



ENVIRONMENTAL PRODUCT DECLARATION

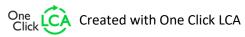
IN ACCORDANCE WITH EN 15804+A2 & ISO 14025

Raised Access Flooring Panel RMG600 Kingspan Data and Flooring



EPD HUB, HUB-0314

Publishing date 1st March 2023, last updated date 1st March 2023, valid until 1st March 2028







GENERAL INFORMATION

MANUFACTURER

Manufacturer	Kingspan Data and Flooring
Address	Burma Drive - Marfleet - Hull HU9 5SG - UK
Contact details	Debra Smith, debra.smith@kingspan.com
Website	www.kingspan.com/gb/en/business- groups/kingspan-data-and-flooring/

EPD STANDARDS, SCOPE AND VERIFICATION

Program operator	EPD Hub, hub@epdhub.com
Reference standard	and ISO 14025
PCR	EPD Hub Core PCR version 1.0, 1 Feb 2022
Sector	Construction product
Category of EPD	Third party verified EPD
Scope of the EPD	Cradle to gate with modules C1-C4, D
EPD author	Anastasia Sipari
EPD verification	Independent verification of this EPD and data, according to ISO 14025: ☐ Internal certification ☑ External verification
EPD verifier	E.A as an authorized verifier acting for EPD Hub Limited

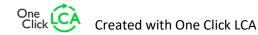
The manufacturer has the sole ownership, liability, and responsibility for the EPD. EPDs within the same product category but from different programs may not be comparable. EPDs of construction products may not be comparable if they do not comply with EN 15804 and if they are not compared in a building context.

PRODUCT

Product name	Raised Access Flooring Panel RMG600
Place of production	Hull, United Kingdom
Period for data	Calendar year 2021
Averaging in EPD	No averaging

ENVIRONMENTAL DATA SUMMARY

ENVINORMENTAL DATA SOMMANT											
Declared unit	One raised access floor panel RMG600										
Declared unit mass	10.5 kg										
GWP-fossil, A1-A3 (kgCO2e)	13.94										
GWP-total, A1-A3 (kgCO2e)	1.62										
Secondary material, inputs (%)	52.7										
Secondary material, outputs (%)	70.4										
Total energy use, A1-A3 (kWh)	55.5										
Total water use, A1-A3 (m3e)	0.568										







PRODUCT AND MANUFACTURER

ABOUT THE MANUFACTURER

Kingspan Data and Flooring is the world's largest supplier of raised access flooring. A track record of more than 50 years' experience in manufacturing, design, installation, and standard setting has won Kingspan Access Floors its market leading position. We are part of the €6 Billion turnover Kingspan Group, a global leader in high-performance insulation, building fabric and solar-integrated building envelopes: delivering high-efficiency, low-cost and low-carbon building solutions across a broad range of market sectors. Fast changing business needs call for workspaces that can adapt quickly to new demands. Raised access floors have proven themselves as the most cost-effective way of creating flexible space, allowing safe, convenient and flexible distribution of services below the solid raised floor platform. Whether the requirement is for a standard raised floor, air-plenum floor or for factory-bonded finishes Kingspan Data and Flooring's product range is designed to meet every likely specification, including PSA MOB, the European Standard EN 12825.

The range encompasses galvanised woodcore, static control and natural finish systems. All deliver speedy installation, high performance and easy accessibility to the service void. At Kingspan Data and Flooring we like to set the pace and set the standard, with ISO 14001:2015 accreditation for our Environmental Management Systems, for example. We are serious about the importance of sustainable timber sourcing and the positive impact reducing deforestation can have on eco-systems. To demonstrate just how much we care about good forest management, we were the first raised access flooring company in the world to obtain the Forest Stewardship Council's (FSC) Chain of Custody certification in 2007, which we have maintained to this day. We are ISO 9001:2015 accredited for both manufacturing and installation operations. Our highly automated factory in Hull is ISO50001:2018 and ISO14001:2015 accredited and can produce more than 200,000 floor panels per week — all designed and manufactured

to the latest industry standards and backed up by our industry-leading inhouse product testing and technical support facilities.

