Statement of Verification

BREG EN EPD No: 000768 Issue: 01

This is to verify that the Environmental Product Declaration provided by:

Altro Limited

are in accordance with the requirements of:

EN 15804:2012+A2:2019

and

BRE Global Scheme Document SD207

This declaration is for: 1m^2 of Altro Ensemble flooring product with the thickness of 2.6mm and a weight of 2.35 kg per m^2.

Company Address

Altro Ltd,
Works Road,
Letchworth Garden City,
Hertfordshire,
SG6 1NW
United Kingdom

altro

Signed for BRE Global Limited — Hayley Thomson, Operator

Date of this Issue	Date of First Issue	Expiry Date
27 March 2026	27 March 2026	26 March 2031

BRE Global Verified EPD

BRE Global Ltd., Garston, Watford WD25 9XX
T: +44 (0)333 321 8811 F: +44 (0)1923 664603 E: Enquiries@breglobal.com

ECO PLATFORM EPD VERIFIED

Environmental Product Declaration

EPD Number: 000768

General Information

EPD Programme Operator	Applicable Product Category Rules
BRE Global Watford, Herts WD25 9XX United Kingdom	BRE 2025 Product Category Rules (PN 514 Rev 3.2) for Type III environmental product declaration of construction products to EN 15804:2012+A2:2019
Commissioner of LCA study	**LCA consultant/Tool**
Altro Ltd Works Road Letchworth Garden City Hertfordshire SG6 1NW United Kingdom	Mustafa Ali/BRE LINA A2
Declared/Functional Unit	**Applicability/Coverage**
1m^2 of Altro Ensemble flooring product with the thickness of 2.6mm and a weight of 2.35 kg per m^2.	Product Specific.
EPD Type	**Background database**
Cradle to Gate with options	Ecoinvent 3.8

Demonstration of Verification
CEN standard EN 15804 serves as the core PCR [a]
Independent verification of the declaration and data according to EN ISO 14025:2010 ☒Internal ☐ External
(Where appropriate [b])Third party verifier: Kim Allbury

a: Product category rules
b: Optional for business-to-business communication; mandatory for business-to-consumer communication (see EN ISO 14025:2010, 9.4)

Comparability
Environmental product declarations from different programmes may not be comparable if not compliant with EN 15804:2012+A2:2019. Comparability is further dependent on the specific product category rules, system boundaries and allocations, and background data sources. See Clause 5.3 of EN 15804:2012+A2:2019 for further guidance

Information modules covered

Product			Construction		Use stage							End-of-life					Benefits and loads beyond the system boundary
					Related to the building fabric					Related to the building							
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4		D
Raw materials supply	Transport	Manufacturing	Transport to site	Construction – Installation	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	Deconstruction demolition	Transport	Waste processing	Disposal		Reuse, Recovery and/or Recycling potential
☑	☑	☑	☑	☑	☐	☐	☐	☐	☐	☐	☐	☑	☑	☑	☑		☑

Note: Ticks indicate the Information Modules declared.

Manufacturing site(s)

Altro Deutschland GmbH & Co. KG
Ebertalle 209
D-06846 Dessau-Roßlau
Germany

Construction Product:

Product Description

Altro Ensemble/M500 is a 2.6 mm thick luxury vinyl tile modular flooring, available, in six sizes that can be flexibly mixed and matched to create unique designs from herringbone to geometric patterns. Impact sound insulation to 15dB and comfort underfoot. It is available in warm wood herringbone to geometric patterns, natural stone and concrete effects. Altro Ensemble's improved surface protection and micro-bevelled edge smooths the transition between planks and tiles, minimising damage and providing ease of cleaning. It is recommended for use in for front of house areas in hotels including foyers and reception areas, restaurant and café dining areas, retail, offices, and student accommodations.

