



GYPSUMBOARD CEILING SYSTEM

ENVIRONMENTAL PRODUCT DECLARATION

ISO 14025/ EN 15804

1. GENERAL INFORMATION

DECKON COMMERCIAL CEILING

Declaration Number :	Issue Date :	Valid to :
EPD-DCKN-20190604-GYP-01	22.01.2025	22.01.2030

Scope:

This declaration applies to all GYPSUMBOARD ceiling system production of DECKON factory. While preparing this declaration, it covers the EPD values used in Gypsumboard suspended ceiling systems which are accepted all over the world and the accuracy of these values has been evaluated by different PROGRAM HOLDERS. The purpose of this declaration can be used in green building certification programs such as LEED, BREEM and DGNB

The owner of the declaration shall be liable for the underlying information and evidence; the DECKON shall not be liable with respect to manufacturer information, life cycle assessment data and evidences.

Signed for and on behalf of the manufacturer
by Deckon Suspended Ceiling

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2. PRODUCT

2.1 PRODUCT DESCRIPTION/DEFINITION

Product description/ Deckon Gypsumboard ceiling system consist of an aerated gypsum core encasade in and firmly bonded to strong paper liners. The gypsum core contains various addlitives and comes with the option of either tapered edge or square edge finish on the long edges and all boards have short sawn straight edges.

2.2 APPLICATION

Deckon gypsumboard ceiling system is a plasterboard that is suitable for ceiling applicons where standard levels of fire, structural and acoustic performance are specified. It is suitable for direct decoration.

2.3 TECHNICAL DATA

Deckon Karolam conforms to EN 520:2004 + A1: 2009 Gypsum plasterboard - Definitions, requirements and test methods. Type A: Gypsum pasterboard: Plasterboard with a face to which suitable gypsum plasters or decoration may b applied.

En Classification	A
Nominal Density	The assumed density is 675 kg/m ³ (8.44kg/m ²) of 12.5mm Gyproc WallBoard.
Thermal Conductivity	0.19 W/mK
Shear Strength	NPD
Water Vapour Resistance	10μ
Class of Reaction to Fire Performance	A2
Flaming Droplets/Particles	d0
Smoke Production	s1

2.4 DELIVERY STATUS

The EPD refers

1. 7mm 600x600 Gypsumboard Ceiling
2. 8mm 600x600 Gypsumboard Ceiling
3. 9mm 600x600 Gypsumboard Ceiling
4. 9,5 mm 600x600 Gypsumboard Ceiling
5. 12,5mm 600x600 Gypsumboard Ceiling

2.5 BASE MATERIALS / ANCILLARY MATERIALS

Description of the main components and/or materials for 1 m² of product for the calculation on the EPD® :

Parameter	Part	Quantity (kg/FU)
Gypsum	95.3 %	8.04
Paper Liner	3.6 %	0.31
Additives	1.1%	0.09
Total	100 %	8.44

Deckon Gypsumboard contains 95.3% gypsum in a blend of natural gypsum, desulphurised gypsum (DSG) and scrap material.

During the life cycle of the product any hazardous substance listed in the “Candidate List of Substances of Very High Concern (SVHC) for authorization” has not been used in a percentage higher than 0.1% of the weight of the product.

2.6 MANUFACTURE

The plasterboard continues along the production line where it is finished, dried, and cut to size. Construction waste from A5 stage is recycled back into the manufacturing process wherever possible. Deckon Gypsum plants are managed through ISO9001 certified Quality Management Systems.

2.7 ENVIRONMENT AND HEALTH DURING MANUFACTURING

At Deckon, Health and Safety is a core value. The Company's aim is always to be injury-free. A target of zero accidents at work for employees, visitors and contractors is set by the business.

Deckon is managed to BS OHSAS 18001 Occupational Health and Safety Management Systems. To ensure that the Company's objectives are achieved, documented safety management systems are employed at each operational site and within the central functions. These include a systematic identification of hazards, assessment of the risks and the development of safe systems of work to eliminate or reduce any risks to an acceptable level. Audits and inspections are used to monitor standards of safety management, adherence to the law and Company procedures.

Deckon plants are managed through ISO 14001 certified Environmental Management Systems. Deckon believes that climate change is one of the major threats to this generation and future generations. The organisation is committed to being part of the solution and consider two important distinct areas: Firstly, to reduce carbon emissions which come from buildings, in particular as they are used. It is currently estimated that between 35-40% of total Turkey greenhouse gas emissions come from buildings; and secondly, in reducing direct and indirect emissions which come from the operational footprint and activities.

The building sector produces one third of solid waste each year, and consumes half of Europe's natural resources. Moving away from a culture of take-use-dispose is one of the biggest challenges construction faces, and one of the biggest opportunities. To embrace a circular economy in construction action is needed in a number of areas, in particular: Focussing on deconstruction - not demolition, encouraging selective sorting of waste streams, moving away from landfill - including government legislation to make landfilling waste the least attractive option, training and education of contractors and other construction professionals, and making much greater use of secondary resources.

