





ENVIRONMENTAL PRODUCT DECLARATION

in accordance with ISO 14025 and EN 15804

FDEB4 Access Floor Panels

Kingspan Access Floors Limited



<p>Declaration number: S-P-02811</p> <p>Issued on 2021-03-29 Valid until 2026-03-28</p> <p>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</p>	<p> EPD® Programme: The International EPD® System Programme operator: EPD International AB</p> <p> EPD EN 15804 VERIFIED</p>
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The environmental impacts of this product have been assessed from cradle to gate with Modules C1-C4 & D.
This EPD has been verified by an independent third party. The EPD owner has the sole ownership, liability, and responsibility for the EPD.

INTRODUCTION

This EPD provides environmental performance indicators for Kingspan Access Floors' FDEB4 panels. This is a cradle-to-gate with modules C1-C4 & D EPD in accordance with the requirements of EN 15804.

The EPD is based on a life cycle assessment (LCA) study which used production data for 2019 from Kingspan Access Floors' manufacturing facility in Hull.

The EPD presents details of the LCA, a description of the product life cycle it covers, values for the environmental indicators specified by EN 15804 and a brief explanation of those results.

The declared unit is one FDEB4 Access Floor Panel (600mm x 600mm).

FDEB4 ACCESS FLOOR PANELS

EPD programme:	The International EPD® System
EPD programme operator:	EPD International AB - Box 21060 - SE-10031 Stockholm - Sweden www.environdec.com - info@environdec.com
EPD owner:	Kingspan Access Floors Limited Burma Drive - Marfleet - Hull HU9 5SG - UK www.kingspanaccessfloors.co.uk
Product name:	FDEB4 Access Floor Panel
UN CPC code:	31431
Declared unit:	1 x FDEB4 Access Floor Panel (600mm x 600mm)
System boundaries:	Cradle to gate with Modules C1-C4 & D
Declaration No:	S-P-02811
Date of publication:	2021-03-29
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EPD geographical scope:	Global
EPD based on Product Category Rules:	The CEN standard EN 15804:2012 + A2:2019 serves as the core PCR The International EPD® System's PCR 2019:14 Construction products, Version 1.11, 2021-02-05
PCR review conducted by:	The Technical Committee of the International EPD® System Chair: Claudia Peña; contact via info@environdec.com
Third party verification:	Independent verification of this EPD and data, according to ISO 14025/2006: <input type="checkbox"/> internal certification <input checked="" type="checkbox"/> external verification
Third party verifier:	Ugo Pretato - Recognized Individual Verifier
Accredited or approved by:	The International EPD® System
LCA conducted by:	EuGeos Limited - UK +44 (0)1625 434423 www.eugeos.co.uk
LCA software:	openLCA
Background data from:	ecoinvent v3.6

EPDs within the same product category but from different programmes may not be comparable.

EPDs of construction products may not be comparable if they do not comply with EN 15804. For further information about comparability, see EN 15804 and ISO 14025.

COMPANY PROFILE

Kingspan Access Floors 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 €2 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 Access Floors' 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 Access Floors 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 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 in-house 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 Access Floors' ability to deliver, all of which is supported by our system warranty.

CONTACT

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PRODUCT INFORMATION

FDEB4 ACCESS FLOOR PANEL

The FDEB4 panel is based on a 600mm-square module made of a high-performance high-density 30-mm particle chipboard core; both its top and bottom surface are laminated with galvanised-steel sheets. A resilient vinyl surface finish is laminated to the top surface before being trimmed to fit flush with the panel sides. The FDEB4 panel is encapsulated by a full-depth edge ABS band which provides protection to the edge of the surface finish.

The FDEB4 panel is engineered to fine dimensional tolerances for modular control. Electrical continuity and static dispersion are provided where required.

The FDEB4 is a Class4 panel, under BS EN12825 specification.

FDEB4 Access Floor Panel



This product illustration shows the main elements of the panel (particle board with top & bottom galvanised steel sheets plus vinyl finish) and supporting pedestals¹

MANUFACTURING

FDEB4 panels are made at Kingspan Access Floors' Hull factory in the UK. The process involves cutting and/or trimming of particleboard and galvanised steel sheet, encapsulation of the board in the steel sheet, and finishing by application of a vinyl top surface and protective edgeband.