We have installed countless problem-free floors in offices, dealing rooms, call centres, computer rooms, retail and gallery spaces throughout the globe — all witness to the durability and functionality of Kingspan Access Floors' installations. A track record featuring many landmark and time critical projects reflects client confidence in Kingspan Data and Flooring's ability to deliver, all of which is supported by our system warranty.

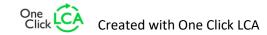
PRODUCT DESCRIPTION

This EPD represents a raised access floor panel RM600 produced at Kingspan Data and Flooring facility in United Kingdom, Hull.

The RMG600 panel is based on a 600x600mm-square module made of a high-performance, high-density 30mm particle chipboard core in a galvanised steel envelope. Particle board includes 62% of post consumer recycled material and 38% of pre-consumer recycled material. The galvanised steel shell comprises of a top sheet that is wrapped around and laminated to the core, then mechanically-stitched to the bottom steel sheet for greater strength and to provide full electrical continuity and static dispersion of the system where required. The steel shell thickness is a 0.5mm wrap around top sheet and a 0.4mm bottom sheet. Recycled content of steel is 23%.

The RMG600 is designed for general office use and this unique wraparound construction makes panel removal and replacement easy whilst also improving panel edge strength. The RMG600 panel is engineered to fine dimensional tolerances for modular control and independently-tested in accordance with the PSAMOB PF2 PS/SPU Specification to Medium Grade. No reference service life is specified in this cradle-to-gate EPD. RMG600 panels carry a 25-year warranty

Further information can be found at www.kingspan.com/gb/en/business-groups/kingspan-data-and-flooring/







PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass- %	Material origin
Metals	24	Global
Minerals	-	-
Fossil materials	<1	EU
Bio-based materials	76	EU

BIOGENIC CARBON CONTENT

Product's biogenic carbon content at the factory gate

Biogenic carbon content in product, kg C	3.36
Biogenic carbon content in packaging, kg C	0.02

FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	One raised access floor panel RMG600
Mass per declared unit	10.5 kg

SUBSTANCES, REACH - VERY HIGH CONCERN

The product does not contain any REACH SVHC substances in amounts greater than 0,1 % (1000 ppm).







PRODUCT LIFE-CYCLE

SYSTEM BOUNDARY

This EPD covers the life-cycle modules listed in the following table.

Product Assembly stage stage							U	lse stag	ge	En	d of I	ife sta	Beyond the system boundaries						
A1	A2	А3	A4	A5	B1	B2	В3	B4	B5	В6	В7	C1	C2	С3	C4		D		
x	x	x	MND	MND	MND MND MND MND MND MND x x x x							x							
Raw materials	Transport	Manufacturing	Transport	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	Deconstr./demol.	Transport	Waste processing	Disposal	Reuse	Recovery	Recycling	

Modules not declared = MND. Modules not relevant = MNR.

MANUFACTURING AND PACKAGING (A1-A3)

The environmental impacts considered for the product stage cover the manufacturing of raw materials used in the production as well as packaging materials and other ancillary materials. Also, fuels used by machines, and handling of waste formed in the production processes at the manufacturing facilities are included in this stage. The study also considers the material losses occurring during the manufacturing processes as well as losses during electricity transmission.

The product is made of particle board encapsulated in a galvanised steel sheet. The materials are transported to Kingspan Data and Flooring production facility in Hull (UK), where the main manufacturing processes include trimming of particle board and steel sheet, encapsulation of the board in the steel sheet and finally, finishing. The manufacturing process requires electricity and fuels for the different equipment as well as heating. Certain ancillary materials are also included. The study considers the losses of raw materials occurring during the manufacturing process. The finished product is packaged in polypropylene straps to hold the panels before

being sent to the installation site on a wooden pallet. Pedestals for the panels are excluded from the study as there has been a separate EPD completed for these products.

Manufacture is covered by the sites ISO 9001:2015 certified quality management system, its ISO 14001:2015 certified environmental management system and ISO 50001:2018 certified energy management system.