Technical Information

The below table covers the basic technical properties of the Altro Ensemble/M500 product. For further properties, please see the products' pages on Altro's website: https://www.altro.de/Altro-Ensemble,

Property	Value, Unit
Thickness ((EN ISO 24346)	2.6 mm
Mass per area (EN ISO 23997)	2.35 Kg/m^2
Slip resistance EN 16165 Annex B EN 13893	R10 ≥ 0.30/DS
Fire performance (EN 13501-1)	Class Bfl-s1
Sound insulation (ISO 10140)	15 dB

Main Product Contents

The below table covers the main contents of the Altro Ensemble/M500 product.

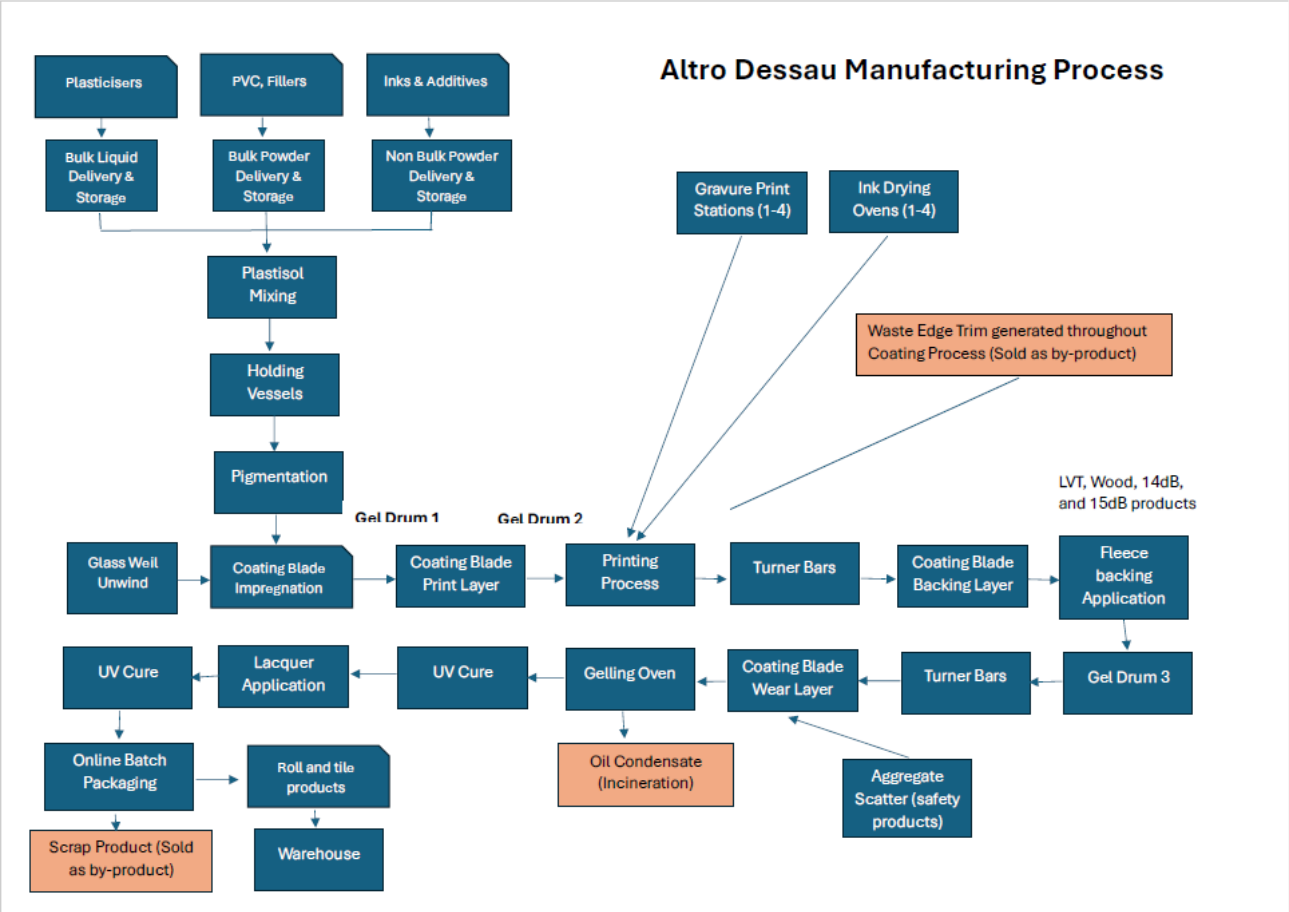
Material/Chemical Input	%
PVC	45.77
Filler	20.20
Plasticisers	22.39
Carrier material	5.87
Stabilisers	1.29
Pigments & coating	2.39
Additives	1.29
Others	0.8

