

MB 2K [eco]

Remmers GmbH

Calculation number:	EPD-NIBE-20220711-28756
Generation on:	08-12-2023
Issue date:	08-12-2023
Valid until:	08-12-2028
Status:	verified



294025
Kombibehälter
(2 x 6,25kg PK + 2 x 6,25kg FK)

1 General information

1.1 PRODUCT

MB 2K [eco]

1.2 VALIDITY

Issue date: 08-12-2023

Valid until: 08-12-2028

1.3 OWNER OF THE DECLARATION

Manufacturer: Remmers GmbH

Address: Bernhard-Remmers-Straße 13, 49624 Lönigen

E-mail: tfangmeyer@remmers.de

Website: <https://www.remmers.com/de>

Production location: Remmers GmbH

Address production location: Bernhard-Remmers-Straße 13, 49624 Lönigen

1.4 VERIFICATION OF THE DECLARATION

The independent verification is in accordance with the ISO 14025:2011. The LCA is in compliance with ISO 14040:2006 and ISO 14044:2006. The EN 15804:2012+A2:2019 serves as the core PCR.

Internal External



Lucas Pedro Berman, Senda

1.5 PRODUCT CATEGORY RULES

Kiwa-Ecobility Experts (Kiwa-EE) – General Product Category Rules (2022-02-14)

Institut Bauen und Umwelt e.V (IBU) - Complementary Product Category Rule (c-PCR): Requirements on the EPD for Mineral factory-made mortar - 12/07/2023 v3

1.6 DECLARED UNIT

Kg

Declared unit is 1 kg of MB 2K [eco] installed and, with an estimated useful life of at least 30 years. The technical lifespan of the raw materials in the product aligns with the overall product lifespan. The reference service life of the product corresponds to the estimated lifetime of the building in which the product is utilized.

reference_unit: kilogram (kg)

1.7 CONVERSION FACTORS

Description	Value	Unit
reference_unit	1	kg
Conversion factor to 1 kg	1.004264	kg

1.8 SCOPE OF DECLARATION AND SYSTEM BOUNDARIES

This is a Cradle to gate with options, modules C1-C4 and module D LCA. The life cycle stages included are as shown below:

(X = module included, ND = module not declared)

A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
X	X	X	X	X	ND	ND	ND	ND	ND	ND	ND	X	X	X	X	X

The modules of the EN15804 contain the following:

Module A1 = Raw material supply Module B5 = Refurbishment

1 General information

Module A2 = Transport	Module B6 = Operational energy use
Module A3 = Manufacturing	Module B7 = Operational water use
Module A4 = Transport	Module C1 = De-construction / Demolition
Module A5 = Construction - Installation process	Module C2 = Transport
Module B1 = Use	Module C3 = Waste Processing
Module B2 = Maintenance	Module C4 = Disposal
Module B3 = Repair	Module D = Benefits and loads beyond the product system boundaries
Module B4 = Replacement	

1.9 COMPARABILITY

In principle, a comparison or assessment of the environmental impacts of different products is only possible if they have been prepared in accordance with EN 15804. For the evaluation of the comparability, the following aspects have to be considered in particular: PCR used, functional or declared unit, geographical reference, the definition of the system boundary, declared modules, data selection (primary or secondary data, background database, data quality), scenarios used for use and disposal phases, and the life cycle inventory (data collection, calculation methods, allocations, validity period). PCRs and general program instructions of different EPDs programs may differ. Comparability needs to be evaluated. For further guidance, see EN 15804+A2 (5.3 Comparability of EPD for construction products) and ISO 14025 (6.7.2 Requirements for comparability).