Metal waste and chipboard waste generated during the manufacturing stage is segregated and recycled. The recycled chipboard can also be used for energy recovery in an onsite biomass to generate heat for the factory. Panels are transported to the construction site on wooden pallets, that can be reused. Polyester strapping is used to retain panels in place; typical use is approximately 5g of strapping per panel.

TRANSPORT AND INSTALLATION (A4-A5)

Transportation impacts occurred from final products delivery to construction site (A4) cover fuel direct exhaust emissions, environmental impacts of fuel production, as well as related infrastructure emissions.

Modules A4 and A5 are not covered by the scope of the study.

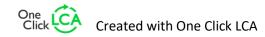
PRODUCT USE AND MAINTENANCE (B1-B7)

Modules B1-B7 are not covered by the scope of the study.

Air, soil, and water impacts during the use phase have not been studied. Air, soil, and water impacts during the use phase have not been studied.

PRODUCT END OF LIFE (C1-C4, D)

Energy consumption is not considered for the process of panel deconstruction from the building, as the process is manual. It is assumed that 70% of the product is collected separately and transported to the waste treatment centre and 30% is delivered to landfill with mixed waste. This assumption is based on "EU construction and demolition waste protocol

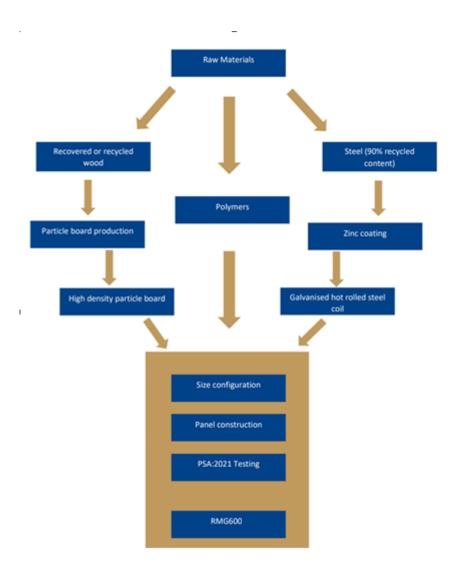


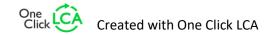




the set a goal for construction waste recycling to be 70% by 2020. It should be noted that the product is more than 99% recyclable, so if it is collected separately, no streams will end up in landfill. Transportation distance to treatment is assumed as 200 km and to the landfill 50 km the transportation method is assumed to be lorry (C2). Steel is recycled and particle board is incinerated with energy recovery in module C3. Module C3 covers also burdens of packaging waste handling. Loads of landfilled product (30%) are reported in module C4. The benefits and loads of product and packaging material recycling are included in Module D

MANUFACTURING PROCESS









LIFE-CYCLE ASSESSMENT

CUT-OFF CRITERIA

The study does not exclude any modules or processes which are stated mandatory in the reference standard and the applied PCR. The study does not exclude any hazardous materials or substances. The study includes all major raw material and energy consumption. All inputs and outputs of the unit processes, for which data is available for, are included in the calculation. There is no neglected unit process more than 1% of total mass or energy flows. The module specific total neglected input and output flows also do not exceed 5% of energy usage or mass.

ALLOCATION, ESTIMATES AND ASSUMPTIONS

Allocation is required if some material, energy, and waste data cannot be measured separately for the product under investigation. All allocations are done as per the reference standards and the applied PCR. In this study, allocation has been done in the following ways:

Data type	Allocation
Raw materials	No allocation
Packaging materials	Not applicable
Ancillary materials	Allocated by mass or volume
Manufacturing energy and waste	Allocated by mass or volume

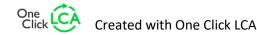
AVERAGES AND VARIABILITY

Type of average	No averaging
Averaging method	Not applicable
Variation in GWP-fossil for A1-A3	0 %

This EPD is product and factory specific and does not contain average calculations.

LCA SOFTWARE AND BIBLIOGRAPHY

This EPD has been created using One Click LCA EPD Generator. The LCA and EPD have been prepared according to the reference standards and ISO 14040/14044. Ecoinvent and One Click LCA databases were used as sources of environmental data. Biogenic carbon calculation of the product is following EN 16449:2014 Wood and wood-based products.







