

ENVIRONMENTAL PRODUCT DECLARATION

In accordance with ISO 14025 and EN 15804:2012+A2:2019 for
Cement Render/Plasters from Mortar & Plaster (M&P)



Programme:

Programme operator:

EPD registration number:

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Geographical Scope:

Middle East

UN CPC Code:

37410 (Plasters)

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Product Category Rules (PCR): Construction Products, 2019:14, Version 1.11

Independent third-party verification of the declaration and data, according to ISO 14025:2006:

EPD process certification

✓ EPD verification

Third party verifier: Professor Vladimír Kocí

Approved by: The International EPD® System

Procedure for follow-up of data during EPD validity involves third party verifier:

Yes

✓ No

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About Company

Mortar & Plaster (M&P) is a leading manufacturer of Dry mix products based in Abu Dhabi. Our motto is to achieve highest customer satisfaction through the quality of our products and consistency in our services. Mortar & Plaster (M&P) is dedicated to meet the growing and challenging market demand for the dry mix products in U.A.E. M&P is manufacturing the dry mix products based on Cement and Gypsum. Our range of products will cover the overall need of the construction building industry.

M&P will deliver its products to the customers either in paper bags or silos in the form of dry mix. The complete set of machinery will be provided to the customers for the hassle free usage of the products at the construction site. The fully synchronized and mechanized application methods will minimize the overhead workforce cost to a larger extent. We offer mechanized dry mix conveying to any required distance by our system. Fully mechanized application will ensure the consistent quality in the application through out the project.

A wide range of application machines and tools are available to meet with the different product applications.

M&P's silo system with the mechanized dry mix conveying will provide a clean and dust free job site adding more value to health, safety and environment.

M&P products are designed and manufactured meeting the latest specification requirements of BS/EN/ DIN/ASTM standards. Our most modern state of art manufacturing facility and stringent quality control will ensure the quality and consistency in the products . Our fully equipped test laboratory will work round the clock ensuring the quality of the products.

M&P will be assuring the quality of products by strict quality control measures from selection of raw material to the finished products. We can design, develop and manufacture custom made products meeting the specific requirements of our valued customers.

Our dedicated team of sales/QC/site engineers will provide the customers total support as and when required.

M&P offers its products delivery to the site in 25-50 kg paper bags in wooden pallets with plastic shrink wrap or 20 m3 silos which can be placed at site in a convenient position.



Product Information

Product applied as plaster/render over the masonry walls and concrete surfaces at internal and external areas, product is mixed with water and applied at site using plastering spray machines.

Cementitious plaster as per BS EN 998-1 & ASTM C 926.

Product UN CPC code is 37410 (Plasters).

Cement Render/Plasters

MP10: To apply as render/plaster on internal/external concrete block walls. Application by spray machine/manual @ 10-20 mm.

MP11: Lime free pre blended material to apply as render/plaster on internal/external concrete block walls. Application by spray machine/manual @ 10-20 mm.

MP12: To apply as render/plaster on internal/external AAC/concrete block walls. Application by spray machine/manual @ 10-20 mm.

MP13: Lime free pre blended material to apply as render/plaster on internal/external AAC/concrete block walls. Application by spray machine/manual @ 10-20 mm.

MP15: To apply as render on external plinth areas. Application by spray machine/manual @ 15-20 mm.

MP17: To apply as plaster for high strength (>15 MPa) requirements. Application by spray machine/manual @ 15-50 mm.

MP18: To apply as fine thin coat plaster on ceilings and rough cement plaster surfaces. Application by spray machine/manual @ 4-6 mm.

MP18 M: To apply as fine thin coat plaster directly on ceilings, smooth and uneven concrete surfaces. Application by spray machine/manual @ 3-6 mm.

Cement Render/Plasters is free from substances of very high concern (SVHC). The product contains no substances from the REACH Candidate list of 19.01.2021.