2 Product

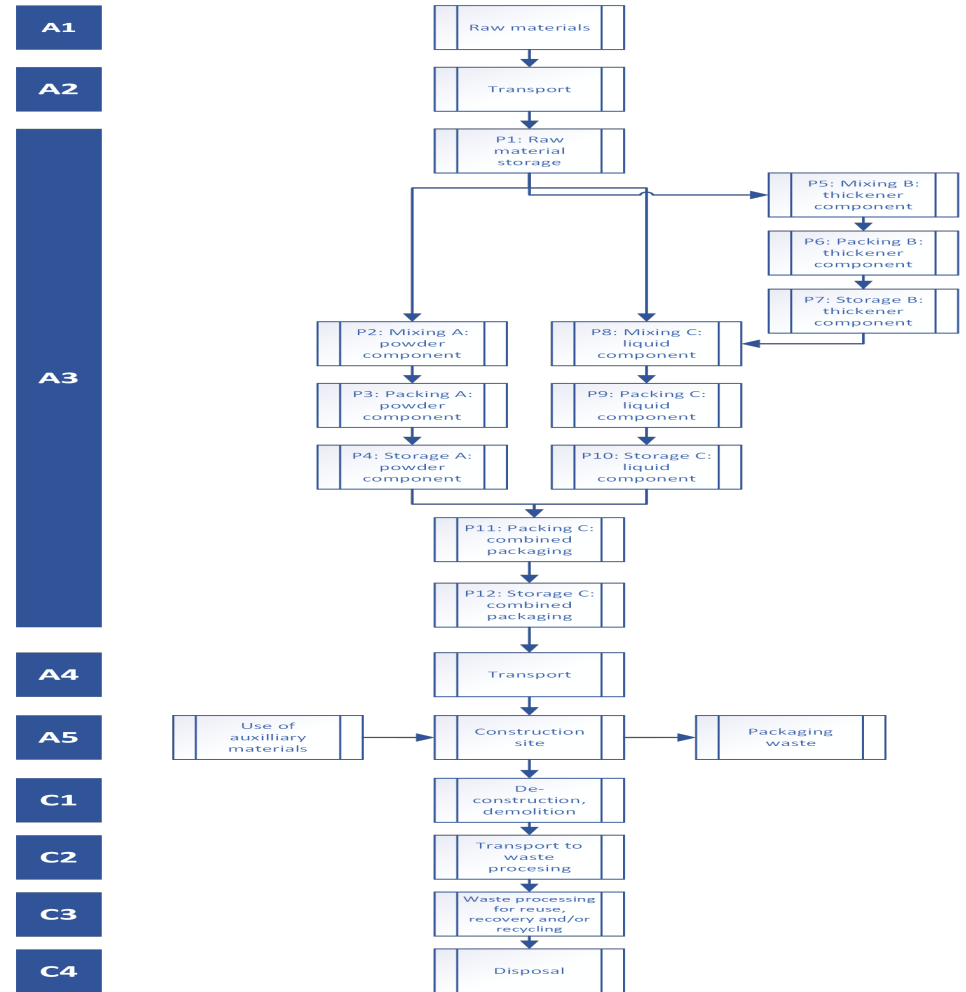
2.1 PRODUCT DESCRIPTION

MB 2K [eco] is a multifunctional building waterproofing system based on an innovative technology that enables the first-time use of a polymer dispersion based on renewable raw materials in a high-quality reactive waterproofing system.

MB 2K [eco] is manufactured at the Lönigen site by Remmers GmbH.

MB 2K [eco] is characterized by the following properties, among others:

- Very low emission (GEV Emission EC 1Plus)
- Fast drying and cross-linking after 24 h (at 5 °C and 90% relative humidity)
- Certified radon-tight
- High adhesive tensile strength
- Highly flexible, expandable and crack-bridging
- Can be painted and plastered over
- Can be applied by slurry, brush, spatula or spray
- Very good adhesion even on non-mineral substrates (e.g. plastics, metals, etc.)



2.2 APPLICATION (INTENDED USE OF THE PRODUCT)

MB 2K [eco] offers the typical areas of application for reactive waterproofing kits as listed below:

2 Product

- New and old building waterproofing
- Mineral substrates
- Soil moisture and non-pressing water
- Accumulating seeping water and pressing water-inclusive construction joint waterproofing for concrete building components
- Non-pressing water on the earth-covered ceiling
- Splash water-/Socket waterproofing
- Sealing in and under Walls
- Water pressing from the inside in tank constructions
- Base and base point waterproofing
- Adhesive bridge on old bitumen

2.3 DESCRIPTION PRODUCTION PROCESS

For the production of the liquid and powder components, the respective raw materials are mixed according to a weight ratio based on the product formulation and separately filled into foil bags. The components packed in foil bags are in turn filled into polypropylene containers according to the packaging variant. Further commissioning takes place on Euro pallets.

2.4 CONSTRUCTION DESCRIPTION

The 2-component material is freshly mixed on site with a suitable stirrer according to the description.

The mixed material is applied to the surface to be sealed, e.g. with a flat trowel or by spraying, in 2 layers of 2 mm dry film thickness each. The second layer is only applied after the first layer can no longer be damaged by the application.

