



Environmental Product Declaration



In accordance with ISO 14025:2006 and EN 15804:2012+A2:2019/AC:2021 for:

REGULAR Plasterboard cat. No. 911101

WATER RESISTANT Plasterboard cat. No. 911102

FIRE RESISTANT Plasterboard cat. No. 911103

COMBINED Plasterboard cat. No. 911104

Programme:	The International EPD® System, www.environdec.com
Programme operator:	EPD International AB
EPD registration number:	S-P-009574
Publication date:	01-08-2023
Valid until:	01-08-2028

*An EPD should provide current information and may be updated if conditions change.
The stated validity is therefore subject to the continued registration and publication at
www.environdec.com*

About the Company

For over 85 years, Tambour has taken part in shaping the Israeli landscape, from building structures, tunnels, and bridges, to painting roads, constructing national infrastructure, and improving Israeli residents' quality of life.

Today, we look to the future, understand the magnitude of our impact on future generations, and work towards building more innovative, healthy, and ecological living environments.

We have already begun this process, from developing greener products, building factories that meet international standards and use green energy, to switching to use of hybrid/electric vehicles and reusable utensils.

We have chosen our path - to do as much as we can, and more, to build a better future.



General information

Programme information

Programme:	The International EPD [®] System
Address:	EPD International AB Box 210 60 SE-100 31 Stockholm Sweden
Website:	www.environdec.com
E-mail:	info@environdec.com

Accountabilities for PCR, LCA and independent, third-party verification

Product Category Rules (PCR)

CENstandard EN 15804 serves as the Core Product Category Rules (PCR)

Product Category Rules (PCR): Construction Products 2019: 14 Version 1.2.5,
UN CPC code 375 - Articles of concrete, cement and plaster

PCR review was conducted by :The Technical Committee of the International EPD[®] System.
See www.environdec.com/TC for a list of members.

Review chair: Claudia A. Peña, University of Concepción, Chile.

The review panel may be contacted via the Secretariat www.environdec.com/contact

Life Cycle Assessment (LCA)



LCA accountability: Eyal Bitkover & Eli Shmushko, Green Target

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Third-party verification

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

EPD verification by individual verifier

Third-party verifier: *Ruben Carnerero Acosta, IK Ingenieria*

Approved by: The International EPD[®] System

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

Yes No

The EPD owner has the sole ownership, liability, and responsibility for the EPD.

EPDs within the same product category but registered in different EPD programmes, or not compliant with EN 15804, may not be comparable. For two EPDs to be comparable, they must be based on the same PCR (including the same version number) or be based on fully-aligned PCRs or versions of PCRs; cover products with identical functions, technical performances and use (e.g. identical declared/functional units); have equivalent system boundaries and descriptions of data; apply equivalent data quality requirements, methods of data collection, and allocation methods; apply identical cut-off rules and impact assessment methods (including the same version of characterisation factors); have equivalent content declarations; and be valid at the time of comparison. For further information about comparability, see EN 15804 and ISO 14025.

Company information

Owner of the EPD: Tambour Ltd

Description of the organisation: Tambour is an Israeli market leader for paint and construction products - paint for home and industry construction products such as plasterboard, powders and adhesives and special paint and coatings for aviation, railway, shipbuilding and other sectors. plasterboards that are produced in Acre which is located in the north region of Israel.

Product-related or management system-related certifications: Tambour's plant in Acre is certified for ISO 9001, ISO14001 & ISO 45001. All of Tambour plasterboards are CE certified and received the Standard Institution of Israel's' Green label (certificate no. 62088).

Name and location of production site(s): Tambour's manufacturing site is located in Acre, Israel.

Product information

All boards declared in this EPD are fire resistant as per SI 755, CE certified and received the Standard Institution of Israel's' Green label (certificate no. 62088).

- **Product name: REGULAR (RE)**

Product identification: White plasterboard, 12.7mm

Product description: Paper coated board for interior use. Suitable for partitions, walls, ceilings, design elements and for lowering ceilings and cornices.

- **Product name: WATER RESISTANT (MR)**

Product identification: Green plasterboard, 12.7mm

Product description: Paper coated board for interior use in wet rooms – water resistant & moisture repellent. Suitable for partitions and cladding in wet rooms (bathrooms, toilets, kitchens) and for cladding partition walls facing wet spaces and ceilings.

- **Product name: FIRE RESISTANT (FR)**

Product identification: Pink plasterboard, 12.7mm

Product description: Paper coated board, fire retardant with improved fire resistance for interior use. Suitable for buildings requiring enhanced fire resistance, for application in fire-retardant separation partitions, design elements and curves, for lowering ceilings and cornices and for fire protection.

