPE** Total use of non-renewable primary energy sources; **SM** Use of secondary materials; **RSF** Renewable secondary fuels; **NRSF** Non-renewable secondary fuels; **W** Net use of fresh water [total freshwater consumption]

Table 20: **Mapetherm AR1 Light white** (average Italian production): Waste production & other output flows

System boundary		Upstream + core
Parameter	Unit	A1-A3
NHW	kg	1,77E-03
HW	kg	2,46E-05
RW	kg	0,00E+00
Components for re-use	kg	-
Materials for recycling	kg	-
Materials for energy recovery	kg	-
Exported energy	MJ	-

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

Mapetherm AR1
Mapetherm AR1 GG
Mapetherm AR1 Light



Tables from 6 to 20 show absolute results for all the environmental categories considered. Calculations point out that module **A1** has the highest contribution for most environmental indicators.

Raw materials extraction and processing show the most relevant environmental load considering the whole life cycle of the finished product. In particular, the hydraulic and organic binders and the fillers have the strongest influence on the results.

The relative contribution of module **A3** of **Mapetherm AR1 Light** is higher than the other products, due to the different weight of the supplied product in the multiplybag (23 kg for **Mapetherm AR1 Light** instead of 25 kg for the others).

The transportation module **A2** has a significant contribution for most environmental impact categories (ODP and ADPe excluded). Module **A2** shows a negative contribution in POCP, due to NO and NO₂ emission factors as reported in CML 2001 (Jan. 2016) methodology.

The following tables show the relative contributions of the modules **A1** – **A3** for the products considered in this EPD.

Table 21: Environmental Impact as percentage – **Mapetherm AR1** (Italian production)

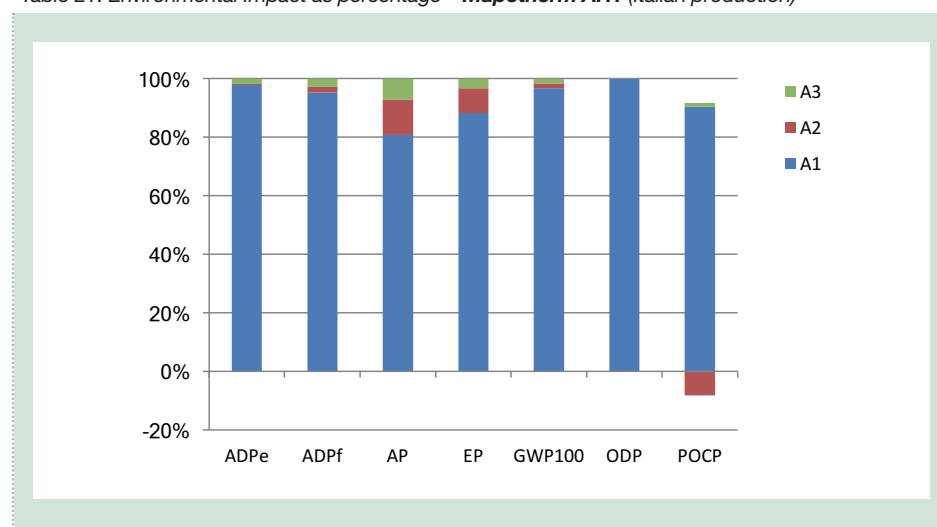


Table 22: Environmental Impact as percentage – **Mapetherm AR1 GG grey** (Italian production)