3 Results

3.1 ENVIRONMENTAL IMPACT INDICATORS PER KILOGRAM

CORE ENVIRONMENTAL IMPACT INDICATORS EN15804+A2

Abbreviation	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D	Total
AP	mol H+ eqv.	4.82E-3	2.98E-4	4.46E-4	4.41E-4	2.55E-4	0.00E+0	4.57E-5	1.17E-5	1.25E-5	3.95E-5	6.37E-3
GWP-total	kg CO2 eqv.	9.63E-1	5.14E-2	4.96E-2	7.61E-2	2.14E-1	0.00E+0	7.88E-3	3.68E-2	1.60E-2	-3.44E-3	1.41E+0
GWP-b	kg CO2 eqv.	-3.64E-3	2.37E-5	-7.30E-2	3.51E-5	7.41E-2	0.00E+0	3.64E-6	9.35E-6	1.17E-5	-2.90E-5	-2.44E-3
GWP-f	kg CO2 eqv.	9.66E-1	5.14E-2	1.22E-1	7.60E-2	1.40E-1	0.00E+0	7.88E-3	3.68E-2	1.60E-2	-3.39E-3	1.41E+0
GWP-luluc	kg CO2 eqv.	4.71E-4	1.88E-5	1.20E-4	2.79E-5	3.02E-5	0.00E+0	2.89E-6	3.23E-7	6.57E-7	-1.97E-5	6.52E-4
EP-m	kg N eqv.	8.79E-4	1.05E-4	8.79E-5	1.55E-4	6.01E-5	0.00E+0	1.61E-5	4.80E-6	4.21E-6	-1.13E-5	1.30E-3
EP-fw	kg P eqv.	9.65E-5	5.18E-7	6.20E-6	7.67E-7	3.71E-6	0.00E+0	7.95E-8	4.64E-8	2.49E-8	2.86E-7	1.08E-4
EP-T	mol N eqv.	9.27E-3	1.16E-3	1.02E-3	1.71E-3	6.56E-4	0.00E+0	1.77E-4	5.33E-5	4.65E-5	-2.43E-4	1.38E-2
ODP	kg CFC 11 eqv.	1.46E-7	1.13E-8	1.09E-8	1.68E-8	9.16E-9	0.00E+0	1.74E-9	2.10E-10	4.55E-10	-7.06E-9	1.89E-7
POCP	kg NMVOC eqv.	4.01E-2	3.30E-4	1.11E-3	4.89E-4	1.33E-3	0.00E+0	5.07E-5	1.41E-5	1.68E-5	2.94E-5	4.35E-2
ADP-f	MJ	2.54E+1	7.74E-1	2.56E+0	1.15E+0	1.03E+0	0.00E+0	1.19E-1	2.14E-2	3.45E-2	9.98E-1	3.20E+1
ADP-mm	kg Sb-eqv.	1.37E-5	1.30E-6	1.12E-6	1.93E-6	7.35E-7	0.00E+0	2.00E-7	6.61E-9	1.55E-8	2.11E-7	1.92E-5
WDP	m3 world eqv.	8.24E-1	2.77E-3	5.05E-2	4.10E-3	3.19E-2	0.00E+0	4.25E-4	-6.42E-5	1.49E-3	-1.97E-2	8.95E-1

AP=Acidification (AP) | GWP-total=Global warming potential (GWP-total) | GWP-b=Global warming potential - Biogenic (GWP-b) | GWP-f=Global warming potential - Fossil (GWP-f) | GWP-luluc=Global warming potential - Land use and land use change (GWP-luluc) | EP-m=Eutrophication marine (EP-m) | EP-fw=Eutrophication, freshwater (EP-fw) | EP-T=Eutrophication, terrestrial (EP-T) | ODP=Ozone depletion (ODP) | POCP=Photochemical ozone formation - human health (POCP) | ADP-f=Resource use, fossils (ADP-f) | ADP-mm=Resource use, minerals and metals (ADP-mm) | WDP=Water use (WDP)

ADDITIONAL ENVIRONMENTAL IMPACT INDICATORS EN15084+A2

Abbreviation	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D	Total
ETP-fw	CTUe	1.86E+1	6.91E-1	1.51E+0	1.02E+0	1.95E+0	0.00E+0	1.06E-1	2.44E-2	2.83E-2	-6.00E-1	2.33E+1
PM		3.50E-8	4.62E-9	6.62E-7	6.84E-9	2.19E-8	0.00E+0	7.09E-10	2.14E-10	2.38E-10	-8.94E-12	7.32E-7

ETP-fw=Ecotoxicity, freshwater (ETP-fw) | PM=Particulate Matter (PM) | HTP-c=Human toxicity, cancer (HTP-c) | HTP-nc=Human toxicity, non-cancer (HTP-nc) | IR=Ionising radiation, human health (IR) | SQP=Land use (SQP)