Manufacturing Process

PVC plastisol is spread-coated onto a glass matt and gravure printed to give a range of designs. A PUR coating is added to the surface to enhance cleanability and stain resistance. Product is then cut into tiles.

Note: *For manufacturing, the Germany national grid electricity and the EU natural gas has been used, and any processing waste generated during production will be sent for recycling*

Process flow diagram



Construction Installation

. Altro Ensembled in installed using an appropriate adhesive. Some cutting may be needed with appropriate tools.

Use Information

Maintenance of the product, is simple visual checks for signs of damage and wear. No specialised care is needed beyond the occasional use of a tile cleaning solution.

End of Life

Altro Ensemble cannot be recovered at the end of life as it is bonded to the floor with an adhesive. Therefore, according to BRE PCR 3.2, 100% of Altro Ensemble will end up in landfill.

Life Cycle Assessment Calculation Rules

Declared / Functional unit description

1m^2 of Altro Ensemble flooring product with the thickness of 2.6mm and a weight of 2.35 kg per m^2.

System boundary

In accordance with the modular approach as defined in EN15804:2012+A2:2019 and the BRE 2025 Product Category Rules (PN 514 Rev 3.2), this cradle-to-gate LCA with options & modules C and D EPD includes the processes covered during the raw material extraction and manufacturing phase in modules A1 to A3. It also includes transport of the finished product to site in module A4, and the end-of-life scenario in modules C1, C2, C3, C4 and module D.

Data sources, quality and allocation

The supporting LCA study was carried out using BRE LINA A2 software using manufacturer-specific data provided by Altro for the production period between March 2024 and April 2025 at the Dessau, Germany site. The Dessau site produces other PVC products in addition to the Altro Ensemble/M500 product, so allocation was applied to site wide values for packaging, energy, water, non-production waste, and wastewater, on a m^2 of production basis. Production waste was allocated on a percentage mass of production basis. No allocation of raw material inputs was required as total raw material usage for Altro Ensemble/M500 made over the production period was used. Also, manufacturer has confirmed that 95% of water goes to sewer. Production and Non-production waste was allocated on a percentage mass of production basis. Secondary data has been drawn ecoinvent v3.8. All ecoinvent datasets are complete within the context used and conform to the system boundary and the criteria for the exclusion of inputs and outputs, according to the requirements specified in EN15804+A2:2019.

ISO14044 guidance. **Quality Level**	**Geographical representativeness**	**Technical representativeness**	**Time representativeness**
Very Good	Data from area under study.	Data from processes and products under study. Same state of technology applied as defined in goal and scope (i.e., identical technology).	There is approximately 3-4 years between the Ecoinvent LCI reference year, and the time period for which the LCA was undertaken

Table E.2 from EN 15804+A2, Annex E has been used to assess the data quality of relevant data. Location - based approach has been used for the electricity mix. Specific European datasets have been selected from the ecoinvent LCI for this LCA. Manufacturer uses the national grid electricity and natural gas for production, therefore the national grid electricity dataset “Electricity – Germany (kWh)” has been used for the LCA modelling (Ecoinvent 3.8). The GWP carbon footprint for using 1 kWh of electricity, Germany kWh is 0.604 kgCO2e/kWh and for the Natural gas, at industrial furnace (kWh, EU) carbon footprint for using 1 kWh is 0.256 kgCO2eq. The quality level of time representativeness is also Very Good as the background LCI datasets are based on ecoinvent v3.8 which was compiled in 2021. Therefore, there is less than 5 years between the ecoinvent LCI reference year and the time period for which the LCA was undertaken.
LCA-method Cut-off, EN 15804+A2 has been used. Characterisation factors are based on Annex C of EN15804 Standard (Table C.1).