Manufacture is covered by both the site's ISO 9001:2015-certified quality management system and its ISO 14001-certified environmental management system.

Metal waste and chipboard waste generated during the manufacturing stage is segregated and recycled, either through the original supplier or through a third party.

PACKAGING

Panels are transported to the construction site on wooden pallets. Polyester strapping is used to retain panels in place; typical use is approximately 5g of strapping per panel.

Cardboard boxes and wooden pallets can be reused or recycled from the construction site.

¹ Pedestals are excluded from these LCA and EPD; they are subject of a separate EPD (S-P-02817)

PRODUCT USE AND MAINTENANCE

At the point of installation, an adhesive is applied to the sub-floor to retain the pedestals. Standard power tools are used for installation. Kingspan Access Floors operates a product recycling scheme. Spare panels, pedestals and part-panels arising during installation can be returned to Kingspan Access Floors for re-use and/or recycling, as can damaged panels that are replaced during maintenance.

Under normal use, the access floor requires little if any maintenance once the installation is complete but this will vary with the type and volume of traffic across the floor. Any adjustment, modification and/or repair should be carried out as quickly as possible and *only by a recognised specialist company*.

Vacuuming is the most appropriate cleaning method and should be done regularly to avoid build up of dust and dirt; if occasional additional cleaning is required, only a damp mop and neutral detergent should be used and only in the smallest possible quantities.

Care should be taken to avoid overloading and excessive impact loads to the raised access floor.

END-OF-LIFE

When removed at the end of its life, over 99% of the components of an access flooring system can be recycled. To achieve this encapsulating steel should be separated from chipboard; metal and chipboard can then be recycled or recovered as separate streams. In this EPD, a mix of disposal and recycling is applied as a conservative assumption concerning current practice.

As wastes removed from a building, steel sheets attract European Waste Catalogue (EWC) code 17-04-05, chipboard EWC code 17-02-01.

Disposal of materials and components must be carried out in a safe and proper manner with due consideration for the prevailing environmental, health & safety regulations and disposal procedures.

REFERENCE SERVICE LIFE

No reference service life is specified in this cradle-to-gate EPD. Kingspan Access Floors' FDEB4 panels carry a system warranty

FURTHER PRODUCT INFORMATION

Detailed product information and datasheets can be found on our website www.kingspanaccessfloors.co.uk or by contacting info@kingspanaccessfloors.co.uk

CONTENT DECLARATION

The material composition of the FDEB4 Access Floor Panel is shown below:

Product component (material / chemical input)	Weight (kg)	% of inputs per declared unit
Chipboard	7.1	63
Steel, Zn-coated	2.4	21
PVC	1.2	11
Polymers	<0.2	2
Packaging	Weight (kg)	% weight vs product per declared unit
Wood	0.4	4

Adhesives used in FDEB4 panels contain no volatile organic compounds (VOCs). No substances included in the Candidate List of Substances of Very High Concern for authorisation under the REACH Regulations are present in FDEB4 panels, either above the threshold for registration with the European Chemicals Agency or above 0.1% (wt/wt).

TECHNICAL DATA

The FDEB4 Access Floor Panel is BS EN 12825-compliant. Its technical characteristics are summarised below.

Name	Value	Unit
Panel weight (per unit)	10-11	kg
Ultimate Load (EN 12825)	9	kN
Working Load (EN 12825)	3	kN
Deflection	< 2.5	mm
Break load statics (PSA MOB)	N/A	kN
Point load statics (PSA MOB)	N/A	kN
Deflection	N/A	mm
Fire protection (EN 13501/DIN 4102) - reaction to fire	Bfl-S1	-
Fire protection (EN 13501/DIN 4102) - fire resistance	REI30r	-
Fire class: BS476-6 & BS476-7	Class 0	
Thermal conductivity (EN 1264-2)	3.71	W/(mK)
Cooling capacity (EN 1264-5)	..	W/m ²
Air throughput	..	m ³ /h

RESIDUAL RISKS AND EMERGENCIES

There are no residual risks associated with the normal day to day usage of the raised access flooring system. Care must be taken that the floor is not overloaded and any heavy items do not exceed the loadings indicated on the relevant data sheet.

