Statement of Verification

BREG EN EPD No: 000551 Issue: 02

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

Barrisol Normalu SAS

are in accordance with the requirements of:

EN 15804:2012+A2:2019

and

BRE Global Scheme Document SD207

This declaration is for:
1 m2 of installed Biosourcé BOS01 biopolymer (0.216 kgm2)

Company Address

Barrisol Normalu SAS
Kembs Site
Routes du Sipes,
68680 Kembs,
France

Signed for BRE Global Limited — Hayley Thomson, Operator

Date of this Issue	Date of First Issue	Expiry Date
07 October 2025	29 January 2024	29 January 2029

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Environmental Product Declaration

EPD Number: 000551

General Information

EPD Programme Operator	Applicable Product Category Rules
BRE Global Watford, Herts WD25 9XX United Kingdom	BRE Environmental Profiles 2023 Product Category Rules for Type III environmental product declaration of construction products to EN 15804+A2 PN 514 Rev 3.1
Commissioner of LCA study	**LCA consultant/Tool**
Barrisol Normalu SAS Kembs Site Routes du Sipes, 68680 Kembs, France	Flavie Lowres, BRE Lina A2
Declared/Functional Unit	**Applicability/Coverage**
1 m^2 of installed Biosourcé BOS01 biopolymer (0.216 kg/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: 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
					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)

The Biosourcé product is manufactured at the following site:

Barrisol Normalu SAS
Kembs Site
Routes du Sipes, 68680 Kembs, France

Construction Product:

Product Description

Barrisol Normalu SAS manufactures stretched ceiling. Biosourcé BOS01 is made using a biopolymer film. Each stretched ceiling is cut to size for the specific project where the product will be installed.

This EPD concerns 1m^2 of installed Barrisol stretched ceiling, Biosourcé BOS01 biopolymer – which can be backlit, printed or perforated for acoustic. The biopolymer film is without phthalate and contains no lead or cadmium. The ceiling system is a stretched ceiling. In order to install 1 m^2 of product, the installer uses 0.93 m x 0.93 m (0.86 m^2) of manufactured product which is stretched on site using heat. 0.93 m x 0.93 m (0.86 m^2) of manufactured product which is stretched on site using heat. This EPD provides data for 1 m^2 of installed product (or 0.86 m^2 of manufactured product) which weight 0.216 kg/m^2.

All Biosourcé ceilings produced in Normalu Barrisol have CE mark. Barrisol's stretched ceiling can be installed in all building types (public and private including housing) and events. Barrisol's products are also IMO certified for use in boats if requested by the customer.

Biosourcé BOS01 biopolymer is 100% recyclable.

The product service life is 50 years according to the supplier's information.

Technical Information

	Property	Standard	Value, Unit
Biosourcé BOS01 Biopolymer film	Thickness of manufactured product	N/A	0.18 mm +/- 10%
	Thickness of installed product	N/A	0.15 mm +/- 10%
	Density (of 1 m^2 of manufactured product)	N/A	250 g/m^2 +/- 10%
	Density (of 1 m^2 of installed product)	N/A	216 g/m^2 +/- 10%
	VOC classified	NF EN ISO 16000-11 NF EN ISO 16000-9 NF ISO 16000-6 NF ISO 16000-3	A+
	Moisture resistance	N/A	100%
	REACH compliant		
	Phthalate free	NF EN ISO 14389	<0.1%
	CE marking	EN 14716: 2004	Certificate N°0071-CPR-14627
Biosourcé BOS01 installed system	Acoustic performances	ISO 354 DIN EN ISO 11654 ASTM C 423	αw = 0.65 (membrane without insulation) up to αw = 1.0 (with adapted acoustic insulation, insulation not considered in this EPD
	Reaction to fire	NF EN 11925-2 NF EN 13823	B-s1, d0 – Class 1
	IMO certification	Regulation 2018/773 – certificate of conformity (module B+ module F) IMO res MSC.61 (67) -(FTP code), Annex 1 part 5, and annex 2 IMO MSC / Circ 1120 IMO Res. MSC.307(88)-(2010 FTP Code) Section 8	
	GREENGUARD GOLD	Certificate number : 307209-420	

Origine France warranty	Certificate N° 6039707 .	This label confirm geographical origin of labelled products : “stretch ceilings and walls solutions”	
WWF		Member of France's Club Entreprendre pour la Planète. Barrisol has been protecting the environment for over 50 years by promoting 100% recyclable solutions and some made of recycled materials. See: https://barrisol.com/fr/actualites/2021/barrisol-membre-du-club-entreprendre-pour-la-planete-du-wwf-france	

Further information on the technical performance of Biosourcé BOS01 can be found on Barrisol’s website: Barrisol The bio-based - Details or on demand to the manufacturer.

