

Statement of Verification

BREG EN EPD No.: 000668

Issue 01

This is to verify that the

Environmental Product Declaration

provided by:

Newmor



is in accordance with the requirements of:

EN 15804:2012+A2:2019

and

BRE Global Scheme Document SD207

This declaration is for:

1m² of Vinyl Wallcovering on Non-woven Backing with the average weight of 0.389 kg/m²

Company Address

Newmor
Madoc Works,
Henfaes Lane,
Welshpool,
Powys,
SY21 7BE



NEWMOR
WALLCOVERINGS SINCE 1967

Emma Baker

18 March 2025

Signed for BRE Global Ltd

Operator

Date of this Issue

18 March 2025

17 March 2030

Date of First Issue

Expiry Date



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Environmental Product Declaration

EPD Number: 000668

General Information

EPD Programme Operator	Applicable Product Category Rules
BRE Global Watford, Herts WD25 9XX United Kingdom	BRE 2023 Product Category Rules (PN 514 Rev 3.1) for Type III environmental product declaration of construction products to EN 15804:2012+A2:2019
Commissioner of LCA study	LCA consultant/Tool
Newmor Wallcoverings Madoc Works, Henfaes Lane, Welshpool, Powys, SY21 7BE	LCA Tool: BRE LINA A2 LCA Consultant: Francis Yu
Declared/Functional Unit	Applicability/Coverage
1m2 of Vinyl Wallcovering on Non-woven Backing with the average weight of 0.389 kg/m ²	Product Average.
EPD Type	Background database
Cradle to Gate with Module C and D	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 <input type="checkbox"/> Internal <input checked="" type="checkbox"/> External	
(Where appropriate ^b) Third party verifier: Bala Subramanian	
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
A1	A2	A3	A4	A5	Related to the building fabric					Related to the building		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
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Note: Ticks indicate the Information Modules declared.

Manufacturing site(s)

Newmor Wallcoverings
Madoc Works,
Henfaes Lane,
Welshpool,
Powys,
SY21 7BE

Construction Product:

Product Description

Newmor Wallcoverings manufactures wallcoverings in Welshpool, Wales. The products under scope are decorative vinyl wallcoverings on non-woven base, for commercial and domestic applications. The weights of these products are 350gsm, 400gsm, 460gsm and 460gsm Type II.

The non-woven base is composed of a mixture of cellulose and polyethylene terephthalate (PET) fibres. The plasticised vinyl layer is pigmented before application, providing colour depth. Each design has a unique print which is applied using gravure printing. The wallcoverings are available with an embossed texture. Non-woven backed wallcoverings are dimensionally stable to aqueous paste and therefore do not require a soak time, unlike paper-backed conventional wallcoverings.

This EPD is using the 0.389kg/m² average weight of all non-woven products made in the production period, ranging from 350-460gsm. The total production quantity (kg) of all the non-woven product variants has been divided by the total production in m² to get the average weight per m². Since the product variants (350gsm, 400gsm, 460gsm, and 460gsm Type II) have the same composition, design mix and manufacturing process, therefore the end-user of this EPD can use the EPD results, and the conversion factor table listed at the end of this document to calculate the impacts for 1m² of the other specific products.

Technical Information

Property	350gsm	400gsm	460gsm	460gsm Type II
General				
Overall wall covering thickness (determined by Exova Warringtonfire)	0.34mm	0.49mm	0.5mm	0.5mm
Weight per unit area of wall covering (determined by Exova Warringtonfire)	350g/m ²	400g/m ²	460g/m ²	460g/m ²
Coating				
Generic type	PVC plastisol	PVC plastisol	PVC plastisol	PVC plastisol
Application rate	260g/m ²	310g/m ²	370g/m ²	355g/m ²
Application method	Reverse-roll coating	Reverse-roll coating	Reverse-roll coating	Reverse-roll coating
Curing process	Hot air oven at 220 °C for 30 seconds	Hot air oven at 220 °C for 30 seconds	Hot air oven at 220 °C for 30 seconds	Hot air oven at 220 °C for 30 seconds
Non-woven backing				
Generic type	Non-woven substrate	Non-woven substrate	Non-woven substrate	Non-woven substrate
Thickness	0.18mm	0.18mm nominal	0.195mm	0.195mm
Weight per unit area	90g/m ²	90g/m ²	90g/m ²	105g/m ²
Adhesive				
Generic type	PVA/ starch/ water	PVA/ starch/ water	PVA/ starch/ water	PVA/ starch/ water
Application rate	200g/m ²	200g/m ²	200g/m ²	200g/m ²
Application method	Lambswool roller	Lambswool roller	Lambswool roller	Lambswool roller
Primer				
Generic type	PVA/ starch/ water	PVA/ starch/ water	PVA/ starch/ water	PVA/ starch/ water
Application rate	85g/m ²	85g/m ²	85g/m ² wet	85g/m ² wet
Application method	Lambswool roller	Lambswool roller	Lambswool roller	Lambswool roller
Substrate				
Generic type	Fibre cement board	Fibre cement board	Fibre cement board	Fibre cement board
Thickness	8mm	6mm	8mm	12mm
Density	1800kg/m ³	1800kg/m ³	1800kg/m ³	1800kg/m ³