3 Results

Abbreviation	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D	Total
	disease incidence											
HTP-c	CTUh	1.64E-9	2.24E-11	1.09E-10	3.32E-11	8.69E-11	0.00E+0	3.44E-12	4.58E-11	1.77E-12	-4.10E-12	1.94E-9
HTP-nc	CTUh	1.31E-8	7.55E-10	1.24E-9	1.12E-9	9.67E-10	0.00E+0	1.16E-10	1.49E-10	2.41E-11	-1.22E-10	1.74E-8
IR	kBq U235 eqv.	4.36E-2	3.25E-3	4.97E-3	4.80E-3	2.24E-3	0.00E+0	4.98E-4	6.45E-5	1.36E-4	3.27E-4	5.99E-2
SQP	Pt	3.18E+0	6.72E-1	9.33E+0	9.94E-1	4.94E-1	0.00E+0	1.03E-1	4.30E-3	8.17E-2	-2.96E+0	1.19E+1

ETP-fw=Ecotoxicity, freshwater (ETP-fw) | PM=Particulate Matter (PM) | HTP-c=Human toxicity, cancer (HTP-c) | HTP-nc=Human toxicity, non-cancer (HTP-nc) | IR=Ionising radiation, human health (IR) | SQP=Land use (SQP)

CLASSIFICATION OF DISCLAIMERS TO THE DECLARATION OF CORE AND ADDITIONAL ENVIRONMENTAL IMPACT INDICATORS

ILCD classification	Indicator	Disclaimer
ILCD type / level 1	Global warming potential (GWP)	None
	Depletion potential of the stratospheric ozone layer (ODP)	None
	Potential incidence of disease due to PM emissions (PM)	None
ILCD type / level 2	AAcidification potential, Accumulated Exceedance (AP)	None
	Eutrophication potential, Fraction of nutrients reaching freshwater end compartment (EP-freshwater)	None
	Eutrophication potential, Fraction of nutrients reaching marine end compartment (EP-marine)	None
	Eutrophication potential, Accumulated Exceedance (EP-terrestrial)	None
	Formation potential of tropospheric ozone (POCP)	None
ILCD type / level 3	Potential Human exposure efficiency relative to U235 (IRP)	1
	Abiotic depletion potential for non-fossil resources (ADP-minerals&metals)	2
	Abiotic depletion potential for fossil resources (ADP-fossil)	2
	Water (user) deprivation potential, deprivation-weighted water consumption (WDP)	2
	Potential Comparative Toxic Unit for ecosystems (ETP-fw)	2
	Potential Comparative Toxic Unit for humans (HTP-c)	2
	Potential Comparative Toxic Unit for humans (HTP-nc)	2

3 Results

ILCD classification	Indicator	Disclaimer
	Potential Soil quality index (SQP)	2

Disclaimer 1 – 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.

Disclaimer 2 – The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator.

3.2 INDICATORS DESCRIBING RESOURCE USE AND ENVIRONMENTAL INFORMATION BASED ON LIFE CYCLE INVENTORY (LCI)

PARAMETERS DESCRIBING RESOURCE USE

Abbreviation	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D	Total
PERE	MJ	8.00E-1	9.70E-3	7.94E-1	1.44E-2	6.13E-2	0.00E+0	1.49E-3	1.13E-3	5.86E-4	-5.85E-1	1.10E+0
PERM	MJ	9.15E-5	0.00E+0	6.19E-1	0.00E+0	1.86E-2	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	6.37E-1
PERT	MJ	8.00E-1	9.70E-3	1.41E+0	1.44E-2	7.99E-2	0.00E+0	1.49E-3	1.13E-3	5.86E-4	-5.85E-1	1.73E+0
PENRE	MJ	2.66E+1	8.22E-1	1.33E+0	1.22E+0	1.05E+0	0.00E+0	1.26E-1	2.28E-2	3.66E-2	1.77E-1	3.14E+1
PENRM	MJ	3.34E-1	0.00E+0	1.41E+0	0.00E+0	5.24E-2	0.00E+0	0.00E+0	0.00E+0	0.00E+0	8.65E-1	2.66E+0
PENRT	MJ	2.70E+1	8.22E-1	2.74E+0	1.22E+0	1.10E+0	0.00E+0	1.26E-1	2.28E-2	3.66E-2	1.04E+0	3.41E+1
SM	Kg	1.20E-1	0.00E+0	2.90E-2	0.00E+0	4.46E-3	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	1.53E-1
RSF	MJ	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
NRSF	MJ	1.21E-1	0.00E+0	1.21E-3	0.00E+0	3.66E-3	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	1.26E-1
FW	M3	1.69E-2	9.43E-5	1.21E-3	1.40E-4	7.35E-4	0.00E+0	1.45E-5	8.85E-6	3.62E-5	-7.35E-4	1.84E-2