Main Product Contents

The ceiling film Biosourcé BOS01 film is made of:

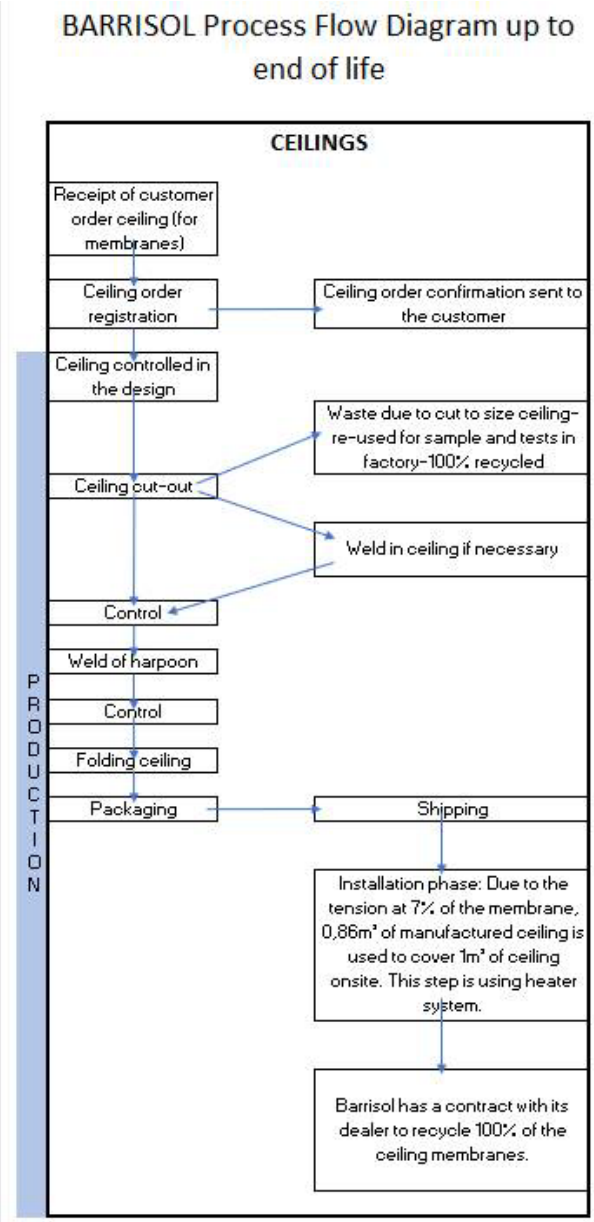
Material/Chemical Input	%
Polymer	40-60%
Bio-plasticizer	20-30%
Stabilizer	<3%
Fire retardant	10-20%
Pigment	8-12%

Manufacturing Process

Rolls of Biosourcé BOS01 biopolymer film are brought to site where the fabric is measured, sometimes printed, cut to size and welded with perimeter harpoon.

The required amount of Biosourcé BOS01 stretched ceiling is packaged for installation on site.

Process flow diagram



Construction Installation

Products are manufactured in France. 40% is used in France and the rest is mostly installed in buildings in Europe.

The installation of 1 m^2 of Biosourcé BOS01 biopolymer requires 0.93 m x 0.93 m (or 0.86 m^2) of manufactured product and the use of heat to ensure the ceiling system is stretched appropriately. There is no waste from the biopolymer film which is cut to size in the factory.

Use Information

B1: the Biosourcé BOS01 biopolymer stretched ceiling system has an A+ rating for indoor air quality. There are no emissions during its life.

Barrisol stretched ceilings can be disassembled and reassembled during the life of the product, for example for a new integration in the ceiling (lighting, passage of electrical cables...). The energy for the disassembly and re-assembly is not included in the study.