Test method & test number

Parameter	No. tests	350gsm		400gsm		460gsm		460gsm Type II	
		Continuous parameter Mean (m)	Compliance parameters	Continuous parameter Mean (m)	Compliance parameters	Continuous parameter Mean (m)	Compliance parameters	Continuous parameter Mean (m)	Compliance parameters
EN ISO 11925-2 (30s exposure - surface)									
Fs	6	Nil	Compliant	Nil	Compliant	20	Compliant	Nil	Compliant
Flaming droplets/ particles		None	Compliant	None	Compliant	None	Compliant	None	Compliant
EN ISO 11925-2 (30s exposure - edge)									
Fs	6	Nil	Compliant	Nil	Compliant	20	Compliant	Nil	Compliant
Flaming droplets/ particles		None	Compliant	None	Compliant	None	Compliant	None	Compliant
EN 13823									
FIGRA 0.2MJ	3	17.28	Compliant	45.06	Compliant	50.51	Compliant	27.7	Compliant
FIGRA 0.4MJ		12.22	Compliant	26.93	Compliant	14.82	Compliant	21.3	Compliant
THR 600s		1.73	Compliant	5.81	Compliant	1.87	Compliant	1.80	Compliant
LFS		None	Compliant	None	Compliant	None	Compliant	None	Compliant
SMOGR A		0.00	Compliant	0.00	Compliant	1.45	Compliant	6.8	Compliant
TSP 600s		64.34	Compliant	83.83	Compliant	46.35	Compliant	66.0	Compliant

Note: The technical properties and the test results are taken from Exova Warringtonfire classification reports. The Sponsor weights from the classification reports have been used here and they are consistent with the sales weights of the products. Please contact Newmor for details.



Main Product Contents

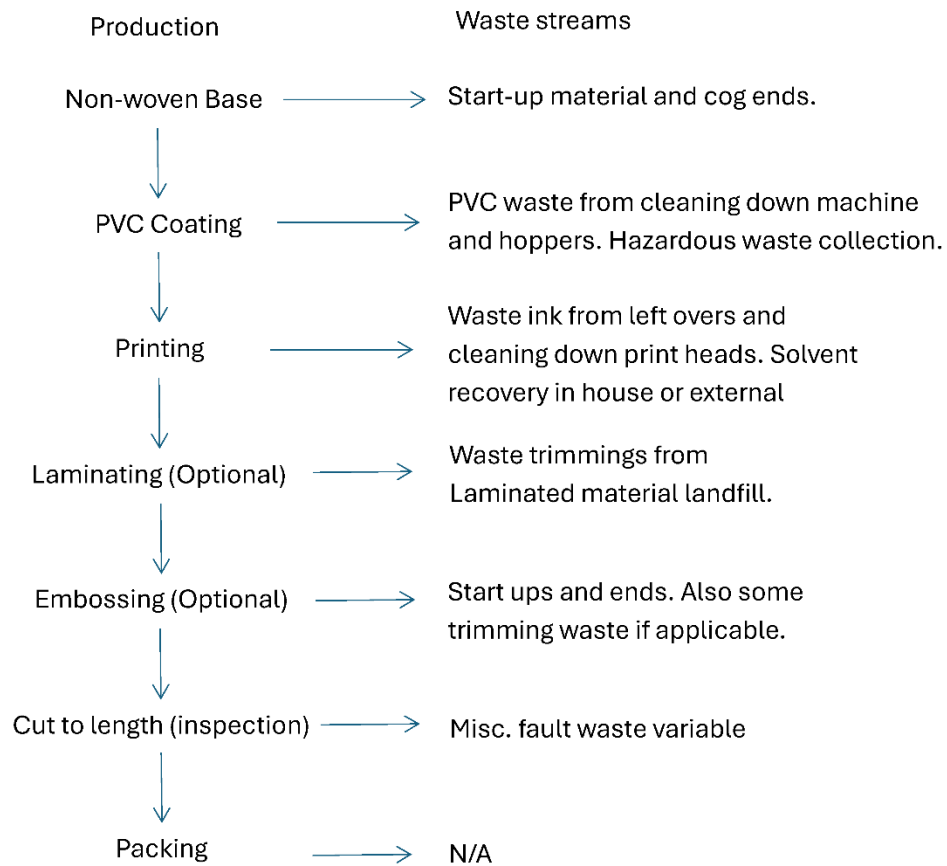
Material/Chemical Input	%
PVC resin	32
Non-woven substrate (polyester/cellulose)	23
Filler	21
Others	24