Cut-off criteria

The inventory process in this LCA includes all data related to raw materials, packaging material and consumable items. Process energy, water use and discharge, and waste are also included. No inputs or outputs have been excluded. All raw materials and packaging inputs, plus their transport, process and general energy and water use, production and non-production waste, have been included, except for direct emissions to air, water and soil, which are not measured.

LCA Results (1m² of Altro Ensemble flooring product with the thickness of 2.6mm and a weight of 2.35 kg per m²)

(MND = module not declared; MNR = module not relevant; INA = indicator not assessed; AGG = aggregated)

Parameters describing environmental impacts									
			GWP-total	GWP-fossil	GWP-biogenic	GWP-luluc	ODP	AP	EP-freshwater
			kg CO_2 eq	kg CO_2 eq	kg CO_2 eq	kg CO_2 eq	kg CFC11 eq	mol H^+ eq	kg $(PO_4)^{3-}$ eq
Product stage	Raw material supply	A1	4.89E+00	4.70E+00	1.05E-01	8.01E-02	1.68E-06	3.29E-02	1.96E-03
	Transport	A2	2.17E-01	2.17E-01	1.85E-04	8.51E-05	5.01E-08	8.81E-04	1.40E-05
	Manufacturing	A3	2.15E+00	2.03E+00	1.23E-01	1.14E-03	1.98E-07	3.02E-03	1.12E-03
	Total (Consumption grid)	A1-3	7.26E+00	6.95E+00	2.28E-01	8.13E-02	1.93E-06	3.68E-02	3.09E-03
Construction process stage	Transport	A4	1.96E-02	1.95E-02	1.66E-05	7.67E-06	4.52E-09	7.93E-05	1.26E-06
	Construction	A5	2.18E-01	2.09E-01	6.86E-03	2.44E-03	5.78E-08	1.11E-03	9.29E-05
100% - Landfill									
End of life	Deconstruction, demolition	C1	1.21E-02	1.11E-02	9.52E-04	1.51E-05	2.76E-10	2.48E-05	1.68E-05
	Transport	C2	1.96E-02	1.95E-02	1.66E-05	7.67E-06	4.52E-09	7.93E-05	1.26E-06
	Waste processing	C3	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Disposal	C4	2.76E-01	2.75E-01	1.78E-04	2.82E-05	7.58E-09	2.26E-04	4.14E-06
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

GWP-total = Global warming potential, total;
GWP-fossil = Global warming potential, fossil;
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; and
EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment

LCA Results (continued)

(MND = module not declared; MNR = module not relevant; INA = indicator not assessed; AGG = aggregated)