LCA Information

Declared Unit: 1 kg of Cement Render Plasters

Time Representativeness: 2021

Database(s) and LCA Software Used: Ecoinvent 3.6, SimaPro 9.1

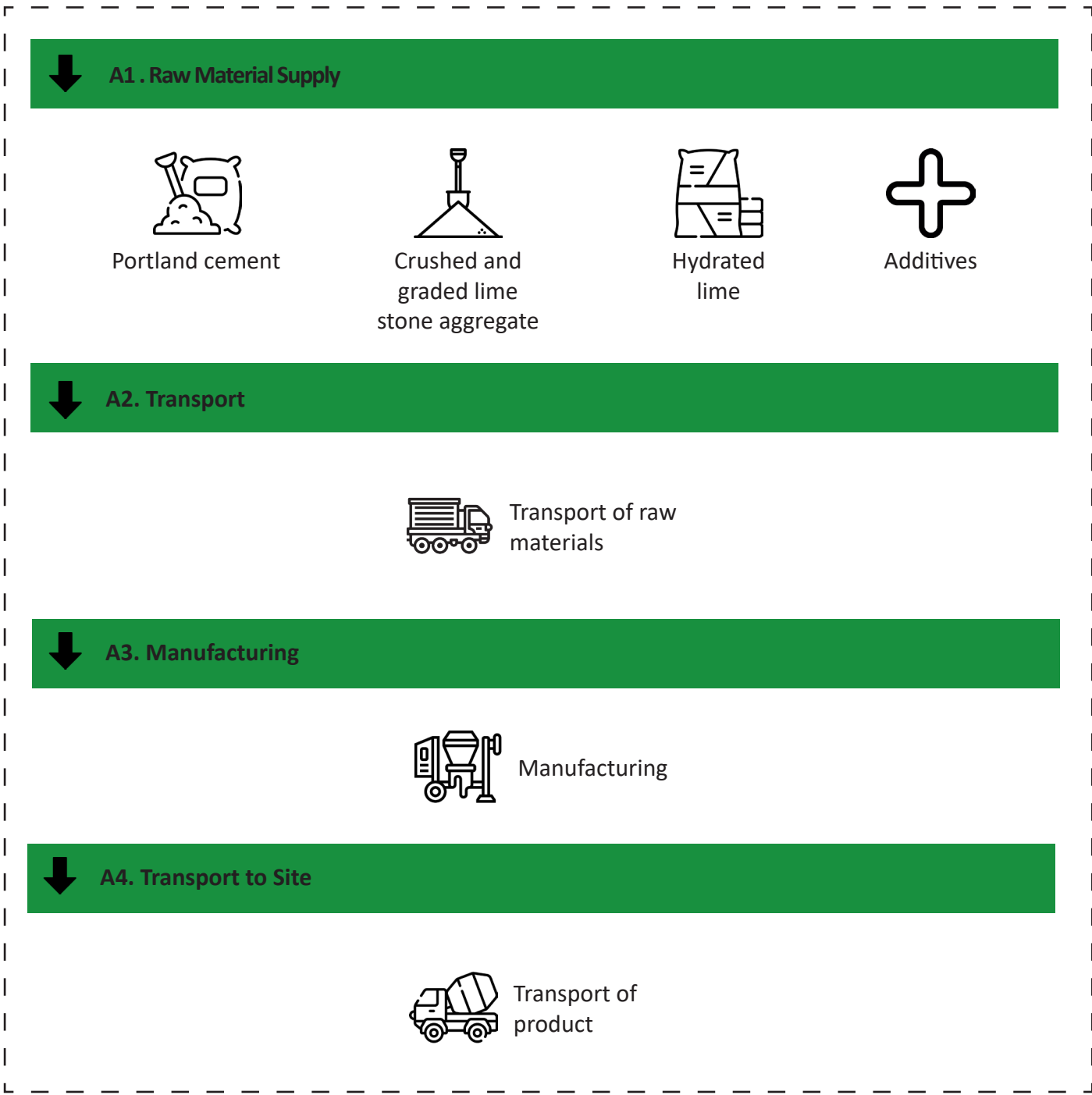
The inventory for the LCA study is based on the 2020 production figures for M&P production plant in United Arab Emirates.

This EPD’s system boundary is cradle to gate. The system boundary covers A1 - A4 product stages.

Upstream			Core			Downstream										Other Environmental Information
Raw Material Supply	Transport	Manufacturing	Transport to Site	Construction Installation	Use	Maintenance	Repair	Replacement	Refurbishment	Operational Energy Use	Operational Water Use	Deconstruction, demolition	Transport	Waste Processing	Disposal	Future reuse, recycling or energy recovery potentials
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
X	X	X	X	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

*ND: Not declared.

System Boundary



System boundary — — —

System Description

A1: Raw Material Supply

M&P uses four main raw materials; portland cement, hydrated Lime, crushed and graded lime stone aggregate and additives. Each raw material consist of several production steps include raw material extraction/ preparation and industrial production processes.

A2: Transportation

Additives are supplied from Europe. Except additives, all of other raw materials are supplied from U.A.E.

Transport Data (A2)	
Vehicle Types	Transport, freight, lorry 16-32 metric ton, euro5 {RoW} market for transport, freight, lorry 16-32 metric ton, EURO5 Cut-off, S Transport, freight, sea, transoceanic ship
Data Type	Related transport data from Ecoivent 3.6

A3: Manufacturing

M&P produces Cement Renders/Plasters from raw materials and package with paper bags shrink wrapped with PE film and stacked over the wooden pallets. The Cement Render/Plasters are also available in silos (21 m³), which can be refilled at site using the refilling tankers. While manufacturing there is no raw material waste occurs.