The product content is the same for all the product variants included in this EPD.

Manufacturing Process

The non-woven base is coated with pigmented, plasticised PVC which is then cured in an oven. The PVC may contain different additives depending on the product. The coated non-woven base is then sent for printing with solvent based inks using the gravure method. If the product is to be laminated, it is done at this stage. The printed product is then embossed with the chosen texture. The last stage of production is the final inspection – this is where the product is inspected, cut to length and packaged before being sent to the customer or our warehouse for stock.

Process flow diagram



End of Life

There is currently no process in place to process the product waste. Therefore, an industrial average end-of-life data has been used according to BRE 2023 Product Category Rules (PN 514 Rev 3.1), which is 100% of waste to energy-recovery incineration.

Life Cycle Assessment Calculation Rules

Declared / Functional unit description

1m² of Vinyl Wallcovering on Non-woven Backing with the average weight of 0.389 kg/m²

System boundary

This is a Cradle-to-Gate with Module C & D LCA, reporting all production life cycle stages of modules A1 to A3 and end-of-life stages C1-C4, and D in accordance with EN 15804:2012+A2:2019 and BRE 2023 Product Category Rules (PN 514 Rev 3.1).

Data sources, quality and allocation

Specific primary data derived from Newmor Wallcoverings production process in Madoc Works, Henfaes Lane, Welshpool, Powys, SY21 7BE factory, have been modelled using the LINA LCA A2 software A2 and the ecoinvent 3.8 database. In accordance with the requirements of EN 15804:2012+A2:2019, the most current available data has been used. The manufacturer-specific data from Newmor covers a period of one year (01/10/2022 – 30/09/2023). Secondary data has been obtained for all other upstream and downstream processes that are beyond the control of the manufacturer (i.e. raw material production) from the ecoinvent 3.8 database. 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 EN 15804:2012+A2:2019.

The LCA study includes all Newmor Vinyl Wallcovering on Non-woven Backing products (350 gsm, 400 gsm, 460 gsm, 460 gsm type II), which account for 23% of the site's total production. The factory also produces other products in addition to the woven backing products; therefore, allocation of energy, waste, water, non-production waste, and water discharge is required. This has been done on the following basis: Production waste and energy used to manufacture the woven backing products have been derived from actual measurements, so no allocation is required. Sitewide values for energy, water, and wastewater have been taken from bills.

There is no water used for production, and there are no breakdowns from the water bills. However, some water is used for office and factory operations, which must be allocated to product production. Since production does not require any water, water and wastewater for office and factory operations have been allocated based on a 5% assumption. Non-production waste has been allocated to the products by m² according to the provisions of the BRE PCR PN514 Rev 3.1 and EN 15804:2012+A2:2019.

Figures for raw materials, ancillary materials, and packaging are based on actual usage.

The mass balance of the LCA is within the correct range.

Proxy datasets are used for some chemicals, such as pigments, plasticisers, and stabilisers.

Quality Level	Geographical representativeness	Technical representativeness	Time representativeness
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 less than 5 years between the ecoinvent LCI reference year, and the time period for which the LCA was undertaken.

Specific UK datasets have been selected from the ecoinvent LCI for this LCA. The quality level of geographical representativeness is therefore very good. The proxies are mainly used for pigments. The reasons are Safety Data Sheets do not provide a full breakdown of material composition and percentages, or suitable chemicals cannot be found in the Ecoinvent database. Therefore, default unspecified organic/inorganic chemical datasets from ecoinvent 3.8 have been used for LCA modelling. According to ISO 14044+A1:2018, some proxy datasets have been used in the analysis; however, the overall data quality is considered good.. The quality level of time representativeness is 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.