LCA INFORMATION

This section of the EPD records key features of the LCA on which it is based.

LCA SCOPE

This EPD covers the production stage and end-of-life stages (modules A1-A3, C1-C4 and D; see below). Raised access floors are passive in use, therefore the use stage is omitted. As permitted by EN 15804 modules A1-A3 are declared in aggregated form.

PRODUCT STAGE			CONSTRUCTION PROCESS STAGE		USE STAGE							END OF LIFE STAGE				Benefits & loads beyond the system boundaries
Raw material supply	Transport	Manufacturing	Transport to the site	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste disposal	Disposal	Reuse- recovery- recycling- potential
A 1	A 2	A 3	A 4	A 5	B1	B2	B3	B4	B5	B 6	B 7	C 1	C 2	C 3	C 4	D
DECLARED MODULES																
<small>X: included in LCA; ND: module not declared; NR: module not relevant</small>																
X	X	X	ND	ND	ND	ND	ND	ND	ND	ND	ND	X	X	X	X	X
GEOGRAPHY																
Global	UK	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SPECIFIC DATA USED																
> 90%	ND	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	-

DECLARED UNIT

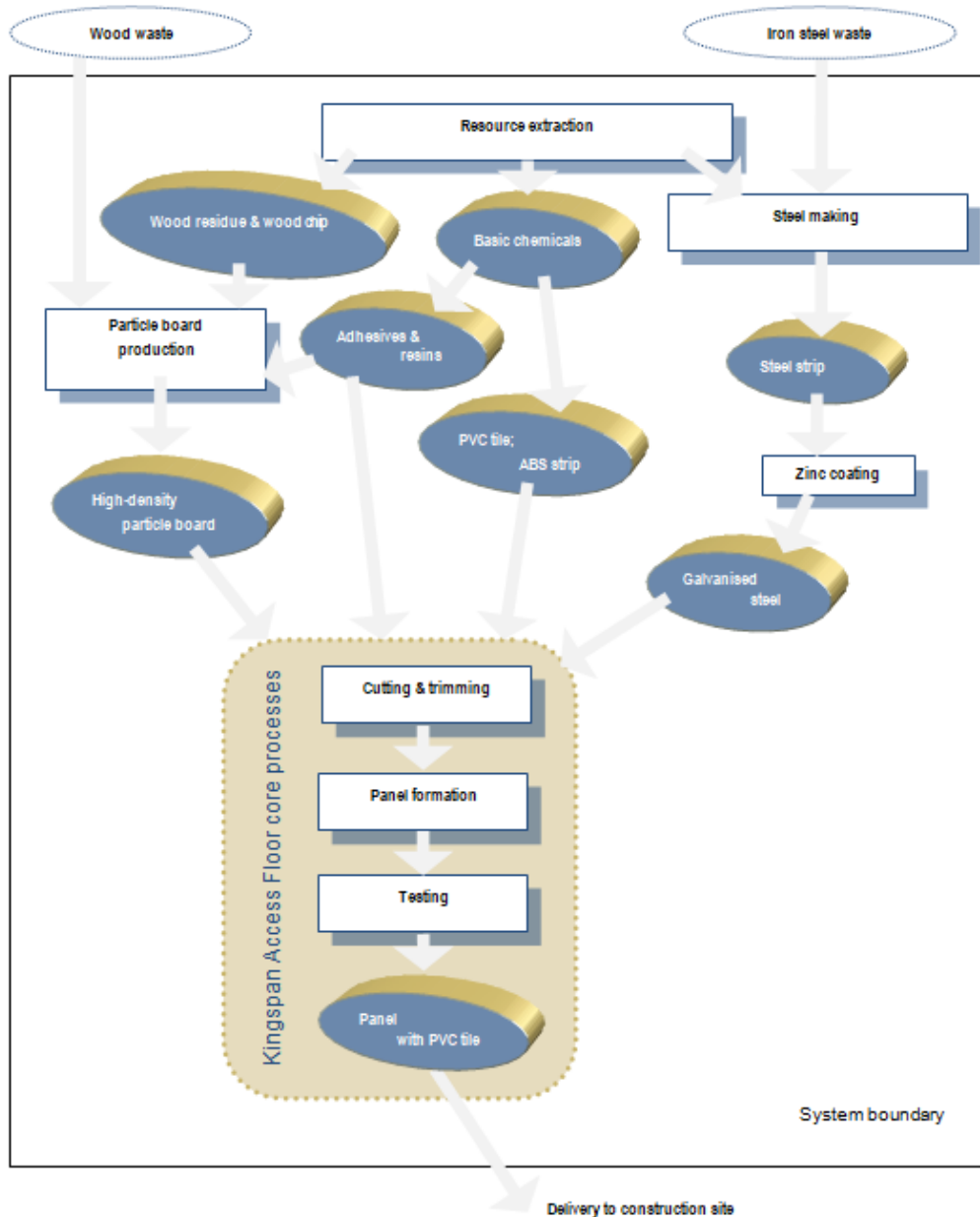
The declared unit is one FDEB4 Access Floor Panel (600mm x 600mm); the total mass of the declared unit is 11.3 kg, including packaging.