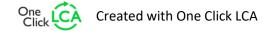
ENVIRONMENTAL IMPACT DATA

CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, PEF

Impact category	Unit	A1	A2	А3	A1-A3	A4	A5	B1	B2	В3	B4	B5	В6	В7	C1	C2	С3	C4	D
GWP – total ¹⁾	kg CO₂e	5.84E-1	9.76E-1	7.59E-2	1.62E0	MND	0E0	2.66E-1	8.76E0	3.73E0	-3.3E0								
GWP – fossil	kg CO₂e	1.29E1	9.75E-1	9.1E-2	1.39E1	MND	0E0	2.66E-1	1.26E-1	2.99E-2	-3.31E0								
GWP – biogenic	kg CO₂e	-1.23E1	9.74E-4	-1.52E-2	-1.23E1	MND	0E0	1.43E-4	8.63E0	3.70E0	8.58E-3								
GWP – LULUC	kg CO₂e	1.91E-2	4.86E-4	9.71E-5	1.97E-2	MND	0E0	9.6E-5	6.61E-5	1.47E-5	-1.69E-3								
Ozone depletion pot.	kg CFC-11e	1.25E-6	2.08E-7	1.39E-8	1.47E-6	MND	0E0	6.05E-8	1.29E-8	9.49E-9	-1.3E-7								
Acidification potential	mol H⁺e	6E-1	7.35E-3	4.98E-4	6.08E-1	MND	0E0	7.63E-4	1.45E-3	2.58E-4	-1.81E-2								
EP-freshwater ²⁾	kg Pe	8.73E-4	1.15E-5	4.59E-6	8.89E-4	MND	0E0	2.26E-6	4.1E-6	5.99E-7	-1.9E-4								
EP-marine	kg Ne	3.16E-2	1.8E-3	1.55E-4	3.36E-2	MND	0E0	1.52E-4	5.54E-4	1.57E-4	-3.14E-3								
EP-terrestrial	mol Ne	2.51E0	2.01E-2	1.62E-3	2.53E0	MND	0E0	1.69E-3	6E-3	9.58E-4	-3.59E-2								
POCP ("smog") ³⁾	kg NMVOCe	6.23E-2	5.82E-3	4.91E-4	6.86E-2	MND	0E0	6.48E-4	1.51E-3	3.33E-4	-1.57E-2								
ADP-minerals & metals ⁴⁾	kg Sbe	8.32E-2	2.21E-5	2.28E-6	8.33E-2	MND	0E0	7.33E-6	3.49E-6	3.1E-7	-4.9E-5								
ADP-fossil resources	MJ	1.77E2	1.44E1	1.52E0	1.93E2	MND	0E0	4.02E0	1.33E0	7.12E-1	-3.01E1								
Water use ⁵⁾	m³e depr.	9.01E0	5.71E-2	4.22E-2	9.11E0	MND	0E0	1.32E-2	-5.47E-2	3.18E-2	-1.32E0								

ADDITIONAL (OPTIONAL) ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, PEF

Impact category	Unit	A1	A2	А3	A1-A3	A4	A5	B1	B2	В3	B4	B5	B6	B7	C1	C2	C3	C4	D
Particulate matter	Incidence	4.48E-6	5.89E-8	1.41E-8	4.55E-6	MND	0E0	1.69E-8	1.64E-8	4.91E-9	-2.5E-7								
Ionizing radiation ⁶⁾	kBq U235e	6.83E-1	6.47E-2	3.38E-3	7.51E-1	MND	0E0	1.76E-2	4.2E-3	2.81E-3	-7.62E-2								
Ecotoxicity (freshwater)	CTUe	8.22E2	1.13E1	2.75E0	8.36E2	MND	0E0	3.12E0	3.84E0	6.61E-1	-1.66E2								
Human toxicity. cancer	CTUh	7.77E-8	4.26E-10	2.2E-10	7.84E-8	MND	0E0	8.98E-11	2.92E-10	1.82E-11	-1.5E-8								
Human tox. non-cancer	CTUh	1.08E-6	1.22E-8	2.9E-9	1.1E-6	MND	0E0	3.41E-9	1.54E-8	7.04E-10	2.96E-7								
SQP ⁷⁾	-	4.28E1	1.03E1	2.83E-1	5.33E1	MND	0E0	3.41E0	3.46E-1	2.31E0	-7.13E0								