UK 2022 Consumption mix was used for electricity with an emissions factor of 0.239kgCO₂e/kWh. UK Natural gas data (at industrial furnace) was used with an emissions factor of 0.232 kgCO₂eq/kWh.

Cut-off criteria

All processes associated with the manufacturing process have been included. All inputs and outputs have been included and all raw materials, packaging, transport, energy, water and wastes are included, except for direct emissions to air, water and soil, which are not measured. Upstream extraction and/or processing of inputs are included within the use of the background datasets within LINA.

LCA Results

(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	7.51E-01	7.03E-01	2.57E-02	2.18E-02	2.30E-07	3.33E-03	3.35E-04
	Transport	A2	5.36E-02	5.35E-02	4.46E-05	2.14E-05	1.23E-08	2.46E-04	3.41E-06
	Manufacturing	A3	4.00E-01	3.76E-01	2.20E-02	1.02E-04	2.98E-08	4.33E-04	2.18E-05
	Total (of product stage)	A1-3	1.20E+00	1.13E+00	4.77E-02	2.19E-02	2.72E-07	4.01E-03	3.60E-04
Construction process stage	Transport	A4	MND	MND	MND	MND	MND	MND	MND
	Construction	A5	MND	MND	MND	MND	MND	MND	MND
Use stage	Use	B1	MND	MND	MND	MND	MND	MND	MND
	Maintenance	B2	MND	MND	MND	MND	MND	MND	MND
	Repair	B3	MND	MND	MND	MND	MND	MND	MND
	Replacement	B4	MND	MND	MND	MND	MND	MND	MND
	Refurbishment	B5	MND	MND	MND	MND	MND	MND	MND
	Operational energy use	B6	MND	MND	MND	MND	MND	MND	MND
	Operational water use	B7	MND	MND	MND	MND	MND	MND	MND
100% to incineration Scenario									
End of life	Deconstruction, demolition	C1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Transport	C2	3.24E-03	3.23E-03	2.76E-06	1.27E-06	7.48E-10	1.31E-05	2.08E-07
	Waste processing	C3	8.21E-01	8.19E-01	1.77E-03	1.14E-04	2.59E-08	6.10E-04	3.59E-05
	Disposal	C4	0.00E+00	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	-1.92E-01	-1.90E-01	-2.48E-03	-2.00E-04	-1.34E-08	-1.10E-03	-1.04E-04

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 & metals	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	7.18E-04	6.16E-03	2.27E-03	9.83E-06	1.77E+01	5.16E-01	3.03E-08
	Transport	A2	7.24E-05	7.92E-04	2.38E-04	1.84E-07	8.06E-01	3.60E-03	4.56E-09
	Manufacturing	A3	1.72E-04	1.38E-03	4.47E-04	6.37E-07	6.64E+00	8.74E-02	3.38E-09
	Total (of product stage)	A1-3	9.63E-04	8.33E-03	2.95E-03	1.06E-05	2.51E+01	6.07E-01	3.82E-08
Construction process stage	Transport	A4	MND	MND	MND	MND	MND	MND	MND
	Construction	A5	MND	MND	MND	MND	MND	MND	MND
Use stage	Use	B1	MND	MND	MND	MND	MND	MND	MND
	Maintenance	B2	MND	MND	MND	MND	MND	MND	MND
	Repair	B3	MND	MND	MND	MND	MND	MND	MND
	Replacement	B4	MND	MND	MND	MND	MND	MND	MND
	Refurbishment	B5	MND	MND	MND	MND	MND	MND	MND
	Operational energy use	B6	MND	MND	MND	MND	MND	MND	MND
	Operational water use	B7	MND	MND	MND	MND	MND	MND	MND
100% to incineration Scenario									
End of life	Deconstruction, demolition	C1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Transport	C2	3.95E-06	4.32E-05	1.32E-05	1.12E-08	4.89E-02	2.20E-04	2.79E-10
	Waste processing	C3	1.77E-04	1.62E-03	4.52E-04	8.81E-07	1.27E+00	1.55E+00	4.86E-09
	Disposal	C4	0.00E+00	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	-1.61E-04	-1.60E-03	-4.47E-04	-1.12E-07	-2.99E+00	-7.97E-02	-7.70E-09