SYSTEM BOUNDARIES

The system boundary of the EPD is defined using the modular approach set out in EN 15804. As well as the core processes, the system therefore includes production of all raw materials and components from basic resources; transport of those materials at all stages up to Kingspan Access Floors' manufacturing facility; the production of fuels and energy carriers and their delivery to manufacturing sites; the treatment of all wastes.

The upstream processing of recycled material inputs that have passed the end-of-waste state is outside the system boundary; capital equipment is also excluded.

The Product Stage (A1 - A3) of the panel life cycle covered by this EPD is illustrated below.



CUT-OFF CRITERIA

The collected data covered all raw materials, consumables and packaging materials; associated transport to the manufacturing site; process energy and water use; direct production wastes; emissions to air and water. According to EN 15804 and the PCR, flows can be omitted (cut-off) from a core process in the LCA up to a maximum of 1% of the total mass of material inputs or 1% of the total energy content of fuels and energy carriers.

One fuel, accounting for <0.25% of all energy inputs, was omitted from the LCA underpinning this EPD; minor constituents of some panels, such as adhesive and ABS, are omitted from the end-of-life modeling (Module C).

DATA SOURCES AND DATA QUALITY

Data collected for the core processes (panel production) cover a period of 1 year (Jan 01 to Dec 31, 2019). The producer-specific data used in LCA calculations are therefore based on 1 year averaged data and have been updated within the last 5 years. These data were checked to ensure that sufficient materials and water are included within the inputs to account for all products, wastes and emissions.

BACKGROUND DATA

Background (generic) data were taken from the ecoinvent database (v3.6); this fulfils the EN 15804 requirement that generic data used in the LCA have been updated within the last 10 years. Data quality has been reviewed for processes that contribute significantly to the overall LCA. Processes representing the zinc coating of steel were adjusted to ensure that the proportions of steel and zinc are representative of the product. Other data were judged fit for purpose.

ALLOCATION

The overall panel production process is subdivided as far as possible, so that flows dedicated to particular products are fully assigned to those products. Panel numbers, which are the basis for production measurement at Kingspan Access Floors are also used as the basis for allocation of raw materials common to several panels and as the basis for allocation of utilities metered at the whole-site level.

In the background data, the ecoinvent default allocation is applied to all processes except those in which secondary materials are used, where the "cut-off" allocation is applied. This ensures that secondary materials are free of upstream burdens that arise prior to their reaching the "end of waste" state, in accordance with Section 6.3.4.2 of EN 15804.

ASSUMPTIONS AND ESTIMATES

Inputs to and outputs from the system are accounted for over a 100-year time period, except for biogenic carbon. Long-term emissions are therefore omitted from the impact assessment part of the LCA, except for biogenic carbon releases from waste disposal to which no time cut-off is applied.

The "*primary energy used as material*" indicators (PERM; PENRM) are calculated using - as characterisation factors - published values for constituent materials which can yield energy on combustion, where available, and from published calorific values where PEM values are not available.