USE OF NATURAL RESOURCES

Impact category	Unit	A1	A2	А3	A1-A3	A4	A5	B1	B2	В3	B4	B5	В6	В7	C1	C2	С3	C4	D
Renew. PER as energy ⁸⁾	MJ	1.7E1	3.07E-1	3.84E0	2.11E1	MND	0E0	5.75E-2	1.11E-1	1.15E-2	-4.67E0								
Renew. PER as material	MJ	1.71E1	0E0	5.88E-1	1.77E1	MND	0E0	0E0	1.26E1	-3.84E1	0E0								
Total use of renew. PER	MJ	3.41E1	3.07E-1	4.43E0	3.89E1	MND	0E0	5.75E-2	1.27E1	-3.84E1	-4.67E0								
Non-re. PER as energy	MJ	1.77E2	1.44E1	1.28E0	1.93E2	MND	0E0	4.02E0	1.33E0	7.12E-1	-3.01E1								
Non-re. PER as material	MJ	0E0	0E0	2.37E-1	2.37E-1	MND	0E0	0E0	-2.3E-1	0E0	0E0								
Total use of non-re. PER	MJ	1.77E2	1.44E1	1.52E0	1.93E2	MND	0E0	4.02E0	1.1E0	7.12E-1	-3.01E1								
Secondary materials	kg	5.54E0	0E0	1.02E-5	5.54E0	MND	0E0	0E0	0E0	0E0	1.02E0								
Renew. secondary fuels	MJ	0E0	0E0	0E0	0E0	MND	0E0	0E0	0E0	0E0	0E0								
Non-ren. secondary fuels	MJ	0E0	0E0	0E0	0E0	MND	0E0	0E0	0E0	0E0	0E0								
Use of net fresh water	m³	4.7E-1	2.63E-3	1.4E-1	0.612	MND	0E0	6.94E-4	1.69E-3	7.95E-4	-2E-2								

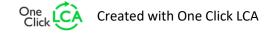
⁸⁾ PER = Primary energy resources.

END OF LIFE – WASTE

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	В3	B4	B5	В6	В7	C1	C2	С3	C4	D
Hazardous waste	kg	2.76E0	2.04E-2	9.82E-3	2.79E0	MND	0E0	4.14E-3	0E0	1.19E-3	-1.09E0								
Non-hazardous waste	kg	6.08E1	1.03E0	1.12E-1	6.2E1	MND	0E0	2.85E-1	0E0	3.15E0	-9.74E0								
Radioactive waste	kg	5.28E-4	9.73E-5	3.98E-6	6.29E-4	MND	0E0	2.75E-5	0E0	4.32E-6	-4.92E-5								

END OF LIFE – OUTPUT FLOWS

Impact category	Unit	A1	A2	А3	A1-A3	A4	A5	B1	B2	В3	B4	B5	В6	B7	C1	C2	С3	C4	D
Components for re-use	kg	0E0	0E0	0E0	0E0	MND	0E0	0E0	0E0	0E0	0E0								
Materials for recycling	kg	0E0	0E0	9.99E-2	9.99E-2	MND	0E0	0E0	1.75E0	0E0	0E0								
Materials for energy rec	kg	0E0	0E0	0E0	0E0	MND	0E0	0E0	5.64E0	0E0	0E0								
Exported energy	MJ	0E0	0E0	0E0	0E0	MND	0E0	0E0	9.19E0	0E0	0E0								