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	8.53E-02	1.71E+01	6.18E-10	1.27E-08	2.78E+00
	Transport	A2	4.14E-03	6.27E-01	2.07E-11	6.54E-10	5.47E-01
	Manufacturing	A3	6.67E-02	3.54E+00	6.79E-11	1.91E-09	1.56E+00
	Total (of product stage)	A1-3	1.56E-01	2.13E+01	7.06E-10	1.52E-08	4.89E+00
Construction process stage	Transport	A4	MND	MND	MND	MND	MND
	Construction	A5	MND	MND	MND	MND	MND
Use stage	Use	B1	MND	MND	MND	MND	MND
	Maintenance	B2	MND	MND	MND	MND	MND
	Repair	B3	MND	MND	MND	MND	MND
	Replacement	B4	MND	MND	MND	MND	MND
	Refurbishment	B5	MND	MND	MND	MND	MND
	Operational energy use	B6	MND	MND	MND	MND	MND
	Operational water use	B7	MND	MND	MND	MND	MND
100% to incineration Scenario							
End of life	Deconstruction, demolition	C1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Transport	C2	2.51E-04	3.81E-02	1.24E-12	4.00E-11	3.36E-02
	Waste processing	C3	8.61E-03	4.57E+01	1.66E-10	1.28E-08	7.19E-01
	Disposal	C4	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	-4.85E-02	-2.74E+00	-4.50E-11	-1.41E-09	-9.11E-01

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	8.71E-01	1.46E-01	1.02E+00	1.43E+01	9.33E+00	2.36E+01
	Transport	A2	1.13E-02	0.00E+00	1.13E-02	7.92E-01	0.00E+00	7.92E-01
	Manufacturing	A3	3.02E-01	2.69E-01	5.71E-01	5.55E+00	1.89E+00	7.44E+00
	Total (of product stage)	A1-3	1.18E+00	4.16E-01	1.60E+00	2.06E+01	1.12E+01	3.18E+01
Construction process stage	Transport	A4	MND	MND	MND	MND	MND	MND
	Construction	A5	MND	MND	MND	MND	MND	MND
Use stage	Use	B1	MND	MND	MND	MND	MND	MND
	Maintenance	B2	MND	MND	MND	MND	MND	MND
	Repair	B3	MND	MND	MND	MND	MND	MND
	Replacement	B4	MND	MND	MND	MND	MND	MND
	Refurbishment	B5	MND	MND	MND	MND	MND	MND
	Operational energy use	B6	MND	MND	MND	MND	MND	MND
	Operational water use	B7	MND	MND	MND	MND	MND	MND
100% to incineration Scenario								
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	6.89E-04	0.00E+00	6.89E-04	4.80E-02	0.00E+00	4.80E-02
	Waste processing	C3	1.16E-01	0.00E+00	1.16E-01	-7.11E+00	8.37E+00	1.26E+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	Reuse, recovery, recycling potential	D	-4.42E-01	0.00E+00	-4.42E-01	-3.01E+00	0.00E+00	-3.01E+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	7.35E-02	2.94E-05	0.00E+00	1.27E-02
	Transport	A2	0.00E+00	0.00E+00	0.00E+00	8.92E-05
	Manufacturing	A3	3.59E-04	1.64E-06	0.00E+00	2.35E-03
	Total (of product stage)	A1-3	7.38E-02	3.11E-05	0.00E+00	1.52E-02
Construction process stage	Transport	A4	MND	MND	MND	MND
	Construction	A5	MND	MND	MND	MND
Use stage	Use	B1	MND	MND	MND	MND
	Maintenance	B2	MND	MND	MND	MND
	Repair	B3	MND	MND	MND	MND
	Replacement	B4	MND	MND	MND	MND
	Refurbishment	B5	MND	MND	MND	MND
	Operational energy use	B6	MND	MND	MND	MND
	Operational water use	B7	MND	MND	MND	MND
100% to incineration Scenario						
End of life	Deconstruction, demolition	C1	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Transport	C2	0.00E+00	0.00E+00	0.00E+00	5.45E-06
	Waste processing	C3	0.00E+00	0.00E+00	0.00E+00	3.61E-02
	Disposal	C4	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	-1.98E-03