In this EPD of FDEB4 Access Floor Panels, the following values are used:

- particle board 6320MJ/m³ renewable: 1100MJ/m³ non-renewable;
- wood in packaging: 14MJ/kg renewable;
- pvc: 26.9MJ/kg non-renewable.

"*Primary energy as fuel*" indicators (PENRE, PERE) are calculated as the total primary energy demand minus primary energy used as material.

Modules C1-C4 are modeled using scenarios. In Module C1, It is assumed that there are no material or energy inputs, and that 10% of panels removed from the building are diverted to reclamation for re-use.

In Module C3, 5% of all panels are assumed treated rather than directly disposed, with treatment comprising shredding to separate steel from chipboard. The energy input to this process is based on actual data from Kingspan Access Floors' Hull facility. In the model, 50% of this treatment is assumed to occur at Kingspan's Hull facility.

The waste disposal scenario is 100% landfill for panels not separated in Module C1 or treated in Module C3.

Parameters applied for the transport of materials in these modules are shown in the table below.

Parameter	Quantity and unit (per declared unit)
Fuel type and consumption of heavy goods vehicle used for road freight	0.1l/km, diesel
Distance	50 km road (disposal, recycling); 200km road (treatment)
Capacity utilisation (including empty returns)	36%
Bulk density of transported products	as product density kg/m ³
Volume capacity utilisation factor	1

ENVIRONMENTAL PERFORMANCE

ENVIRONMENTAL PARAMETERS

This EPD contains environmental information about FDEB4 Access Floor Panels in the form of quantitative indicator values for a number of parameters, which encompass calculated environmental impact potentials, resource and energy use, and waste generation. These parameters are listed below along with the abbreviations used for them in the tables of indicator values that follow.

Potential Environmental Impacts	Abbreviation	Unit
Global warming potential - fossil fuels	GWP-fossil	kg CO ₂ -eq
Global warming potential - biogenic	GWP-biogenic	kg CO ₂ -eq
Global warming potential - land use and land use change	GWP-luluc	kg CO ₂ -eq
Global warming potential - total	GWP-total	kg CO ₂ -eq
Global warming potential - biogenic excluded ¹	GWP-GHG	kg CO ₂ -eq
Acidification potential of land and water	AP	mol H ⁺ eq
Eutrophication potential - freshwater	EP-freshwater	kg P eq kg PO ₄ ³⁻ -eq
Eutrophication potential - marine	EP-marine	kg N eq
Eutrophication potential - terrestrial	EP-terrestrial	mol N eq
Formation potential of tropospheric ozone	POFP	kg NMVOC
Depletion potential of the stratospheric ozone layer	ODP	kg CFC11-eq
Abiotic depletion potential for non-fossil resources ²	ADPMM	kg Sb-eq
Abiotic depletion potential for fossil resources ²	ADPFF	MJ
Water (user) deprivation potential, deprivation-weighted water consumption ²	WDP	m ³
Resource Use		Unit
Renewable primary energy as energy carrier	PERE	MJ
Renewable primary energy resources as material utilization	PERM	MJ
Total use of renewable primary energy resources	PERT	MJ
Non-renewable primary energy as energy carrier	PENRE	MJ
Non-renewable primary energy as material utilization	PENRM	MJ
Total use of non-renewable primary energy resources	PENRT	MJ
Use of secondary material	SM	kg
Use of renewable secondary fuels	RSF	MJ
Use of non-renewable secondary fuels	NRSF	MJ
Use of net fresh water	FW	m ³
Waste		Unit
Hazardous waste disposed	HWD	kg
Non-hazardous waste disposed	NHWD	kg
Radioactive waste disposed	TRWD	kg
Output Flows		Unit
Components for re-use	CFR	kg
Materials for recycling	MFR	kg
Materials for energy recovery	MER	kg
Exported energy, electricity	EEE	MJ
Exported energy, thermal	EET	MJ

1 - GWP-GHG includes all greenhouse gases included in GWP-total but excludes biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product. This indicator is closely comparable to the GWP indicator originally defined in EN15804:2012+A1:2013

2 - 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

ENVIRONMENTAL INDICATOR RESULTS

Environmental indicator results for the declared modules are shown in the following tables for the declared unit of one FDEB4 Access Floor Panel (600mm x 600mm); modules A1 - A3 are shown on an aggregated basis.