End of Life

Barrisol includes a clause in their contract with distributors that requires that any defective or replaced Barrisol ceiling should be returned to Barrisol for recycling. Stretched ceilings brought back to Barrisol are 100% recycled by their waste management company. For more details, please contact Barrisol's technical team.

Life Cycle Assessment Calculation Rules

Declared / Functional unit description

1 m^2 of installed Biosourcé BOS01 biopolymer (0.216 kg/m^2)

System boundary

In accordance with the modular approach as defined in EN15804:2012+A2:2019 and BRE‘s PCR EN15804+A2 v3.1, this cradle-to-gate with options EPD includes the processes covered in the manufacturing site and product stage A1 to A3, A4, A5, B1, C1 to C4 and D

Data sources, quality and allocation

Specific primary data derived from the Biosourcé BOS01 production process in the Kembs factory, Routes du Sipes, 68680 Kembs (France), In accordance with the requirements of EN15804, the most current available data has been used. Specific primary data from the supplier of the biopolymer sheet were also used. The manufacturer-specific data for the biopolymer film covers a period of one year (01/01/2021 – 31/12/2021) using LINA A2. Benzoic acid (from plant as resin) was used as a proxy for the bio-plasticizer. Secondary data has been obtained for all remaining upstream and downstream processes that are beyond the control of the manufacturer 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 EN15804. Biosourcé BOS01 is not the only product to processed at the Kembs factory. All input data provided for Barrisol's factory have been allocated by m^2 to Biosourcé BOS01.

Quality Level Geographical
Specific French datasets have been selected from the ecoinvent LCI for French grid electricity. The quality level of geographical and technical representativeness is therefore very 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, the most appropriate LCA data have been used.

The manufacturer uses hydroelectricity, however, in order to meet the requirements of BRE’s PCR EN15804+A2 v3.1, the A1-A3 data have been modelled using the French electricity dataset; 1 kWh French electricity (Electricity, medium voltage {FR} market for electricity, medium voltage EN15804, U) = 8.66E-02 $kgCO_2eq$

Cut-off criteria

The study includes the manufacturing of the biopolymer film and fabrication of the stretched ceiling film in Barrisol's factory in Kembs. This EPD does not include the fixings that would be required to install the stretched ceiling. The emissions to air, water and soil have been excluded.

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	8.20E-01	8.07E-01	1.22E-02	8.39E-04	1.84E-07	9.51E-03	2.86E-03
	Transport	A2	2.30E-02	2.29E-02	1.95E-05	9.00E-06	5.31E-09	9.31E-05	1.48E-06
	Manufacturing	A3	3.20E-01	3.53E-01	-3.55E-02	1.05E-03	2.89E-08	1.38E-03	1.04E-04
	Total (Consumption grid)	A1-3	1.16E+00	1.18E+00	-2.33E-02	1.90E-03	2.18E-07	1.10E-02	2.97E-03
Construction process stage	Transport	A4	5.39E-02	5.38E-02	4.59E-05	2.11E-05	1.25E-08	2.19E-04	3.47E-06
	Construction	A5	6.09E-02	6.08E-02	7.71E-05	1.52E-05	7.46E-08	6.24E-04	3.41E-06
Use stage	Use	B1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
100% recycled at end of life.									
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	1.80E-03	1.79E-03	1.53E-06	7.05E-07	4.15E-10	7.29E-06	1.16E-07
	Waste processing	C3	8.03E-02	8.05E-02	-1.72E-04	4.97E-05	5.65E-09	2.25E-04	1.05E-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	-5.20E-01	-5.14E-01	-5.26E-03	-3.94E-04	-2.58E-07	-2.37E-03	-1.75E-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	1.66E-03	2.15E-02	5.05E-03	2.97E-02	1.80E+01	8.50E-01	6.38E-08
	Transport	A2	2.80E-05	3.06E-04	9.38E-05	7.97E-08	3.47E-01	1.56E-03	1.98E-09
	Manufacturing	A3	5.42E-04	3.56E-03	1.02E-03	1.95E-06	1.77E+01	2.76E-01	1.85E-08
	Total (Consumption grid)	A1-3	2.23E-03	2.54E-02	6.16E-03	2.97E-02	3.60E+01	1.13E+00	8.43E-08
Construction process stage	Transport	A4	6.58E-05	7.19E-04	2.20E-04	1.87E-07	8.14E-01	3.66E-03	4.65E-09
	Construction	A5	8.61E-05	9.21E-04	3.82E-04	7.61E-08	4.52E+00	3.88E-03	4.85E-09
Use stage	Use	B1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
100% recycled at end of life.									
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	2.19E-06	2.40E-05	7.34E-06	6.24E-09	2.71E-02	1.22E-04	1.55E-10
	Waste processing	C3	8.69E-05	6.84E-04	2.24E-04	3.99E-07	7.88E-01	1.85E-02	4.65E-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	Reuse, recovery, recycling potential	D	-3.92E-04	-4.78E-03	-1.35E-03	-8.04E-06	-1.25E+01	-4.10E-01	-1.79E-08