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	4.78E-02	1.06E+00	3.18E-04
	Transport	A2	8.92E-04	1.57E-02	5.46E-06
	Manufacturing	A3	1.30E-02	1.48E-01	2.78E-05
	Total (of product stage)	A1-3	6.17E-02	1.23E+00	3.51E-04
Construction process stage	Transport	A4	MND	MND	MND
	Construction	A5	MND	MND	MND
Use stage	Use	B1	MND	MND	MND
	Maintenance	B2	MND	MND	MND
	Repair	B3	MND	MND	MND
	Replacement	B4	MND	MND	MND
	Refurbishment	B5	MND	MND	MND
	Operational energy use	B6	MND	MND	MND
	Operational water use	B7	MND	MND	MND
100% to incineration Scenario					
End of life	Deconstruction, demolition	C1	0.00E+00	0.00E+00	0.00E+00
	Transport	C2	5.39E-05	9.57E-04	3.31E-07
	Waste processing	C3	2.15E-01	5.25E-01	6.26E-06
	Disposal	C4	0.00E+00	0.00E+00	0.00E+00
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	-1.23E-02	-6.51E-01	-1.47E-05

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	0.00E+00	0.00E+00	0.00E+00	-3.85E-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	1.50E-02	1.54E-02	1.52E-03	3.10E-03	-1.68E-03
	Total (of product stage)	A1-3	0.00E+00	1.50E-02	1.54E-02	1.52E-03	-3.54E-02	-1.68E-03
Construction process stage	Transport	A4	MND	MND	MND	MND	MND	MND
	Construction	A5	MND	MND	MND	MND	MND	MND
Use stage	Use	B1	MND	MND	MND	MND	MND	MND
	Maintenance	B2	MND	MND	MND	MND	MND	MND
	Repair	B3	MND	MND	MND	MND	MND	MND
	Replacement	B4	MND	MND	MND	MND	MND	MND
	Refurbishment	B5	MND	MND	MND	MND	MND	MND
	Operational energy use	B6	MND	MND	MND	MND	MND	MND
	Operational water use	B7	MND	MND	MND	MND	MND	MND
100% to incineration Scenario								
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	3.89E-01	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
Reference service life	Newmor Vinyl Wallcovering on Non-woven Backing products have a reference service life of 10 years.		
C1 – Deconstruction	At the end of this product's life, it can be simply stripped from the wall by hand. It requires no additional tools or materials. We assume a 100% recovery rate of the product at its end of life, and the recovered product will be sent to an incineration facility for waste treatment.		
C2 – Transport from site to pre-processing facility or landfill	There is currently no process in place to transport the product waste. 50km by road has been modelled for module C2 as a typical distance from the demolition site to the recycling plant. Therefore, end-users of the EPD can use this information to calculate the impacts of a bespoke transport distance for module C2 if required.		
	Road transportation- Lorry 16-32 tonne	km	50
C3 - Pre-processing of uninstalled product	There is currently no process in place to process the product waste. The Newmor Vinyl Wallcovering on Non-woven Backing products are typically made of 32% PVC resin, 24% other chemicals, 23% polyester/cellulose, and 21% filler. Once manufactured, these components cannot be separated. Therefore, at the end of its life, the waste is assumed to be treated as PVC waste. Therefore, the most appropriate end-of-life scenario has been selected by referencing BRE PCR EN 15804 3.1. An industry-average end-of-life dataset for PVC membranes has been used, assuming 100% waste-to-energy recovery.		
	100% Newmor Vinyl Wallcovering on Non-woven Backing waste to incineration for energy recovery	kg/m2	0.389
C4 – Disposal	100% of product will be incinerate at the waste processing unit, therefore no end-of-life waste will be landfilled in C4.		
Module D	The benefits of Module D include the energy credits from incineration of waste product at end-of-life. Non-combustible contents (mineral fillers) have been excluded from per m2 of Newmor Vinyl Wallcovering on Non-woven Backing, only the remaining combustible content are accounted for in Module D energy recovery calculation, i.e. 85.8% combustible content can be claimed for module D benefits. The incinerated energy and heat will replace the European average mix.		
	Recovered for heat and energy	kg/m2	0.3338

Individual product calculations:

The LCA results listed in the EPD are for 1m2 of Vinyl Wallcovering on Non-woven Backing products with the weight of 0.389 kg/m2, which represents an average weight of overall non-woven wallcovering production. The end-user of this EPD can therefore use these results and the conversion factors listed below to calculate the impacts for 1m2 of the other specific products:

Product name	kg/m2	Conversion factor
350gsm Vinyl Wallcovering on Non-woven Backing Type I	0.35	0.900
400gsm Vinyl Wallcovering on Non-woven Backing Type I	0.40	1.028
460gsm Vinyl Wallcovering on Non-woven Backing Type I & II	0.46	1.183

Interpretation

Out of the total mass of input materials, PVC resin makes up 32%; followed by other additives of 24%; non-woven substrate (polyester/cellulose) of 23%, fillers make up the remaining of 21%. The bulk of the environmental impacts and primary energy demand are attributed to the production phase, covered by information modules A1-A3 of EN15804:2012+A2:2019. Some additives and pigments are included as raw material inputs, and the unspecified organic chemical dataset has been used for these components as a worst-case scenario. The global warming potential (GWP) of the proxy additives and pigments account for 9.4% of the total GWP across the whole life cycle across the whole life cycle.

As a result, PVC resin and the additives rank the first and second in terms of overall environmental impacts and are responsible for the greatest impact on GWP-total indicator. Nonwoven substrate ranks the third in terms of overall environmental impact indicators. Although the total mass of fillers is 21%, it contributes a very small part of the overall impacts. Ref: Figure 1 below.

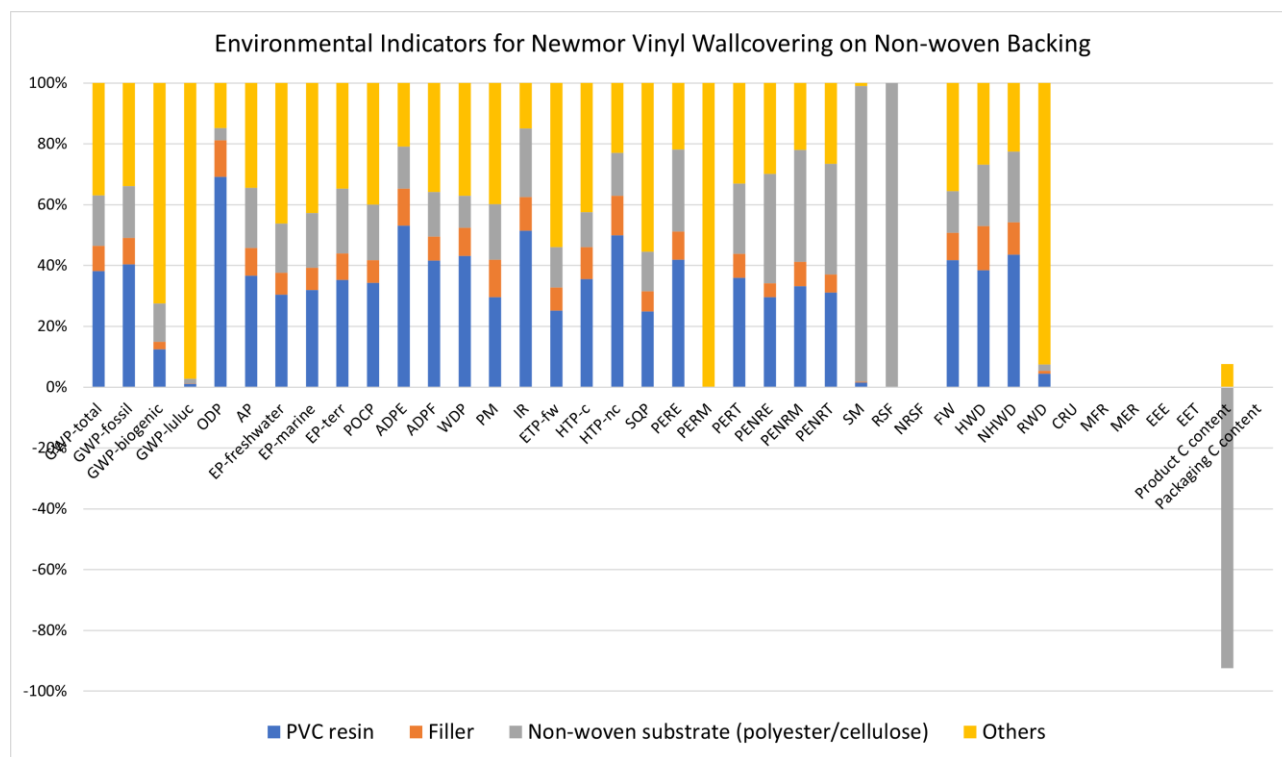


Figure 1

References

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