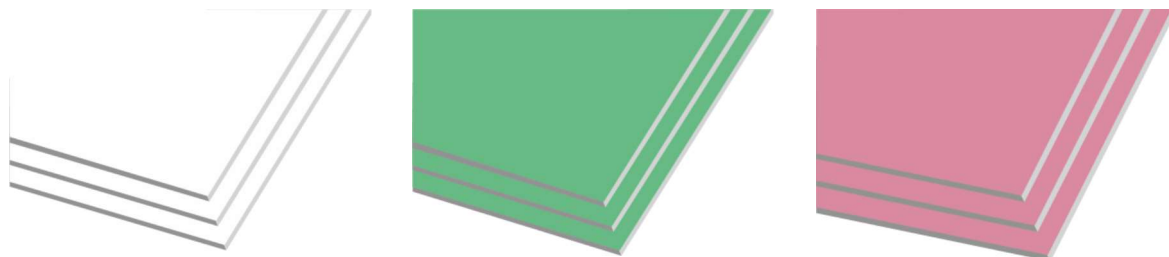
- **Product name: COMBINED (FM)**

Product identification: Green-Pink plasterboard, 12.7mm

Product description: Paper coated board for interior use in wet rooms – water resistant, moisture repellent & fire retardant. Suitable for application in fire-retardant separation partitions that also face wet spaces and ceilings (malls, escape-corridors).

UN CPC code: 3753 – Articles of plaster or of compositions based on plaster

Geographical scope: The study represents the manufacturing of plaster boards in Tambour's manufacturing factory in Acre, Israel.



Technical specifications

Parameter	Units	RE	MR	FR	FM
Thickness*	mm	12.7 (+0.5, -0.4)	12.7 (+0.5, -0.4)	12.7 (+0.5, -0.4)	12.7 (+0.5, -0.4)
Width	mm	1200 (+0.3, -0.3)	1200 (+0.3, -0.3)	1200 (+0.3, -0.3)	1200 (+0.3, -0.3)
Taper width	mm	30 – 80	30 – 80	30 – 80	30 – 80
Taper depth	mm	0.5 – 2.5	0.5 – 2.5	0.5 – 2.5	0.5 – 2.5
Flexure parallel to the board edges	N	476	476	476	476
Flexure perpendicular to the board edges	N	160	160	160	160
General absorptivity	%	/	5 >	/	5 >
Surface absorptivity	%	/	1.6 >	/	1.6 >
Nail head thrust strength	N	343	343	343	343
Weight	Kg	7.4	7.5	7.5	8.0

Tests performed according to Israeli Standard 1490 part 1 – Gypsum partitions and linings: Boards

*LCA was performed on 12.7mm thickness but boards are available in vary thicknesses:

RE is also available in 6.4mm, 9.5mm & 15.9 thickness

MR is also available in 15.9mm thickness

FR is also available in 15.9mm & 24mm thickness (DEFENDER+)

LCA information

Declared unit: 1 square meter of plasterboard with the technical properties mentioned in the table above (the study was performed on the most commonly used thickness for each type of plasterboard).

Reference Service Life: According to BBSR in a publication from 2017, the RSL of gypsum plasterboards is 50 years.

Data & Time representativeness: The specific data for the LCA study is based on 2021 production data from Tambour's manufacturing site in Acre. Since LCI data do not include Israel specific data, the electricity was modeled according to the national electricity production mix using data published by the Israeli parliament and the water grid was modelled according to the local water mix available.

Database(s) and LCA software used: Open LCA v.1.11.0 & Ecoinvent v.3.8.0

Description of system boundaries:

Cradle to gate with modules C1–C4 and module D (A1–A3 + C + D). Stages A4–A5 and Module B were excluded from the LCA study.