Parameters describing environmental impacts									
			EP-marine	EP-terrestrial	POCP	ADP-mineral &metal	ADP-fossil	WDP	PM
			kg N eq	mol N eq	kg NMVOC eq	kg Sb eq	MJ, net calorific value	m^3 world eq deprived	disease incidence
Product stage	Raw material supply	A1	4.42E-03	4.44E-02	1.40E-02	9.94E-05	9.57E+01	4.06E+00	2.18E-07
	Transport	A2	2.65E-04	2.90E-03	8.87E-04	7.53E-07	3.27E+00	1.47E-02	1.87E-08
	Manufacturing	A3	9.96E-04	7.89E-03	2.32E-03	2.41E-06	3.00E+01	2.44E-01	1.84E-08
	Total (Consumption grid)	A1-3	5.68E-03	5.52E-02	1.72E-02	1.03E-04	1.29E+02	4.32E+00	2.55E-07
Construction process stage	Transport	A4	2.39E-05	2.61E-04	7.99E-05	6.79E-08	2.95E-01	1.33E-03	1.69E-09
	Construction	A5	1.71E-04	1.66E-03	5.17E-04	3.08E-06	3.87E+00	1.30E-01	7.68E-09
100% - Landfill									
End of life	Deconstruction, demolition	C1	8.03E-06	5.63E-05	1.39E-05	2.26E-08	1.54E-01	2.66E-03	9.34E-11
	Transport	C2	2.39E-05	2.61E-04	7.99E-05	6.79E-08	2.95E-01	1.33E-03	1.69E-09
	Waste processing	C3	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Disposal	C4	5.03E-03	8.16E-04	2.92E-04	8.75E-08	6.01E-01	2.66E-02	4.26E-09
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment;
EP-terrestrial = Eutrophication potential, accumulated exceedance;
POCP = Formation potential of tropospheric ozone;
ADP-mineral&metals = Abiotic depletion potential for non-fossil resources;
ADP-fossil = Depletion potential of the stratospheric ozone layer;
WDP = Water (user) deprivation potential, deprivation-weighted water consumption; and
PM = Particulate matter.

LCA Results (continued)

(MND = module not declared; MNR = module not relevant; INA = indicator not assessed; AGG = aggregated)

Parameters describing environmental impacts							
			IRP	ETP-fw	HTP-c	HTP-nc	SQP
			kBq U^{235} eq	CTUe	CTUh	CTUh	dimensionless
Product stage	Raw material supply	A1	5.63E-01	1.21E+02	5.19E-09	1.21E-07	2.04E+01
	Transport	A2	1.68E-02	2.56E+00	8.28E-11	2.68E-09	2.25E+00
	Manufacturing	A3	1.54E-01	1.04E+01	4.49E-10	8.61E-09	2.94E+00
	Total (Consumption grid)	A1-3	7.34E-01	1.34E+02	5.72E-09	1.32E-07	2.56E+01
Construction process stage	Transport	A4	1.52E-03	2.30E-01	7.46E-12	2.42E-10	2.03E-01
	Construction	A5	2.21E-02	4.02E+00	1.72E-10	3.96E-09	7.68E-01
100% - Landfill							
End of life	Deconstruction, demolition	C1	2.09E-03	9.06E-02	2.20E-12	8.29E-11	2.11E-02
	Transport	C2	1.52E-03	2.30E-01	7.46E-12	2.42E-10	2.03E-01
	Waste processing	C3	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Disposal	C4	2.93E-03	1.26E+00	2.01E-11	5.33E-10	1.40E+00
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

IRP = Potential human exposure efficiency relative to U235;
ETP-fw = Potential comparative toxic unit for ecosystems;
HTP-c = Potential comparative toxic unit for humans;
HTP-nc = Potential comparative toxic unit for humans; and
SQP = Potential soil quality index.

LCA Results (continued)

(MND = module not declared; MNR = module not relevant; INA = indicator not assessed; AGG = aggregated)