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	2.24E-01	2.42E+02	1.90E-09	8.11E-08	5.29E+00
	Transport	A2	1.78E-03	2.71E-01	8.76E-12	2.84E-10	2.38E-01
	Manufacturing	A3	6.93E-01	6.62E+00	1.70E-10	3.53E-09	7.18E+00
	Total (Consumption grid)	A1-3	9.19E-01	2.49E+02	2.08E-09	8.49E-08	1.27E+01
Construction process stage	Transport	A4	4.19E-03	6.35E-01	2.06E-11	6.66E-10	5.59E-01
	Construction	A5	2.00E-02	2.38E+00	2.79E-11	6.19E-10	5.79E-01
Use stage	Use	B1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
100% recycled at end of life.							
End of life	Deconstruction, demolition	C1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Transport	C2	1.40E-04	2.12E-02	6.86E-13	2.22E-11	1.86E-02
	Waste processing	C3	4.24E-03	7.85E-01	9.67E-11	8.55E-10	6.14E-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	-8.04E-02	-7.00E+00	-4.96E-10	-9.90E-09	-1.19E+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	1.04E+00	1.64E-01	1.21E+00	1.38E+01	4.11E+00	1.79E+01
	Transport	A2	4.88E-03	0.00E+00	4.88E-03	3.40E-01	0.00E+00	3.40E-01
	Manufacturing	A3	4.99E-01	1.93E+00	2.43E+00	1.51E+01	2.47E+00	1.76E+01
	Total (Consumption grid)	A1-3	1.54E+00	2.09E+00	3.64E+00	2.92E+01	6.58E+00	3.58E+01
Construction process stage	Transport	A4	1.15E-02	0.00E+00	1.15E-02	7.99E-01	0.00E+00	7.99E-01
	Construction	A5	-2.45E+00	2.46E+00	1.40E-02	3.38E-02	4.37E+00	4.41E+00
Use stage	Use	B1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
100% recycled at end of life.								
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	3.82E-04	0.00E+00	3.82E-04	2.66E-02	0.00E+00	2.66E-02
	Waste processing	C3	1.28E-02	0.00E+00	1.28E-02	-9.07E+00	9.17E+00	1.07E-01
	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	-6.38E-01	0.00E+00	-6.38E-01	-7.82E+00	-4.64E+00	-1.25E+01