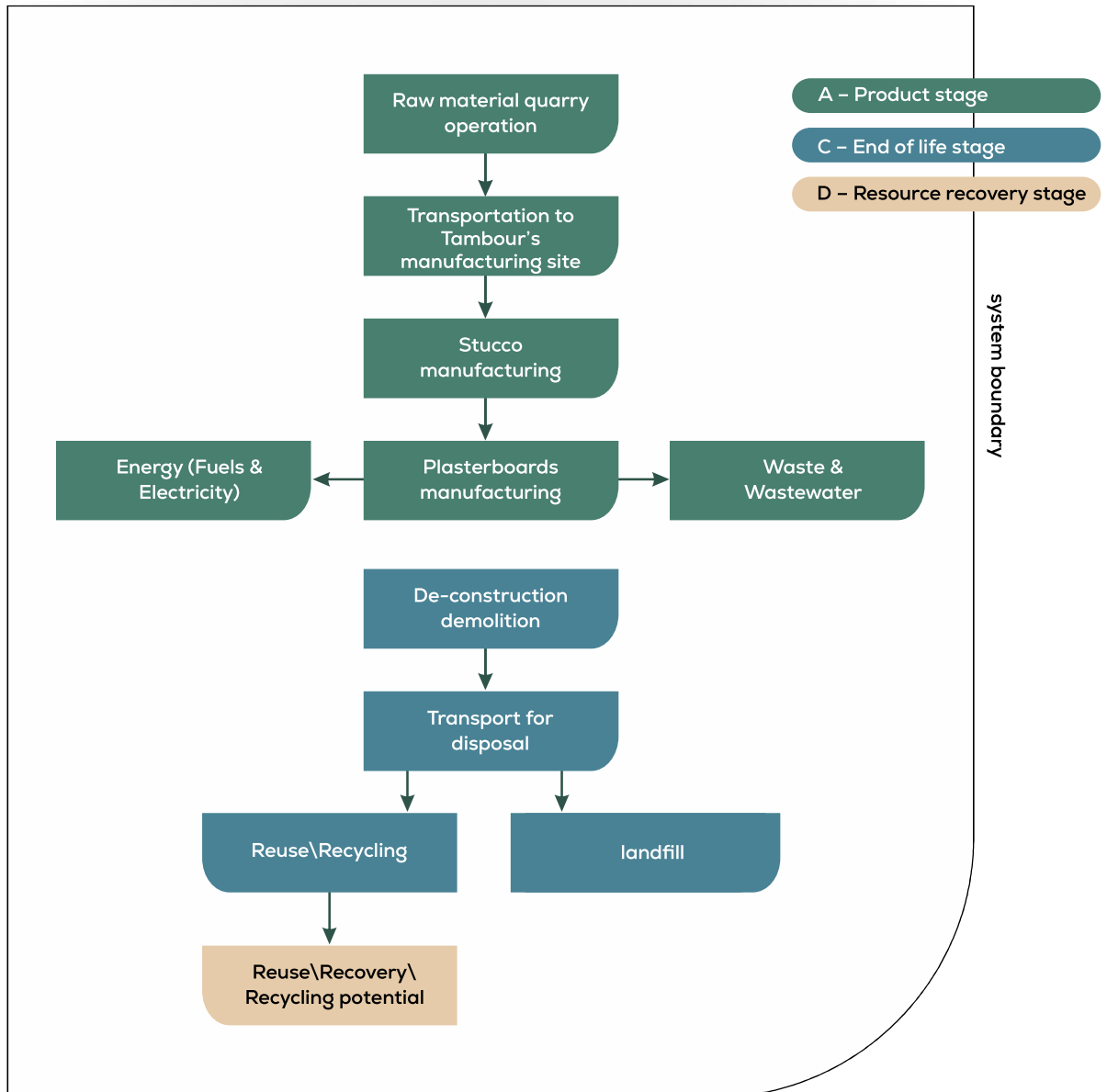
Cut-off rules & assumptions: All major inputs & outputs were considered in this study. Raw materials which had no available data were excluded from the model. These materials account for less than 1% of the products' total mass. The study does not include the manufacturing processes and maintenance of capital goods or spare parts as their lifespan is more than 3 years.

The environmental impacts of general organizational operations and employees activities (offices, travels etc.) were not included in this study as well, as they are relevant for Tambour's entire manufacturing site in Acre and not only for the plasterboards production line.

Additional data sources: Since Ecoinvent does not contain much data specific for Israel, Electricity and water flows were modelled according to data published on-line for both these grids.

Allocations: According to EN 15804:2012+A2:2019, allocations in this LCA were avoided where possible. Energy and waste data have been allocated based on physical criteria of mass as this data in the process level was not available.