PERE=renewable primary energy ex. raw materials | **PERM**=renewable primary energy used as raw materials | **PERT**=renewable primary energy total | **PENRE**=non-renewable primary energy ex. raw materials | **PENRM**=non-renewable primary energy used as raw materials | **PENRT**=non-renewable primary energy total | **SM**=use of secondary material | **RSF**=use of renewable secondary fuels | **NRSF**=use of non-renewable secondary fuels | **FW**=use of net fresh water

OTHER ENVIRONMENTAL INFORMATION DESCRIBING WASTE CATEGORIES

Abbreviation	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D	Total
HWD	Kg	2.80E-4	1.96E-6	4.89E-6	2.90E-6	8.96E-6	0.00E+0	3.01E-7	8.08E-8	5.28E-8	-1.09E-6	2.98E-4

HWD=hazardous waste disposed | **NHWD**=non hazardous waste disposed | **RWD**=radioactive waste disposed

3 Results

Abbreviation	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D	Total
NHWD	Kg	6.94E-2	4.91E-2	1.64E-2	7.27E-2	2.36E-2	0.00E+0	7.54E-3	3.15E-3	1.42E-1	-3.91E-4	3.84E-1
RWD	Kg	5.96E-5	5.09E-6	5.44E-6	7.53E-6	2.93E-6	0.00E+0	7.80E-7	9.08E-8	2.07E-7	-7.79E-9	8.17E-5

HWD=hazardous waste disposed | NHWD=non hazardous waste disposed | RWD=radioactive waste disposed

ENVIRONMENTAL INFORMATION DESCRIBING OUTPUT FLOWS

Abbreviation	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D	Total
CRU	Kg	0.00E+0	0.00E+0	2.72E-3	0.00E+0	8.16E-5	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	2.80E-3
MFR	Kg	2.76E-5	0.00E+0	1.95E-3	0.00E+0	3.03E-2	0.00E+0	0.00E+0	8.39E-1	0.00E+0	0.00E+0	8.71E-1
MER	Kg	6.01E-5	0.00E+0	6.01E-7	0.00E+0	1.82E-6	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	6.25E-5
EET	MJ	5.22E-9	0.00E+0	7.83E-4	0.00E+0	1.58E-10	0.00E+0	0.00E+0	0.00E+0	0.00E+0	5.37E-1	5.38E-1
EEE	MJ	0.00E+0	0.00E+0	4.55E-4	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	3.12E-1	3.13E-1

CRU=Components for re-use | MFR=Materials for recycling | MER=Materials for energy recovery | EET=Exported Energy Thermic | EEE=Exported Energy Electric

3 Results

3.3 INFORMATION ON BIOGENIC CARBON CONTENT PER KILOGRAM

BIOGENIC CARBON CONTENT

The following Information describes the biogenic carbon content in (the main parts of) the product at the factory gate per kilogram:

Biogenic carbon content	Amount	Unit
Biogenic carbon content in the product	0	kg C
Biogenic carbon content in accompanying packaging	0.02009	kg C

UPTAKE OF BIOGENIC CARBON DIOXIDE

The following amount of uptake of carbon dioxide is account in module A1 by the main parts of the product. Related uptake and release of carbon dioxide in downstream processes are not taken into account in this number although they do appear in the presented results.

Uptake Biogenic Carbon dioxide	Amount	Unit
Packaging	0.07366	kg CO2 (biogenic)

4 Contact information

Publisher	Operator	Owner of declaration
 <p>Kiwa-Ecobility Experts Voltastraße 5 13355 Berlin, DE</p>	 <p>Kiwa-Ecobility Experts Voltastraße 5 13355 Berlin, DE</p>	 <p>Remmers GmbH Bernhard-Remmers-Straße 13 49624 Lönigen, DE</p>
<p>E-mail: DE.Ecobility.Experts@kiwa.com</p> <p>Website: https://www.kiwa.com/de/en/themes/ecobility-experts/ecobility-experts-epd-program/</p>	<p>E-mail: DE.Ecobility.Experts@kiwa.com</p> <p>Website: https://www.kiwa.com/de/en/themes/ecobility-experts/ecobility-experts-epd-program/</p>	<p>E-mail: tfangmeyer@remmers.de</p> <p>Website: https://www.remmers.com/de</p>

Kiwa-Ecobility Experts is established member of the 