A4: Transport to Site

Cement Renders/Plasters that produced by M&P is transported to site by truck. The average distance from manufacturing facility to site is calculated as 100 km.

Transport Data (A4)	
Vehicle Types	Transport, freight, lorry 16-32 metric ton, euro5 {RoW} market for transport, freight, lorry 16-32 metric ton, EURO5 Cut-off, S
Data Type	Related transport data from Ecoivent 3.6

The background image shows an industrial facility, likely a cement or plaster plant. It features several tall, cylindrical silos with ladders and platforms. To the right, there are large green storage tanks with 'M&P' and 'PLASTER' written on them. In the foreground, there's a blue building and a white car parked. The entire image is overlaid with a semi-transparent green rectangle that serves as a backdrop for the text.

LCA RESULTS

Cement Render Plasters

Environmental Impacts for 1 kg Cement Render Plasters						
Impact category	Unit	A1	A2	A3	A1-A3	A4
GWP - Fossil	kg CO ₂ eq	2.84E-01	5.85E-03	2.37E-02	3.13E-01	1.67E-02
GWP - Biogenic	kg CO ₂ eq	3.66E-03	1.22E-06	-7.99E-02	-7.63E-02	3.49E-06
GWP - Luluc	kg CO ₂ eq	5.69E-05	1.72E-06	4.13E-05	1.00E-04	4.90E-06
GWP - Total	kg CO ₂ eq	2.87E-01	5.85E-03	-5.62E-02	2.37E-01	1.67E-02
ODP	kg CFC11 eq	1.21E-08	1.34E-09	2.04E-09	1.55E-08	3.82E-09
AP	mol H+ eq	7.26E-04	2.40E-05	8.59E-05	8.35E-04	6.87E-05
EP - Freshwater	kg P eq	2.23E-05	4.62E-07	4.75E-06	2.75E-05	1.32E-06
EP - Freshwater*	kg PO ₄ eq	6.8E-05	14.14E-07	14.54E-06	7.86E-05	4.04E-06
EP - Marine	kg N eq	1.88E-04	7.00E-06	2.37E-05	2.18E-04	2.00E-05
EP - Terrestrial	mol N eq	2.16E-03	7.69E-05	2.65E-04	2.51E-03	2.20E-04
POCP	kg NMVOC eq	5.63E-04	2.34E-05	7.70E-05	6.63E-04	6.69E-05
ADPE	kg Sb eq	1.06E-07	1.73E-08	4.40E-08	1.68E-07	4.93E-08
ADPF	MJ	1.23E+00	8.88E-02	3.78E-01	1.70E+00	2.54E-01
WDP	m ³ depriv.	2.04E-02	6.04E-04	7.69E-03	2.87E-02	1.73E-03
PM	disease inc.	5.87E-09	4.10E-10	2.27E-09	8.55E-09	1.17E-09
IR	kBq U-235 eq	5.23E-03	4.19E-04	1.27E-03	6.92E-03	1.20E-03
ETP - FW	CTUe	4.02E+00	6.35E-02	3.33E-01	4.41E+00	1.81E-01
HTTP - C	CTUh	4.06E-11	1.85E-12	1.37E-11	5.61E-11	5.29E-12
HTTP - NC	CTUh	2.10E-09	7.27E-11	2.49E-10	2.43E-09	2.08E-10
SQP	Pt	3.88E-01	5.96E-02	7.02E+00	7.46E+00	1.70E-01

Acronyms: GWP-total: Climate change, GWP-fossil: Climate change- fossil, GWP-biogenic: Climate change - biogenic, GWP-luluc: Climate change - land use and transformation, ODP: Ozone layer depletion, AP: Acidification terrestrial and freshwater, EP-freshwater: Eutrophication freshwater, EP-marine: Eutrophication marine, EP-terrestrial: Eutrophication terrestrial, POCP: Photochemical oxidation, ADPE: Abiotic depletion - elements, ADPF: Abiotic depletion - fossil resources, WDP: Water scarcity, PM: Respiratory inorganics - particulate matter, IR: Ionising radiation, ETP-FW: Ecotoxicity freshwater, HTP-c: Cancer human health effects, HTP-nc: Non-cancer human health effects, SQP: Land use related impacts, soil quality.