System diagram:



Stages A4-A5 and Module B were excluded from the LCA study

Modules declared, geographical scope, share of specific data (in GWP-GHG results) and data variation (in GWP-GHG results):

Stage	Product			Construction process				Use					End of life			Resource recovery	
	Raw material supply	Transport	Manufacturing	Transport	Construction installation	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Reuse-Recovery-Recycling-potential
Module	A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Modules declared	X	X	X	ND	ND	ND	ND	ND	ND	ND	ND	ND	X	X	X	X	X
Geography	IL Glo	IL Glo	IL Glo	ND	ND	ND	ND	ND	ND	ND	ND	ND	IL	IL	IL	IL	IL
Specific data used		>90%		-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation - products		<10%		-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation -sites		0%		-	-	-	-	-	-	-	-	-	-	-	-	-	-

ND = Not Declared

Product stage (A1-A3):

Module A1 – Raw material supply

Tambour's plasterboards consist mainly of natural gypsum with the addition of additives (up to 7% of the board's mass). This module includes the gypsum quarry operations and additives manufacturing, including the cover liners (Back liner with 100% recycled content and face liner with 95% recycled content).

Module A2 – Transport

Natural gypsum is extracted from quarries at Cyprus and transported overseas to Israel port in Haifa. The module also includes the transport of additives and packaging materials to Tambour's manufacturing site.

Module A3 – Manufacturing

Natural gypsum is milled and calcinated to stucco. The stucco and other additives are mixed together with water and then spread on a continuous liner (face liner) and covered with another liner (back liner). The boards are then dried in a natural gas derived drier to the permitted residual moisture level. Drying is coming after the cutting of the boards to the desired lengths. The boards are piled-up to stacks, packed using LDPE packaging film and wooden "legs".

End of Life stage (C1-C4):

Module C1 - De-construction demolition

Demolition of plaster boards takes place with the demolition of the whole construction and can also be done using manpower alone. Thus, it is assumed that energy used for the demolition of plasterboards is negligible and the environmental impact of this module as well.

Module C2 - Transport

Estimated average distance from demolition site to inert landfill site in Israel is 50 km.

Module C3 - Waste processing

Since the waste is disposed to an inert waste sanitary landfill, there is no waste processing procedure and environmental impact results were set to zero.

Module C4 - Disposal

Plasterboards waste is usually not separatable from other construction waste and is not eligible for recycling. Thus, product disposal was modelled as 100% inert waste in a sanitary landfill.

End of life information

Processes	Weight, kg
kg collected separately	0
kg collected with mixed construction waste	7.35 – 7.89*
kg for re-use	0
kg for recycling	0
kg for energy recovery	0
kg product or material for final deposition	7.4 – 8.02*

*Not including water content

Content information

Product components	Weight, kg	Post-consumer material, weight-%	Biogenic material, weight-% and kg C/kg
Stucco	7 - 7.5	0	0
Glass fibre	1.00E-06 - 0.02	0	0
Additives	0.035-0.15	0	0
Face liner	0.198-0.2084	95%	0
Back liner	0.157-0.158	100%	0
TOTAL	7.4-8.1*	4 - 5%	0
Packaging materials	Weight, kg	Weight % (versus the product)	Weight biogenic carbon, kg C
LDPE	0.0067	< 1	0
Wood "legs"	0.04 - 0.08	< 1	0.02-0.04
TOTAL	0.05 - 0.09	< 1	/

*Not including water content

Biogenic carbon containing materials in the product are less than 5% of the products' mass, thus the declaration of biogenic carbon content in the product is omitted.

The plasterboards declared in this LCA study does not contain substances from the SVHC list in an amount that that exceeds 0.1% of the functional unit mass.

Results of the environmental performance indicators

For each indicator, declared here are the "worst-case product" results (which may be the results of one or several of the included products)

Mandatory impact category indicators according to EN 15804 (Including GWP-GHG¹)