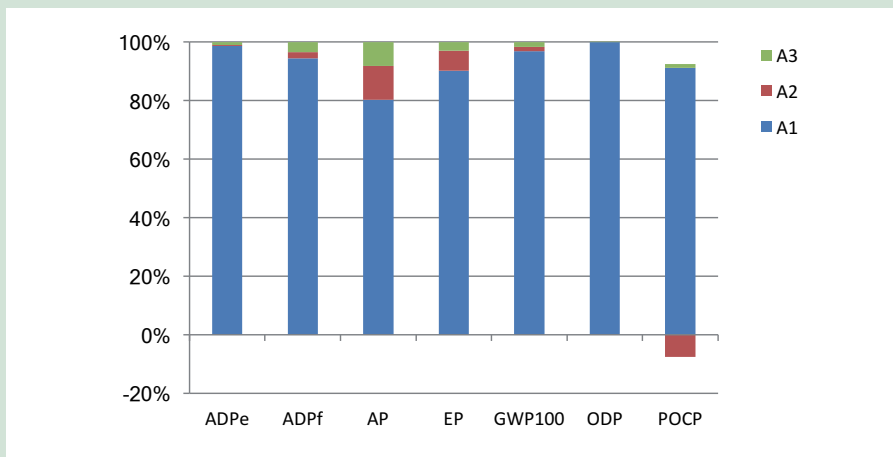
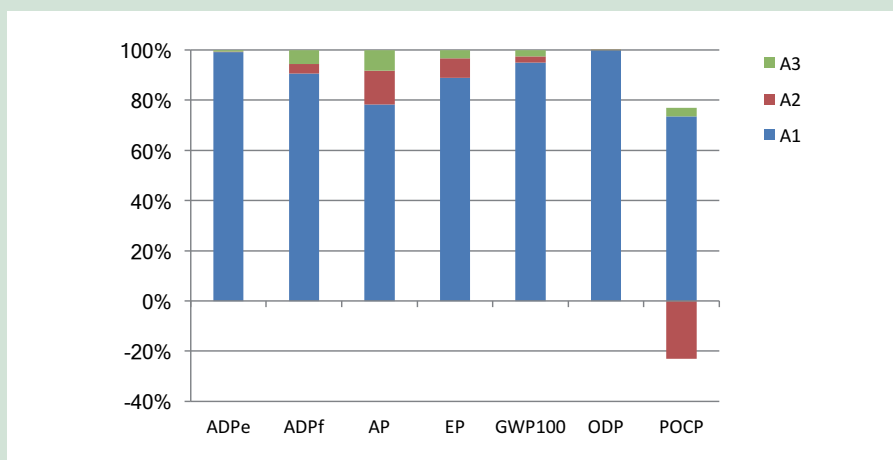


Table 23: Environmental Impact as percentage – **Mapetherm AR1 GG grey** (Norwegian production)



Mapetherm AR1
Mapetherm AR1 GG
Mapetherm AR1 Light

Table 24: Environmental Impact as percentage – **Mapetherm AR1 GG white** (Italian production)

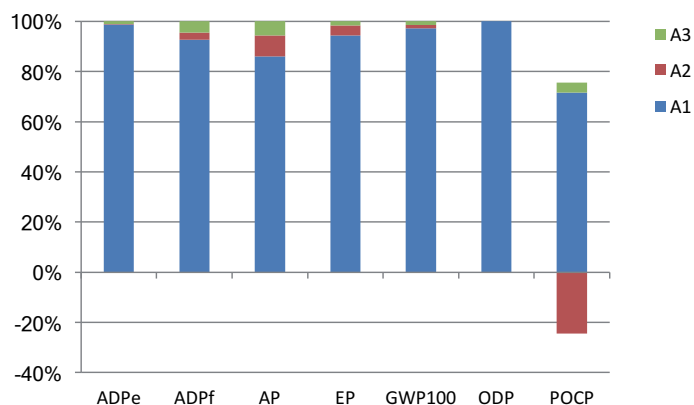
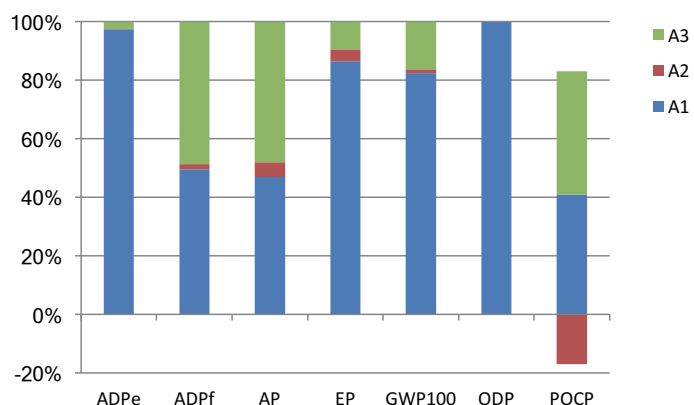


Table 25: Environmental Impact as percentage – **Mapetherm AR1 Light** (Italian production)



More details about electrical mixes used in this EPD are shown below:

	Data source	Amount	Unit
Electricity grid mix (IT) – 2013	GaBi database	0,4290	kg CO ₂ -eqv/kWh
Electricity from photovoltaic (IT) – 2013	GaBi database	0,0512	kg CO ₂ -eqv/kWh
Electricity grid mix (NO) – 2013	GaBi database	0,0356	kg CO ₂ -eqv/kWh