Water/Ground: No contamination of water or soil occurs. All values determined inside and outside the production facilities are below the applicable national requirements for noise protection. /EN ISO 14001/ certificates and other manufacturer-specific documents on environmental and health protection can be requested from the manufacturer.

2.8 PRODUCT PROCESSING/INSTALLATION

General

It is important to observe appropriate health and safety legislation when working on site, i.e. personal protective clothing and equipment, etc. The following notes are intended as general guidance only. In practice, consideration must be given to design criteria requiring specific project solutions.

Handling

Manual off-loading of this product should be carried out with care to avoid unnecessary strain.

Cutting

This product may be cut using a plasterboard saw or by scoring with a sharp knife and snapping the board over a straight edge. Holes for switch or socket boxes should be cut out before the boards are fixed using a utility saw or sharp knife. When cutting boards, power and hand tools should be used with care and in accordance with the manufacturers' recommendations. Power tools should only be used by people who have been instructed and trained to use them safely. Appropriate personal protective equipment should be used.

Fixing

Fix boards with decorative side out to receive joint treatment or a skim plaster finish. Lightly butt boards together. Never force boards into position. Install fixings not closer than 13mm from cut edges and 10mm from bound edges. Position cut edges to internal angles whenever possible, removing paper burrs with fine sandpaper. Stagger horizontal and vertical board joints between layers by a minimum of 600mm. Locate boards to the centre line of framing where this supports board edges or ends

2.9 PACKAGING

Deckon is supplied on returnable 100% recyclable pallets. All pallets are Europallet certified.

2.10 CONDITION OF USE

When installed in accordance with deckon recommendations, Deckon ceiling maintains its mechanical and physical properties for its entire useful life. Direct contact with water should be avoided.

2.11 ENVIRONMENT AND HEALTH DURING USE

Deckolam is not classified as hazardous according to the Classification, Labelling and Packaging Regulations

2.12 REFERENCE SERVICE LIFE

Deckon plasterboard is expected to last the service life of a building (10 years).

2.13 EXTRAORDINARY EFFECTS

Fire

Plasterboard linings provide good fire protection owing to the unique behaviour of the non-combustible gypsum core when subjected to high temperatures, according to /EN 13501-1/. The class of flaming droplets is d0 and the class for smoke density is pre-defined as s1.

Name	Value
Building material class	A2
Smoke gas development	s1
Burning droplets	d0

Water

Deckon is unsuitable for use in areas subject to continuously damp or humid conditions and must not be used to isolate dampness. Plasterboards are not suitable for use in temperatures above 49°C, but can be subjected to freezing conditions without risk of damage.

Mechanical destruction

Deckon is intended for commercial applications and is a stable product with no significant adverse environmental effects. The products should be installed according to Deckon's installation guideline

2.14 RE-USE PHASE

The gypsumboard ceiling systems can be removed and reused without damaging the product.

2.15 DISPOSAL

Recycling of the product through Deckon's dedicated Plasterboard Recycling Service is strongly recommended. If a container of gypsum is sent to landfill, it must be deposited in a separate . The

European waste catalogue code is
17 08 02 -Gypsumboard.

3. LCA: CALCULATION RULES

3.1 DECLARED UNIT

	EPD TYPE DECLARED	Cradle to Grave
3.1	DECLARED UNIT	<p>The declared unit is 1 m² of</p> <ul style="list-style-type: none"> •7,0mm thick Deckolam, the assumed density 380kg/m³ (4,72kg/m²) of 7,0mm deckolam. •8,0mm thick Deckolam, the assumed density 435kg/m³ (5,39kg/m²) of 8,0mm deckolam. •9,0mm thick Deckolam, the assumed density 490kg/m³ (6,06kg/m²) of 9,0mm deckolam. •9,5mm thick Deckolam, the assumed density 517kg/m³ (6,40kg/m²) of 9,5mm deckolam. •12,5mm thick Deckolam, the assumed density 675kg/m³ (8,44kg m²) of 12,5mm deckolam.
3.2	SYSTEM BOUNDARIES	Cradle to Grave: stages A1-3, A4-A5, B1-7, C1-4 and Module D
3.3	ESTIMATES AND ASSUMPTIONS	<p>Primary data was gathered from the two production sites. The distance to a waste disposal site is assumed 32 km. The end of life and installation waste handling is taken from Environment Agency's draft report 'An investigation into the disposal and recovery of gypsum waste'.</p>

3.4	CUT-OFF CRITERIA	Life Cycle Inventory data for a minimum of 99% of Total inflows to the upstream core module shall be included.
3.5	BACKGROUND DATA	All primary product data was provided by Deckon with General information for Gypsumboard Ceiling.