Parameters describing resource use, primary energy

			PERE	PERM	PERT	PENRE	PENRM	PENRT
			MJ	MJ	MJ	MJ	MJ	MJ
Product stage	Raw material supply	A1	5.15E+00	5.28E-01	5.68E+00	6.01E+01	3.24E+01	9.26E+01
	Transport	A2	4.61E-02	0.00E+00	4.61E-02	3.21E+00	0.00E+00	3.21E+00
	Manufacturing	A3	7.56E-01	9.29E-01	1.69E+00	1.42E+01	1.49E+01	2.91E+01
	Total (Consumption grid)	A1-3	5.95E+00	1.46E+00	7.42E+00	7.75E+01	4.73E+01	1.25E+02
Construction process stage	Transport	A4	4.16E-03	0.00E+00	4.16E-03	2.90E-01	0.00E+00	2.90E-01
	Construction	A5	8.15E-02	1.41E-01	2.23E-01	2.33E+00	1.42E+00	3.75E+00
100% - Landfill								
End of life	Deconstruction, demolition	C1	2.42E-02	0.00E+00	2.42E-02	1.60E-01	0.00E+00	1.60E-01
	Transport	C2	4.16E-03	0.00E+00	4.16E-03	2.90E-01	0.00E+00	2.90E-01
	Waste processing	C3	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Disposal	C4	1.23E-02	0.00E+00	1.23E-02	-7.18E+01	7.24E+01	5.91E-01
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

PERE = Use of renewable primary energy excluding renewable primary energy 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 resource

LCA Results (continued)

(MND = module not declared; MNR = module not relevant; INA = indicator not assessed; AGG = aggregated)

Parameters describing resource use, secondary materials and fuels, use of water						
			SM	RSF	NRSF	FW
			kg	MJ net calorific value	MJ net calorific value	m^3
Product stage	Raw material supply	A1	1.51E-02	0.00E+00	0.00E+00	1.24E-01
	Transport	A2	0.00E+00	0.00E+00	0.00E+00	3.65E-04
	Manufacturing	A3	7.72E-03	0.00E+00	0.00E+00	6.04E-03
	Total (Consumption grid)	A1-3	2.28E-02	0.00E+00	0.00E+00	1.30E-01
Construction process stage	Transport	A4	0.00E+00	0.00E+00	0.00E+00	3.29E-05
	Construction	A5	6.84E-04	0.00E+00	0.00E+00	3.91E-03
100% - Landfill						
End of life	Deconstruction, demolition	C1	0.00E+00	0.00E+00	0.00E+00	6.69E-05
	Transport	C2	0.00E+00	0.00E+00	0.00E+00	3.29E-05
	Waste processing	C3	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Disposal	C4	2.08E-04	0.00E+00	0.00E+00	6.26E-04
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	0.00E+00	0.00E+00	0.00E+00	0.00E+00

SM = Use of secondary material;
RSF = Use of renewable secondary fuels;
NRSF = Use of non-renewable secondary fuels;
FW = Net use of fresh water

LCA Results (continued)

(MND = module not declared; MNR = module not relevant; INA = indicator not assessed; AGG = aggregated)

Other environmental information describing waste categories					
			HWD	NHWD	RWD
			kg	kg	kg
Product stage	Raw material supply	A1	3.82E-01	7.98E+00	1.84E-04
	Transport	A2	3.61E-03	6.41E-02	2.21E-05
	Manufacturing	A3	6.63E-02	5.53E+00	5.50E-05
	Total (Consumption grid)	A1-3	4.52E-01	1.36E+01	2.61E-04
Construction process stage	Transport	A4	3.25E-04	5.78E-03	2.00E-06
	Construction	A5	1.36E-02	4.08E-01	7.86E-06
100% - Landfill					
End of life	Deconstruction, demolition	C1	8.66E-04	8.32E-02	6.52E-07
	Transport	C2	3.25E-04	5.78E-03	2.00E-06
	Waste processing	C3	0.00E+00	0.00E+00	0.00E+00
	Disposal	C4	1.26E-03	2.37E+00	3.53E-06
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	0.00E+00	0.00E+00	0.00E+00

HWD = Hazardous waste disposed;
NHWD = Non-hazardous waste disposed;
RWD = Radioactive waste disposed

LCA Results (continued)

(MND = module not declared; MNR = module not relevant; INA = indicator not assessed; AGG = aggregated)