Legend: A1: Raw Material Supply, A2: Transport, A3: Manufacturing, A1-A3: Sum of A1, A2, and A3, A4: Transport to Site, A5: Installation, C1: De-Construction, C2: Waste Transport, C3: Waste Processing, C4: Disposal, D: Benefits and Loads Beyond the System Boundary.

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.

*EP-Freshwater: This indicator has been calculated as "kg P eq" as required in the characterization model. (EUTREND model, Struijs et al, 2009b, as implemented in ReCiPe; <http://eplca.jrc.ec.europa.eu/LCDN/developerEF.xhtml>)

Resource Use for 1 kg Cement Render Plasters						
Impact Category	Unit	A1	A2	A3	A1+A3	A4
PERE	MJ	7.33E-02	8.76E-04	1.09E+00	1.16E+00	2.50E-03
PERM	MJ	0	0	0	0	0
PERT	MJ	7.33E-02	8.76E-04	1.09E+00	1.16E+00	2.50E-03
PENRE	MJ	1.23E+00	8.88E-02	3.78E-01	1.70E+00	2.54E-01
PENRM	MJ	0	0	0	0	0
PENRT	MJ	1.23E+00	8.88E-02	3.78E-01	1.70E+00	2.54E-01
SM	kg	0	0	0	0	0
RSF	MJ	0	0	0	0	0
NRSF	MJ	0	0	0	0	0
FW	m ³	1.44E-03	1.50E-05	2.87E-04	1.74E-03	4.30E-05

Waste & Output Flows for 1 kg Cement Render Plasters						
Impact Category	Unit	A1	A2	A3	A1+A3	A4
HWD	kg	0	0	0	0	0
NHWD	kg	0	0	1.25E-03	1.25E-03	0
RWD	kg	0	0	0	0	0
CRU	kg	0	0	0	0	0
MFR	kg	0	0	1.25E-03	1.25E-03	0
MER	kg	0	0	0	0	0
EE (Electrical)	MJ	0	0	0	0	0
EE (Thermal)	MJ	0	0	0	0	0

Acronyms : PERE: Use of renewable primary energy excluding resources used as raw materials, PERM: Use of renewable primary energy resources used as raw materials, PERT: Total use of renewable primary energy, PENRE: Use of non-renewable primary energy excluding resources used as raw materials, PENRM: Use of non-renewable primary energy resources used as raw materials, PENRT: Total use of non-renewable primary energy, SM: Secondary material, RSF: Renewable secondary fuels, NRSF: Non-renewable secondary fuels, FW: Net use of fresh water, HWD: Hazardous waste disposed, NHWD: Non-hazardous waste disposed, RWD: Radioactive waste disposed, CRU: Components for reuse, MFR: Material for recycling, MER: Materials for energy recovery, EE (Electrical): Exported energy electrical, EE (Thermal): Exported energy, Thermal.

Result per functional declared unit		
Biogenic Carbon Content	Unit	A1-A3
Biogenic carbon content in product	kg C	0.013
Biogenic carbon content in packaging	kg C	0.29
Note: It was assumed 50% of the wood packaging material is biogenic carbon.		

References

/GPI/ General Programme Instructions of the International EPD® System. Version 3.0.

/EN ISO 9001/ Quality Management Systems - Requirements

/EN ISO 14001/ Environmental Management Systems - Requirements

/ISO 45001/ Occupational Health & Safety Management System - Requirements

/ISO 14020:2000/ Environmental Labels and Declarations — General principles

/EN 15804:2012+A2:2019/ Sustainability of construction works - Environmental Product Declarations — Core rules for the product category of construction products

/ISO 14025/ DIN EN ISO 14025:2009-11: Environmental labels and declarations - Type III environmental declarations — Principles and procedures

/ISO 14040/44/ DIN EN ISO 14040:2006-10, Environmental management - Life cycle assessment - Principles and framework (ISO14040:2006) and Requirements and guidelines (ISO 14044:2006)

/PCR for Construction Products and CPC 54 Construction Services/ Prepared by IVL Swedish Environmental Research Institute, Swedish Environmental Protection Agency, SP Trä, Swedish Wood Preservation Institute, Swedisol, SCDA, Svenskt Limträ AB, SSAB, The International EPD System, 2019:14 Version 1.1 DATE 2019-12-20

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/Ecoinvent / Ecoinvent Centre, www.ecoinvent.org

/SimaPro/ SimaPro LCA Software, Pré Consultants, the Netherlands, www.pre-sustainability.com

/Air emissions is taken from Greenhouse gas reporting: conversion factors 2020 / <https://www.gov.uk/>
Access Date: 19.03.2021

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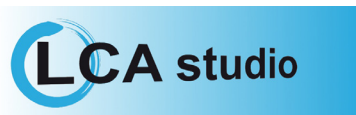


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