Indicator	Unit	Results per declared unit					
		A1-A3	C1	C2	C3	C4	D
GWP fossil	kg CO ₂ eq.	2.16E+00	0.00E+00	6.81E-02	0.00E+00	4.22E-02	0.00E+00
GWP biogenic	kg CO ₂ eq.	-1.06E-01	0.00E+00	1.14E-05	0.00E+00	1.77E-05	0.00E+00
GWP luluc	kg CO ₂ eq.	1.11E-03	0.00E+00	2.91E-05	0.00E+00	3.90E-05	0.00E+00
GWP- total	kg CO ₂ eq.	2.05E+00	0.00E+00	6.81E-02	0.00E+00	4.23E-02	0.00E+00
ODP	kg CFC 11 eq.	3.68E-07	0.00E+00	1.47E-08	0.00E+00	1.71E-08	0.00E+00
AP	mol H ⁺ eq.	9.56E-03	0.00E+00	2.00E-04	0.00E+00	3.97E-04	0.00E+00
EP- freshwater	kg P eq.	2.75E-04	0.00E+00	5.19E-06	0.00E+00	3.90E-06	0.00E+00
EP marine	kg N eq.	2.43E-03	0.00E+00	4.10E-05	0.00E+00	1.38E-04	0.00E+00
EP terrestrial	mol N eq.	2.28E-02	0.00E+00	4.45E-04	0.00E+00	1.51E-03	0.00E+00
POCP	kg NMVOC eq.	6.10E-03	0.00E+00	1.63E-04	0.00E+00	4.29E-04	0.00E+00
ADP- minerals & metals*	kg Sb eq.	2.80E-04	0.00E+00	2.27E-07	0.00E+00	9.09E-08	0.00E+00
ADP- fossil*	MJ	3.29E+00	0.00E+00	1.17E-01	0.00E+00	8.83E-02	0.00E+00
WDP*	m ³ world eq. Deprived	6.89E-01	0.00E+00	5.00E-03	0.00E+00	5.43E-02	0.00E+00
GWP- GHG ¹	kg CO ₂ eq.	2.19E+00	0.00E+00	6.81E-02	0.00E+00	4.23E-02	0.00E+00
Acronyms	GWP-fossil = Global Warming Potential fossil fuels; GWP-biogenic = Global Warming Potential biogenic; GWP-luluc = Global Warming Potential land use and land use change; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential, Accumulated Exceedance; EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption						

* Disclaimer: The results of this environmental impact indicator shall be used with care as the uncertainties of these results are high or as there is limited experience with the indicator.

Resource use indicators

Indicator	Unit	Results per declared unit					
		A1-A3	C1	C2	C3	C4	D
PERE	MJ	6.81E-01	0.00E+00	8.35E-03	0.00E+00	6.30E-03	0.00E+00
PERM	MJ	3.42E+00	0.00E+00	3.15E-03	0.00E+00	2.98E-03	0.00E+00
PERT	MJ	4.11E+00	0.00E+00	1.09E-02	0.00E+00	9.27E-03	0.00E+00
PENRE	MJ	5.27E+00	0.00E+00	1.29E-01	0.00E+00	1.00E-01	0.00E+00
PENRM	MJ	7.44E+01	0.00E+00	8.99E-01	0.00E+00	1.09E+00	0.00E+00
PENRT	MJ	7.96E+01	0.00E+00	1.03E+00	0.00E+00	1.19E+00	0.00E+00
SM	kg	2.36E+01	0.00E+00	6.63E-04	0.00E+00	5.84E-04	0.00E+00
RSF	MJ	1.20E+00	0.00E+00	9.46E-05	0.00E+00	1.03E-04	0.00E+00
NRSF	MJ	2.54E-02	0.00E+00	1.84E-04	0.00E+00	1.62E-04	0.00E+00
FW	m ³	1.75E-02	0.00E+00	1.22E-04	0.00E+00	1.27E-03	0.00E+00
Acronyms	PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non-renewable primary energy excluding non-renewable primary energy 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 re-sources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water						

Waste indicators

Results per declared unit							
Indicator	Unit	A1-A3	C1	C2	C3	C4	D
Hazardous waste disposed	kg	1.22E+00	0.00E+00	2.68E-02	0.00E+00	1.95E-02	0.00E+00
Non hazardous waste disposed	kg	1.41E-01	0.00E+00	5.14E-02	0.00E+00	8.03E+00	0.00E+00
Radioactive waste disposed	kg	1.21E-03	0.00E+00	1.45E-05	0.00E+00	1.49E-05	0.00E+00

Output flow indicators

Results per declared unit							
Indicator	Unit	A1-A3	C1	C2	C3	C4	D
Components for re-use	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Material for recycling	kg	1.97E+00	0.00E+00	4.84E-04	0.00E+00	3.74E-04	0.00E+00
Materials for energy recovery	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Exported energy, electricity	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Exported energy, thermal	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

References

General Programme Instructions of the International EPD® System. Version 4.0.

PCR 2019:14. Construction Products. Version 1.2.5.

"Spatial Planning Report 2017", Germany Building and regional planning federal office
Central Product Classification (CPC), Version 2.1, Department of Economic and Social Affairs Statistics
Division, UN.

Plasterboards data sheets, Tambour

ISO14020:2000 Environmental labels and declarations – General principles

ISO14025:2006 Environmental labels and declarations – Type III environmental declarations –
Principles and procedures





ISO14040:2006 Environmental management – Life cycle assessment – Principles and framework

ISO14044:2006 Environmental management – Life cycle assessment – Requirements and guidelines

15804:2012+A2:2019/AC:2021 Sustainability of construction works - Environmental product
declarations - Core rules for the product category of construction products

Ecoinvent database V3.8

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