Other environmental information describing output flows – at end of life								
			CRU	MFR	MER	EE	Biogenic carbon (product)	Biogenic carbon (packaging)
			kg	kg	kg	MJ per energy carrier	kg C	kg C
Product stage	Raw material supply	A1	0.00E+00	1.27E-05	3.92E-08	0.00E+00	1.06E-02	0.00E+00
	Transport	A2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Manufacturing	A3	0.00E+00	3.40E-01	2.35E-09	0.00E+00	0.00E+0	2.00E-02
	Total (Consumption grid)	A1-3	0.00E+00	3.40E-01	4.16E-08	0.00E+00	1.06E-02	2.00E-02
Construction process stage	Transport	A4	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Construction	A5	0.00E+00	2.37E-02	1.48E-09	0.00E+00	0.00E+00	0.00E+00
100% - Landfill								
End of life	Deconstruction, demolition	C1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Transport	C2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Waste processing	C3	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Disposal	C4	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

CRU = Components for reuse;
MFR = Materials for recycling

MER = Materials for energy recovery;
EE = Exported Energy

Scenarios and additional technical information

Scenarios and additional technical information				
Scenario	Parameter		Units	Results
A4	A generic transport to site distance of 50 km has been selected as a reasonable average. End-users of the EPD can use this information to calculate a bespoke transport to site distance if required, i.e. divide the module A4 impacts by 50 and multiply them by a bespoke distance			
	Fuel type / Vehicle type	Litre of fuel type per distance or vehicle type	16-32 tonne lorry	
	Distance:	km	50	
	Capacity utilisation (incl. empty returns)	%	26	
	Weight of the transported product	kg/m^3	3.35	
A5	This scenario has been modelled to account for packaging waste. The wood and cardboard waste has been assumed to be 100% recycled. A wastage rate of 3% was provided all of which has been modelled to have been landfilled.			
C1 - Deconstruction	When the product reaches the end of its life, it will be extracted from the building using power tools and sent to landfill. Unfortunately, the waste product cannot be recovered because it is contaminated with other materials such as the subfloor and adhesive. Therefore, according to BRE PCR 3.1, 100% of the Altro Ensemble flooring product will end up in landfill. The deconstruction will involve the use of an electric stripping machine to remove the tile from the floor.			
	Electricity		kWh	0.02
C2 - Transport	Altro Ltd sells products to customers globally.. Altro Ltd do not know where the tile will be sent/ go for their end-of-life destination i.e. landfill site. Therefore 50km by road (16-32 tonne lorry) has been modelled for module C2 as a typical distance from the demolition site to the disposal unit. However, end-users of the EPD can use this information to calculate the impacts of a bespoke transport distance for module C2 if required.			
	Distance		Km	50
C3 – Waste Processing	There are no pre-processing activities that the product undergoes before being sent to a landfill site.			
C4 – Disposal	According to Altro Ltd, 100% of the product is sent to the landfill at the end of life.			
	PVC Plastic waste to landfill		Kg	2.35
Module D	As 100% of the product is landfilled, there are no environmental benefits.			

Summary, comments and additional information

The bulk of the environmental impacts are attributed to the manufacturing of Altro Ensemble covered by information modules A1-A3 of EN15804:2012+A2:2019. Figure1 below breaks down the GWP of Altro Ensemble into clear categories to understand the modules which cause the largest environmental impact. It's clear that the majority of the environmental impact stems from the product modules (A1 – A3). Stage A1 (raw material) accounts for nearly all emissions, with a minor contribution from A2 (transportation). Stage A3 (manufacturing) shows the minimum value. The product is landfilled at the end-of-life stage, leading to GWP emissions in the C4 – Disposal stage.