RESULTS PER DECLARED UNIT		A1 - A3	C1	C2	C3	C4	D
ENVIRONMENTAL IMPACTS							
GWP-fossil	kg CO ₂ -eq	1.97E+01	0.00E+00	1.24E-01	7.12E-02	3.01E-01	0.00E+00
GWP-biogenic	kg CO ₂ -eq	-6.24E+00	0.00E+00	0.00E+00	1.71E-03	1.25E+01	0.00E+00
GWP-luluc	kg CO ₂ -eq	2.25E-02	0.00E+00	5.40E-05	9.42E-05	6.44E-05	0.00E+00
GWP-total	kg CO ₂ -eq	1.35E+01	0.00E+00	1.24E-01	7.30E-02	1.28E+01	0.00E+00
GWP-GHG	kg CO ₂ -eq	1.98E+01	0.00E+00	1.24E-01	7.27E-02	1.19E+01	0.00E+00
AP	mol H ⁺ eq	9.29E-02	0.00E+00	3.00E-04	3.00E-04	6.00E-04	0.00E+00
EP-freshwater	kg P eq	9.90E-04	0.00E+00	1.20E-06	3.68E-06	2.41E-06	0.00E+00
EP-freshwater	kg PO ₄ ³⁻ -eq	3.03E-03	0.00E+00	3.68E-06	1.13E-05	7.39E-06	0.00E+00
EP-marine	kg N eq	1.72E-02	0.00E+00	3.88E-05	5.92E-05	1.19E-03	0.00E+00
EP-terrestrial	mol N eq	1.98E-01	0.00E+00	4.30E-04	9.60E-04	1.48E-03	0.00E+00
POFP	kg NMVOC	7.46E-02	0.00E+00	2.10E-04	1.70E-04	3.75E-03	0.00E+00
ODP	kg CFC11-eq	3.43E-06	0.00E+00	2.77E-08	7.50E-09	3.69E-08	0.00E+00
ADPMM	kg Sb-eq	1.19E-02	0.00E+00	4.44E-06	3.60E-07	1.26E-06	0.00E+00
ADPFF	MJ	3.39E+02	0.00E+00	1.84E+00	1.20E+00	2.82E+00	0.00E+00
WDP	m ³	6.24E+02	0.00E+00	2.21E+00	1.01E+00	1.52E+00	0.00E+00
RESOURCE USE							
PERE	MJ	5.74E+01	0.00E+00	3.15E-02	1.02E+00	4.94E-02	0.00E+00
PERM	MJ	7.41E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	MJ	1.31E+02	0.00E+00	3.15E-02	1.02E+00	4.94E-02	0.00E+00
PENRE	MJ	3.12E+02	0.00E+00	1.89E+00	1.87E+00	2.89E+00	0.00E+00
PENRM	MJ	5.27E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	MJ	3.65E+02	0.00E+00	1.89E+00	1.87E+00	2.89E+00	0.00E+00
SM	kg	1.03E+00	0.00E+00	9.10E-04	1.45E-03	1.09E-03	0.00E+00
RSF	MJ	9.94E-01	0.00E+00	1.13E-03	7.27E-02	1.12E-03	0.00E+00
NRSF	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	m ³	2.31E-01	0.00E+00	1.60E-04	3.30E-04	2.66E-03	0.00E+00
WASTES							
HWD	kg	3.40E+00	0.00E+00	2.18E-03	3.64E-03	4.89E-03	0.00E+00
NHWD	kg	4.49E+01	0.00E+00	1.22E-01	9.94E-02	1.23E+01	0.00E+00
TRWD	kg	8.10E-04	0.00E+00	1.27E-05	1.41E-05	1.70E-05	0.00E+00
OUTPUT FLOWS							
CFR	kg	0.00E+00	1.34E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	kg	9.98E-01	0.00E+00	7.40E-04	2.20E-04	1.00E-03	0.00E+00
MER	kg	1.04E-02	0.00E+00	1.26E-05	7.10E-04	1.19E-05	0.00E+00
EEE	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.81E+00	0.00E+00
EET	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.81E+00	0.00E+00

INTERPRETATION

Raw material production makes the most significant contribution to all indicator categories. The contributions from the core processes are relatively small: <5% of the total for every indicator, reflecting Kingspan's use of renewable electricity and heat at its manufacturing facility.