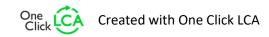






ENVIRONMENTAL IMPACTS – EN 15804+A1, CML / ISO 21930

Impact category	Unit	A1	A2	А3	A1-A3	A4	A5	B1	B2	В3	B4	B5	В6	В7	C1	C2	C3	C4	D
Global Warming Pot.	kg CO₂e	1.25E1	9.66E-1	8.91E-2	1.36E1	MND	0E0	2.64E-1	1.24E-1	1.4E-1	-3.17E0								
Ozone depletion Pot.	kg CFC-11e	1.26E-6	1.67E-7	9.46E-9	1.44E-6	MND	0E0	4.81E-8	1.09E-8	7.56E-9	-1.18E-7								
Acidification	kg SO₂e	2.39E-1	5.62E-3	3.7E-4	2.45E-1	MND	0E0	5.36E-4	9.71E-4	1.55E-4	-1.51E-2								
Eutrophication	kg PO ₄ ³e	5.42E-2	9.39E-4	1.83E-4	5.54E-2	MND	0E0	1.11E-4	8.61E-4	6.25E-3	-8.27E-3								
POCP ("smog")	kg C ₂ H ₄ e	5.07E-3	2.03E-4	2.38E-5	5.3E-3	MND	0E0	3.21E-5	2.9E-5	4.11E-5	-1.93E-3								
ADP-elements	kg Sbe	8.32E-2	2.21E-5	2.28E-6	8.33E-2	MND	0E0	7.33E-6	3.49E-6	3.1E-7	-4.9E-5								
ADP-fossil	MJ	1.77E2	1.44E1	1.52E0	1.93E2	MND	0E0	4.02E0	1.33E0	7.12E-1	-3.01E1								







VERIFICATION STATEMENT

VERIFICATION PROCESS FOR THIS EPD

This EPD has been verified in accordance with ISO 14025 by an independent, third-party verifier by reviewing results, documents and compliancy with reference standard, ISO 14025 and ISO 14040/14044, following the process and checklists of the program operator for:

- This Environmental Product Declaration
- The Life-Cycle Assessment used in this EPD
- The digital background data for this EPD

Why does verification transparency matter? Read more online This EPD has been generated by One Click LCA EPD generator, which has been verified and approved by the EPD Hub.

THIRD-PARTY VERIFICATION STATEMENT

I hereby confirm that, following detailed examination, I have not established any relevant deviations by the studied Environmental Product Declaration (EPD), its LCA and project report, in terms of the data collected and used in the LCA calculations, the way the LCA-based calculations have been carried out, the presentation of environmental data in the EPD, and other additional environmental information, as present with respect to the procedural and methodological requirements in ISO 14025:2010 and reference standard.

I confirm that the company-specific data has been examined as regards plausibility and consistency; the declaration owner is responsible for its factual integrity and legal compliance.

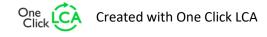
I confirm that I have sufficient knowledge and experience of construction products, this specific product category, the construction industry, relevant standards, and the geographical area of the EPD to carry out this verification.

I confirm my independence in my role as verifier; I have not been involved in the execution of the LCA or in the development of the declaration and have no conflicts of interest regarding this verification.

Elma Avdyli as an authorized verifier acting for EPD Hub Limited 01.03.2023











ANNEX 1. SUMMARY OF PRODUCT PROPERTIES

PRODUCT RAW MATERIAL MAIN COMPOSITION

RAW MATERIAL CATEGORY	AMOUNT, MASS- %
Metals	24
Minerals	-
Fossil materials	<1
Bio-based materials	76

PRODUCT RAW MATERIAL COMPOSITION

PRODUCT AND PACKAGING MATERIAL	WEIGHT KG	POST- CONSUMER %	RENEWABLE %
Particle Board	8	62	100
Galvanised Steel	2,5	23	-
Adhesive	<0,1		-
TOTAL product weight	10,5		
Wooden pallet packaging	0,037	-	100
Plastic strapping	0,05	100	-
TOTAL packaging weight	0,087		

PHYSICAL PROPERTIES OF THE PRODUCT

STEEL THICKNESS	DIMENSIONS	NOMINAL	MASS
0.5mm top 0.4 mm bottom layers	600mm x 600mm x 31mm	720 kg/m3	10,5 kg