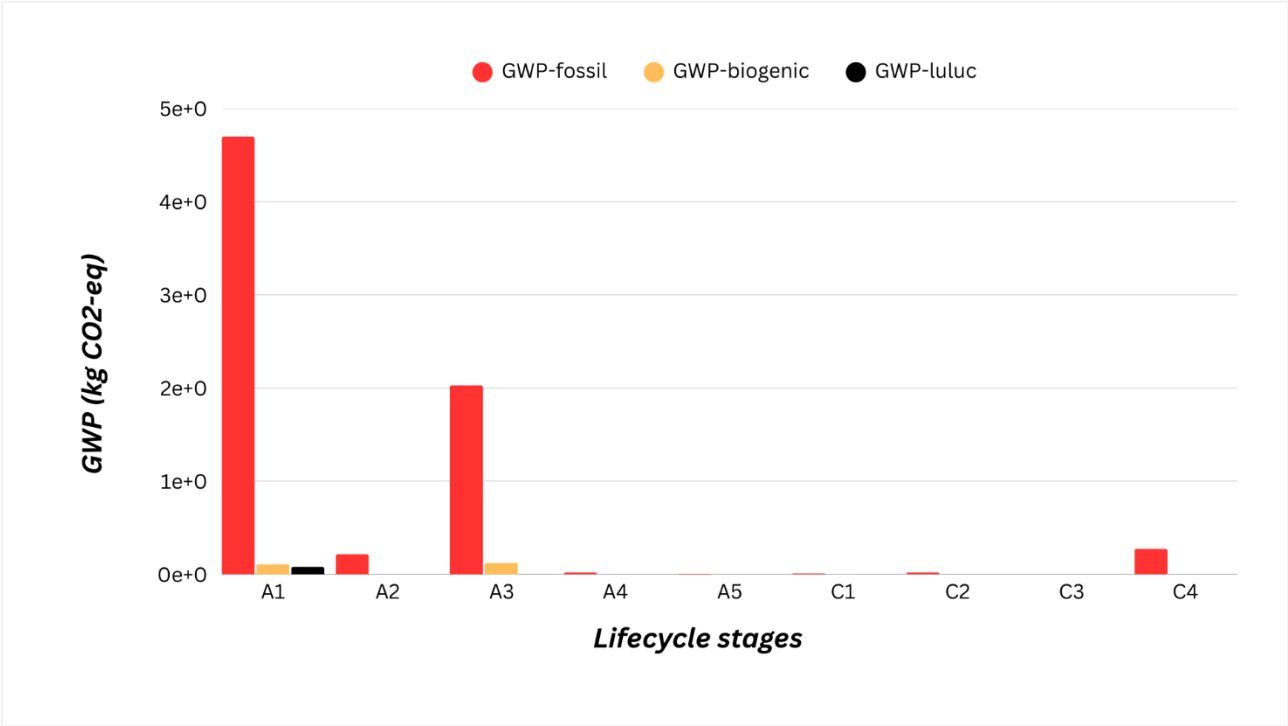


Figure 1 - GWP Contribution

References

BSI. Sustainability of construction works – Environmental product declarations – Core rules for the product category of construction products. BS EN 15804:2012+A2:2019. London, BSI, 2019.

BSI. Environmental labels and declarations – Type III Environmental declarations – Principles and procedures. BS EN ISO 14025:2010 (exactly identical to ISO 14025:2006). London, BSI, 2010.

BSI. Environmental management – Life cycle assessment – Principles and framework.
BS EN ISO 14040:2006. London, BSI, 2006.

BSI. Environmental management – Life cycle assessment – requirements and guidelines.
BS EN ISO 14044:2006. London, BSI, 2006.

EN ISO 24346 - Resilient floor coverings — Determination of overall thickness.

EN ISO 23997:2012 — Resilient floor coverings — Determination of mass per unit area

En 16165 Annex B - Determination of slip resistance of pedestrian surfaces — Methods of evaluation — Annex B: Ramp test for shod feet.

EN 13893 - Resilient, laminate and textile floor coverings — Measurement of dynamic coefficient of friction on dry floor surfaces.

EN 13501-1 – Fire classification of construction products and building elements — Part 1: Classification using data from reaction to fire tests.

ISO 10140 – Acoustics — Laboratory measurement of sound insulation of building elements