For the ADPMM category, zinc coating makes a very strong contribution to the overall indicator values. This derives from the extraction of zinc and metals that occur with it naturally.

For GWP-total, steel production is more significant than the zinc-coating process. For biogenic GWP, negative values in A1-A3 reflect uptake of CO₂ in wood; positive values in module C4 reflect return of this carbon to air, and are highly uncertain. Some biogenic CO₂ emissions from wood combustion in modules A1-A3 are not fully balanced by CO₂ uptake from air in data for upstream processes, in part as a result of allocations applied in background data.

The core processes use very small quantities of fresh water: <1litre net use per declared unit. The remainder of the FW indicator derives from upstream processes represented by generic data in the LCA.

Module D quantifies "the potential benefits of avoided future use of primary materials and fuels while taking into account the loads and processes associated with recycling and recovery processes beyond the system boundary"; indicators reported in Module D quantify the potential benefits of recycling the material in any future product, not necessarily an access floor panel.

The benefits reported in Module D are calculated for net flows of secondary materials across the system boundary (materials to be recycled leaving the system minus recycled materials used in manufacture and other modules declared in the EPD). In cases where the calculation yields no benefits from recycling in any category, zero values are recorded for Module D, to avoid conveying the misleading message that recycling the product is environmentally harmful.

ADDITIONAL ENVIRONMENTAL INFORMATION

ENVIRONMENTAL IMPACTS (EN 15804+A1:2013)

For information, indicator values calculated using the methods prescribed in the earlier version of EN 15804 (EN 15804+A1:2013), are provided in the table below for the declared unit of one FDEB4 Access Floor Panel (600mm x 600mm); modules A1 - A3 are shown on an aggregated basis.

The significantly lower value of the GWP indicator for Module C4 here arises from the large difference between the characterisation factors applied for biogenic methane in EN 15804+A1 (25kgCO₂e/kgCH₄) and in EN 15804+A2 (36.8 kgCO₂e/kgCH₄).

Environmental impacts EN 15804+A1:2013	Unit	A1 - A3	C1	C2	C3	C4	D
GWP	kg CO ₂ -eq	1.90E+01	0.00E+00	1.23E-01	7.11E-02	6.54E+00	0.00E+00
ODP	kg CFC11-eq	4.29E-06	0.00E+00	2.21E-08	8.31E-09	2.94E-08	0.00E+00
AP	kg SO ₂ -eq	1.22E-01	0.00E+00	2.60E-04	2.20E-04	7.20E-04	0.00E+00
EP	kg PO ₄ ³⁻ -eq	1.02E-02	0.00E+00	2.51E-05	4.08E-05	5.40E-04	0.00E+00
POCP	kg ethene-eq	7.40E-03	0.00E+00	1.68E-05	1.00E-05	1.95E-03	0.00E+00
ADPE	kg Sb-eq	1.19E-02	0.00E+00	4.44E-06	3.60E-07	1.26E-06	0.00E+00
ADPF	MJ	3.39E+02	0.00E+00	1.84E+00	1.20E+00	2.82E+00	0.00E+00

Global warming potential (GWP) - Depletion potential of the stratospheric ozone layer (ODP) - Acidification potential of land and water (AP) - Eutrophication potential (EP) - Formation potential of tropospheric ozone photochemical oxidants (POCP) - Abiotic depletion potential for non-fossil resources (ADPE) - Abiotic depletion potential for fossil resources (ADPF)

BIOGENIC CARBON

Carbon dioxide (CO₂) is absorbed from the atmosphere by trees, so any wood-based product contains some carbon from this source. The biogenic carbon in the wood contained in the FDEB4 Access Floor Panel is shown below, for the declared unit of one panel (600mm x 600mm).