8. DATA QUALITY

Table 26: Data quality

Dataset & Geographical reference	Database (source)	Temporary reference
A1; A3		
PTL binder	EPD NORCEM n23N rev1; EPD AITEC S-P-00880; EPD CIMSA: EPD-CIS-20150243-CAA1-EN	2013 2016 2015
Fillers (EU)	GaBi Database	2016
Electricity grid mix/ from photovoltaic (NO, IT)	GaBi Database	2013
Additives & others (Packaging components)	GaBi Database, Plastic Europe, EPD EFCA 20150091	2005 – 2016
A2		
Truck transport (euro 3, 27ton payload – GLO)	GaBi Database	2016
Oceanic ship (27500 DWT - GLO)	GaBi Database	2016
Light Train (Gross Ton Weight 500 Tons - GLO)	GaBi Database	2016
Electricity mix (EU)	GaBi Database	2013
Diesel for transport (EU)	GaBi Database	2013
Heavy Fuel Oil (EU)	GaBi Database	2013

All data included in table above refer to a period between 2005 and 2016; the most relevant ones are European or specific from suppliers, while the others (i.e. transport and minor contribution dataset), come from European, global and German databases.

All dataset are not more than 10 years old (according to EN 15804 § 6.3.7 “Data quality requirements”). The only exception is due to one packaging component coming from PlasticEurope database.

Primary data concern the year 2016 and represent the whole annual production.

Mapetherm AR1
Mapetherm AR1 GG
Mapetherm AR1 Light



9. VERIFICATION AND REGISTRATION

EPD of construction products may not be comparable if they do not comply with EN 15804. Environmental product declarations within the same product category from different programs may not be comparable.

CEN standard EN15804 served as the core PCR

PCR:	PCR 2012:01 Construction products and Construction services, Version 2.2, 2017-05-30
PCR review was conducted by:	The Technical Committee of the International EPD® System. Chair: Massimo Marino Contact via info@environdec.com
Independent verification of the declaration and data, according to ISO 14025	<input checked="" type="checkbox"/> EPD Process Certification (Internal) <input type="checkbox"/> EPD Verification (external)
Third party verifier:	Certiquality S.r.l. Number of accreditation: 003H rev14
Accredited or approved by:	Accredia

10. REFERENCES

- GENERAL PROGRAMME INSTRUCTIONS OF THE INTERNATIONAL EPD® SYSTEM. VERSION 2.5.
- PCR 2012:01; “PRODUCT GROUP CLASSIFICATION: MULTIPLE UN CPC CODES CONSTRUCTION PRODUCTS AND CONSTRUCTION SERVICES”; VERSION 2.2
- EN 13813 “SCREED MATERIAL AND FLOOR SCREEDS. SCREED MATERIAL. PROPERTIES AND REQUIREMENTS”

CONTACT INFORMATION

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LCA author:	 ADHESIVES • SEALANTS • CHEMICAL PRODUCTS FOR BUILDING Mapei SpA www.mapei.it ; Environmental Sustainability Office
Programme operator:	 EPD International AB info@enviromdec.com

Mapetherm AR1
Mapetherm AR1 GG
Mapetherm AR1 Light

SEDE

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ANNEX 1

ANNEX 1: Self declaration from EPD owner

Specific Norwegian requirements

1 Applied electricity data set used in the manufacturing phase

The electricity mix for the electricity used in manufacturing (A3) is the electricity grid mix

<0,0356 kg CO₂ eqv/kWh> (Norwegian grid mix)

<0,4290 kg CO₂ eqv/kWh> (Italian grid mix)

<0,0512 kg CO₂ eqv/kWh> (Italian mix from photovoltaic)

2 Content of dangerous substances

- ☒ The product contains no substances given by the REACH Candidate list or the Norwegian priority list.
- ☐ The product contains substances that are less than 0.1% by weight given by the REACH Candidate or the Norwegian priority list.
- ☐ The product contains dangerous substances more than 0.1% by weight given in the REACH candidate list or the Norwegian Priority List, concentrations is given in the EPD:

Dangerous substances from the REACH candidate list or the Norwegian Priority List	CAS No.	Quantity (concentration, wt%/FU(DU)).
Substance 1		
Substance n		

3 Transport from the place of manufacture to a central warehouse

Transport distance, and CO₂-eqv./DU from transport of the product from factory gate to central warehouse in Oslo shall be given. The following table shall be included in the EPD:

Type	Capacity utilisation (incl. return) %	Type of vehicle	Distance km	Fuel/Energy use	Unit	Value (l/t)	Kg CO ₂ -eqv./DU
Boat							
Truck (Norwegian plant)	85	27 tonn, EURO 3	95	0,0182	l/tkm	1,73	1,37E-02
Truck (Italian plant)	85	27 tonn, EURO 3	1950	0,0182	l/tkm	35,49	1,37E-02
Railway							
Rail							
Air							
Total							

4 Impact on the indoor environment

☐ Indoor air emission testing has been performed; specify test method and reference:

☐ No test has being performed

☒ Not relevant; specify : the products are cementitious mortars for bonding and leveling thermal insulating panels. They do not affect the indoor air quality