

ENVIRONMENTAL PRODUCT DECLARATION

In accordance with ISO 14025 and EN 15804:2012+A2:2019 for
Bonding Key Coats from Minotti

Programme:
Programme operator:
EPD registration number:
Publication date:
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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

“Minotti” is a leading producer of premium quality cement and gypsum based dry mix products with more than a decade of experience in the international dry mix industry. We offer premium high quality products, advanced know-how, timely technical assistance and unlimited customer service. Minotti is able to meet most challenging product requirements to provide effective solutions to the construction market and building industry. We achieve customer satisfaction through quality management, high technical expertise and quality services on a wide range of dry mix products. The advanced state-of-the-art Minotti automated plant ensures a continuous control over the production process assuring constant quality of the products offered. Minotti offers a wide range of machines for the mixing and application of the products providing customers savings in time & work force. The automated mixing machines assure continuous quality control in the application process.

Minotti provides the most modern silo system with pneumatic dry mix conveying and automatic application machines for the construction industry. The system offers ready to apply products at the “press of a button”. We offer the product delivery to the site in mobile silos or bags, a range of machines are available for the various application and usage of the products at site. The products are reachable to any distance in time with mobile silos and pneumatic conveying system at the “press of a button”. The system will provide the customers a clear edge in quality and productivity.



Product Information

Product applied as dash bond coat over the concrete surfaces to provide key for the application of plaster over it, the product ensures a strong bonding with the concrete surfaces.

Cementitious dash bond coat as per BS EN 13914-1, 13914-2 & ASTM C 926.

Product UN CPC code is 37410 (Plasters).

Bonding Key Coats

- > MINO 100 - Bonding coat for rendering on normal fair faced concrete surfaces.
- > MINO 120 - Bonding coat for rendering on densified concrete surfaces.
- > MINO 140 - Bonding coat for rendering on ultra smooth concrete surfaces.
- > MINO 150 - Bonding coat for rendering on impermeable/non absorbing surfaces (EPS/XPS etc.)



Bonding Key Coats 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 Bonding Key Coats cement based bonding compound for concrete substrates.

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 Minotti 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	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.

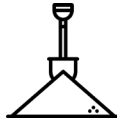
System Boundary



A1. Raw Material Supply



Portland cement



Crushed and
graded lime
stone aggregate



Additives



A2. Transport



Transport of raw
materials



A3. Manufacturing



Manufacturing



A4. Transport to Site



Transport of
product

System boundary — — —

System Description

A1: Raw Material Supply

Minotti uses three main raw materials; portland cement, crushed and graded limestone aggregate and additives. Each raw material consists 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

Minotti produces Bonding Key Coats from raw materials, and packages with paper bags shrink wrapped with PE film, and stacked out the wooden pallets. During manufacturing, there is no waste arising from raw materials.

A4: Transport to Site

Bonding Key Coats that produced by Minotti 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



LCA RESULTS

Bonding Key Coats

Environmental Impacts for 1 kg Bonding Key Coats						
Impact category	Unit	A1	A2	A3	A1-A3	A4
GWP - Fossil	kg CO ₂ eq	3.74E-01	5.85E-03	2.37E-02	4.04E-01	1.67E-02
GWP - Biogenic	kg CO ₂ eq	5.13E-03	1.22E-06	-7.99E-02	-7.48E-02	3.49E-06
GWP - Luluc	kg CO ₂ eq	7.93E-05	1.72E-06	4.13E-05	1.22E-04	4.90E-06
GWP - Total	kg CO ₂ eq	3.79E-01	5.85E-03	-5.62E-02	3.29E-01	1.67E-02
ODP	kg CFC11 eq	1.31E-08	1.34E-09	2.04E-09	1.65E-08	3.82E-09
AP	mol H+ eq	9.84E-04	2.40E-05	8.59E-05	1.09E-03	6.87E-05
EP - Freshwater	kg P eq	3.27E-05	4.62E-07	4.75E-06	3.79E-05	1.32E-06
EP - Freshwater*	kg PO ₄ eq	10E-05	14.14E-07	14.54E-06	11.6E-05	4.04E-06
EP - Marine	kg N eq	2.59E-04	7.00E-06	2.37E-05	2.90E-04	2.00E-05
EP - Terrestrial	mol N eq	2.98E-03	7.69E-05	2.65E-04	3.32E-03	2.20E-04
POCP	kg NMVOC eq	7.53E-04	2.34E-05	7.70E-05	8.54E-04	6.69E-05
ADPE	kg Sb eq	1.52E-07	1.73E-08	4.40E-08	2.13E-07	4.93E-08
ADPF	MJ	1.54E+00	8.88E-02	3.78E-01	2.01E+00	2.54E-01
WDP	m ³ depriv.	2.62E-02	6.04E-04	7.69E-03	3.45E-02	1.73E-03
PM	disease inc.	7.97E-09	4.10E-10	2.27E-09	1.06E-08	1.17E-09
IR	kBq U-235 eq	6.03E-03	4.19E-04	1.27E-03	7.72E-03	1.20E-03
ETP - FW	CTUe	4.48E+00	6.35E-02	3.33E-01	4.87E+00	1.81E-01
HTTP - C	CTUh	5.49E-11	1.85E-12	1.37E-11	7.04E-11	5.29E-12
HTTP - NC	CTUh	2.68E-09	7.27E-11	2.49E-10	3.00E-09	2.08E-10
SQP	Pt	4.04E-01	5.96E-02	7.02E+00	7.48E+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 Bonding Key Coats						
Impact Category	Unit	A1	A2	A3	A1+A3	A4
PERE	MJ	7.73E-02	8.76E-04	1.09E+00	1.16E+00	2.50E-03
PERM	MJ	0	0	0	0	0
PERT	MJ	7.73E-02	8.76E-04	1.09E+00	1.16E+00	2.50E-03
PENRE	MJ	1.54E+00	8.88E-02	3.78E-01	2.01E+00	2.54E-01
PENRM	MJ	0	0	0	0	0
PENRT	MJ	1.54E+00	8.88E-02	3.78E-01	2.01E+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	2.04E-03	1.50E-05	2.87E-04	2.35E-03	4.30E-05

Waste & Output Flows for 1 kg Bonding Key Coats						
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	0.02
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

/The International EPD® System/ The International EPD® System is a programme for type III environmental declarations, maintaining a system to verify and register EPD®s as well as keeping a library of EPD®s and PCRs in accordance with ISO 14025. www.environdec.com

/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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