Biogenic carbon content per declared unit	Unit	Quantity
Biogenic carbon content in product	kg C	3.52E+00
Biogenic carbon content in packaging	kg C	2.08E-01

Note: 1 kg biogenic carbon is equivalent to 44/12 kg CO₂

Kingspan Access Floors has had FSC certification since 2007; the chipboard used in FDEB4 panels is FSC® certified.

REFERENCES

ecoinvent database (v3.6) - www.ecoinvent.ch

EN 12825:2001 - Raised access floors.

EN 13501-2018 - Fire classification of construction products and building elements. Classification using test data from reaction to fire test.

EN 13501-2:2016 – Fire classification of construction products and building elements. Classification using test data from resistance to fire test.

BS476 Pt 6 1989 + A1 : 2009 – Fire propagation, Part 7 1997 Classification of surface spread of flame

EN 15804:2012 + A1:2013 and EN 15804:2012 + A2:2019 - Sustainability of construction works - Environmental Product Declarations - Core rules for the product category of construction products.

General Program Instructions, V3.01, 2019-09-18 - The International EPD® System - EPD International AB.

ISO 9001:2015 - Quality management system. Requirements.

ISO 14001:2015 - Environmental management systems – Requirements with guidance for use.

ISO 14025:2009-11: Environmental labels and declarations - Type III environmental declarations - Principles and procedures.

LCA of Flooring Systems - Report for Kingspan Access Floors Ltd (2021) - EuGeos Limited.

PCR 2019:14 Construction products Version 1.11, 2021-02-05 - EPD International AB.

GLOSSARY

FSC Chain of Custody certification: a certification programme, run by the FSC (Forest Stewardship Council) for environmentally-responsible wood and wood-based products (<https://ic.fsc.org/en/certification/types-of-certification/chain-of-custody-certification>).

The International EPD® System: 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)

Life cycle assessment (LCA): LCA studies the environmental aspects and quantifies the potential impacts (positive or negative) of a product (or service) throughout its entire life. ISO standards ISO 14040 and ISO 14044 set out conventions for conducting LCA.

PSA MOB: performance standard for raised access floors, set up by the Property Services Agency in 1992 and widely recognised in the UK.

Raised access flooring system: modular flooring system for interior applications, raised by means of a substructure, providing a floor cavity for accommodating cables, pipes and other installations.

REACH Regulation: REACH is the European Regulation on Registration, Evaluation, Authorisation and Restriction of Chemicals. It entered into force in 2007, replacing the former legislative framework for chemicals in the EU.

SUMMARY

FDEB4 ACCESS FLOOR PANEL EPD

This Environmental Product Declaration provides environmental performance indicators for Kingspan Access Floors' FDEB4 panels.

This is an Environmental Product Declaration in accordance with ISO 14025 and EN 15804, and third-party verified. It is a cradle-to-gate with modules C1-C4 & D EPD in accordance with the requirements of EN 15804. All other stages are dependent on the specific application of the product and should be included in a whole-of-life model.

This EPD is based on a life cycle assessment (LCA) study which used production data for 2019 from Kingspan Access Floors' manufacturing facility in Hull, UK. Background data were taken from the ecoinvent database (v3.6).

The declared unit is one FDEB4 Access Floor Panel (600mm x 600mm).

EPD programme & operator:	The International EPD® System EPD International AB - Stockholm - Sweden www.environdec.com
EPD owner:	Kingspan Access Floors Limited Burma Drive, Marfleet Hull HU9 5SG - UK www.kingspanaccessfloors.co.uk
Contact:	Technical Sales; email: info@kingspanaccessfloors.co.uk tel: +44 (0) 1482 781701
Declaration No:	S-P-0811
Date of publication:	2021-03-29
EPD valid until:	2026-03-28
Programme Category Rules:	The CEN standard EN 15804:2012 + A2:2019 serves as the core PCR
External verification by:	Ugo Pretato - Recognized Individual Verifier
LCA conducted by:	EuGeos Limited - UK www.eugeos.co.uk



ENVIRONMENTAL IMPACT INDICATORS A1-A3 (EN 15804+A1:2013)