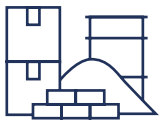
3.2 SYSTEM BOUNDARY

The Life Cycle Assessment considers the system boundaries “cradle to grave” and follows the modular construction system described by /EN 15804/. The LCA takes into account the following modules:

- A1: Raw material supply (Production of precursors, packaging)
- A2: Transport of precursors
- A3: Manufacturing (Energy usage, utilization of production residues)
- A4: Transport from the gate to the site
- A5: Assembly (Installation, recycling of packaging)
- B1: Use
- B4: Replacement
- B5: Refurbishment
- C1: De-construction demolition
- C2: Transport to waste-processing facility
- C3: Waste processing for reuse, recovery and/or recycling
- D: Potential for reuse, recovery and/or recycling as net flows and benefit

4. LIFE CYCLE STAGES

FLOW DIAGRAM OF THE LIFE CYCLE



Raw Materials



Recycling



End of Life



Manufacturing



Logistics



Installation



Building Lifetime

4.1 PRODUCT STAGE

Description of the stage: The product stage of plasterboard products is subdivided into three modules A1, A2 and A3 respectively “raw material supply”, “transport to manufacturer” and “manufacturing”. A1, raw material supply This includes the extraction and processing of all raw materials and energy which occur upstream from the manufacturing process.

A2, transport to the manufacturer The raw materials are transported to the manufacturing site. The modelling includes road, boat and/or train transportations of each raw material.

A3, manufacturing This module includes the manufacture of products and the manufacture of packaging. The production of packaging material is taken into account at this stage. The processing of any waste arising from this stage is also included.

The LCA calculation has been made taking into account the fact that DECKON purchase 100% renewable electricity.

4.2 CONSTRUCTION PROCESS STAGE, A4-A5

Description of the stage: The construction process is divided into two modules: A4, transport to the building site and A5, installation in the building.

A4, transport to the building site

This module includes transport from the production gate to the building site. Transport is calculated on the basis of a scenario with the parameters described in the following table. The distance quoted is a weighted average from production sites to the building site, calculated using post codes of our customers and quantity of product travelled

Parameter	Value (Expressed per functional/declared unit)
Fuel type and consumption of vehicle or vehicle type used for transport e.g. long distance truck, boat, etc.	44 tonne articulated large goods vehicle Diesel consumption 38 litres per 100 km travelled
Distance	Truck: 140 km
Capacity utilisation (Including empty returns)	100 % Capacity (97 % empty returns)
Bulk density of transported products	380 kg/m ³
Volume capacity utilisation factor	1

Parameter	Value (Expressed per functional/declared unit)
Fuel type and consumption of vehicle or vehicle type used for transport e.g. long distance truck, boat, etc.	44 tonne articulated large goods vehicle Diesel consumption 38 litres per 100 km travelled
Distance	Truck: 140 km
Capacity utilisation (Including empty returns)	100 % Capacity (97 % empty returns)
Bulk density of transported products	435 kg/m ³
Volume capacity utilisation factor	1

Parameter	Value (Expressed per functional/declared unit)
Fuel type and consumption of vehicle or vehicle type used for transport e.g. long distance truck, boat, etc.	44 tonne articulated large goods vehicle Diesel consumption 38 litres per 100 km travelled
Distance	Truck: 140 km
Capacity utilisation (Including empty returns)	100 % Capacity (97 % empty returns)
Bulk density of transported products	490 kg/m ³
Volume capacity utilisation factor	1

Parameter	Value (Expressed per functional/declared unit)
Fuel type and consumption of vehicle or vehicle type used for transport e.g. long distance truck, boat, etc.	44 tonne articulated large goods vehicle Diesel consumption 38 litres per 100 km travelled
Distance	Truck: 140 km
Capacity utilisation (Including empty returns)	100 % Capacity (97 % empty returns)
Bulk density of transported products	517 kg/m ³
Volume capacity utilisation factor	1

Parameter	Value (Expressed per functional/declared unit)
Fuel type and consumption of vehicle or vehicle type used for transport e.g. long distance truck, boat, etc.	44 tonne articulated large goods vehicle Diesel consumption 38 litres per 100 km travelled
Distance	Truck: 140 km
Capacity utilisation (Including empty returns)	100 % Capacity (97 % empty returns)
Bulk density of transported products	675 kg/m ³
Volume capacity utilisation factor	1

5. LCA RESULT

Description of the system boundary (X = Included in LCA). DECKON has been used as the impact model. Specific data has been supplied by the plant, and generic data comes from Generall and Deckon databases. All emissions to air, water, and soil, and all materials and energy used have been included. All figures refer to a declared unit of 1 m² installed plasterboard with a weight of 8.44 kg/m² and a density of 675 kg/m³ and with a specified function and an expected average service life of 50 years.

Product Stage			Construction Process Stage		Use Stage							End of Life Stage				Benefits and Loads Beyond the System Boundaries
Raw Material Supply	Transport	Manufacturing	Transport	Construction-Installation Process	Use	Maintenance	Repair	Replacement	Refurbishment	Operational Energy Use	Operational Water Use	De-construction Demolition	Transport	Waste Processing	Disposal	Reuse - Recovery
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X



EN 13501-1: 2010: Fire classification of construction products and building elements - Part 1: Classification using data from reaction to fire tests; German version EN 13501-1:2007+A1:2009

EN 13964: 2014: Suspended ceilings - Requirements and test methods;

EN 520:2004 + A1 Gypsum plasterboards - Definitions, requirements and test methods.

ISO 14025/ DIN EN /ISO 14025:2011-10/, Environmental labels

EN 15804/ /EN 15804:2012-04+A1 2013/, Sustainability of construction works – Environmental Product