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	1.35E-02	5.07E-04	0.00E+00	1.62E-02
	Transport	A2	0.00E+00	0.00E+00	0.00E+00	3.86E-05
	Manufacturing	A3	1.46E-01	0.00E+00	0.00E+00	7.26E-03
	Total (Consumption grid)	A1-3	1.60E-01	5.07E-04	0.00E+00	2.35E-02
Construction process stage	Transport	A4	0.00E+00	0.00E+00	0.00E+00	9.07E-05
	Construction	A5	0.00E+00	0.00E+00	0.00E+00	9.66E-05
Use stage	Use	B1	0.00E+00	0.00E+00	0.00E+00	0.00E+00
100% recycled at end of life.						
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	3.02E-06
	Waste processing	C3	0.00E+00	0.00E+00	0.00E+00	4.46E-04
	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	-1.91E-03	0.00E+00	0.00E+00	-9.80E-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	1.12E-01	1.32E+01	7.09E-05
	Transport	A2	3.82E-04	6.79E-03	2.35E-06
	Manufacturing	A3	1.83E-02	5.27E-01	2.02E-04
	Total (Consumption grid)	A1-3	1.31E-01	1.37E+01	2.75E-04
Construction process stage	Transport	A4	8.97E-04	1.59E-02	5.51E-06
	Construction	A5	1.61E-03	2.34E-02	3.19E-05
Use stage	Use	B1	0.00E+00	0.00E+00	0.00E+00
100% recycled at end of life.					
End of life	Deconstruction, demolition	C1	0.00E+00	0.00E+00	0.00E+00
	Transport	C2	2.99E-05	5.31E-04	1.84E-07
	Waste processing	C3	2.33E-03	3.37E-02	4.90E-07
	Disposal	C4	0.00E+00	0.00E+00	0.00E+00
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	-3.00E-02	-8.04E-01	-2.61E-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	7.05E-04	8.16E-07	6.50E-02	0.00E+00	-4.69E-03
	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	2.15E-02	3.12E-02	0.00E+00	-3.10E-04	-6.79E-02
	Total (Consumption grid)	A1-3	0.00E+00	2.22E-02	3.12E-02	4.97E-02	-3.10E-04	-7.26E-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	3.56E-01	5.81E-09	0.00E+00	4.31E-03	7.41E-02
Use stage	Use	B1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
100% recycled at end of life.								
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	2.16E-01	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 – Transport to the building site	40% of the Barrisol Biosourcé BOS01 is used in France and the majority of the rest is used in Europe. For the purpose of this EPD, we have assumed the worst-case scenario of 1500 km by road		
	Fuel type / Vehicle type	Litre of fuel type per distance or vehicle type	340
	Distance:	km	1500
	Capacity utilisation (incl. empty returns)	%	26%
	Bulk density of transported products – Biosourcé BOS01	kg/m^3	0.25
A5 – Installation in the building	The installation of Biosourcé BOS01 requires the use of heat (propane or electric heater depending on the project requirements) to ensure the ceiling system is stretched appropriately. For the purpose of this study, it was assumed that propane was used. There is no waste from the biopolymer film which is cut to size in the factory.		
	Use of heat for the installation, for a 1 m^2 system: Propane.	kg	0.08
	Transport of propane	Km	8
B1 – Use	The Biosourcé BOS01 ceiling system has an A+ rating for indoor air quality		
C1 – Deconstruction	The Biosourcé BOS01 ceiling system is taken down manually. 100% of the product is recovered at the end of its life		
C2 - Transport from site to pre-processing facility or landfill	All elements of the system can be disassembled and recycled through commonly available waste management processing plant.		
	Transport by lorry to recycling plant	km	50
C3 – Waste Processing	Barrisol includes a clause in their contract with distributors that requires that any defective or replaced Barrisol ceiling should be returned to Barrisol for recycling. Stretched ceilings brought back to Barrisol are 100% recycled by their waste management company. For more details, please contact Barrisol's technical team.	%	100
	Quantity of Biosourcé BOS01 recycled (for 1 m^2 @ 0.216 kg/m^2)	Kg	0.216
C4- Disposal	For the purpose of this EPD, it was assumed that 0% of polymer was landfill via the manufacturer's take back scheme		
	Landfilled rate Biosourcé BOS01	%	0
	Quantity of Biosourcé BOS01 landfilled (for 1 m^2 @ 0.216 kg/m^2)	Kg	0
Module D - Benefits and loads beyond the system	The Biosourcé BOS01 biopolymer film can be 100% recycled at the Barrisol factory to make further biopolymer film		
	Quantity of Biosourcé BOS01 recycled (for 1 m^2 @ 0.216 kg/m^2)	kg	0.216

Interpretation of results and further analysis

40-60% of the input by mass is the biopolymer, 20-30% is the plasticizer, 10-20% is from the fire retardant and 8-12% from the pigment. 28% of the impact in GWP total is associated with the biopolymer, 24% is from the flame retardant and 15% is from the pigment and from the plasticizer respectively. Less than 10% of the impact is GWP are associated with the use of energy to make the biopolymer film. 77% of the impact of the stretched ceiling (A1 to A3) is from the manufacturing of the biopolymer film

Graphical representation of the results

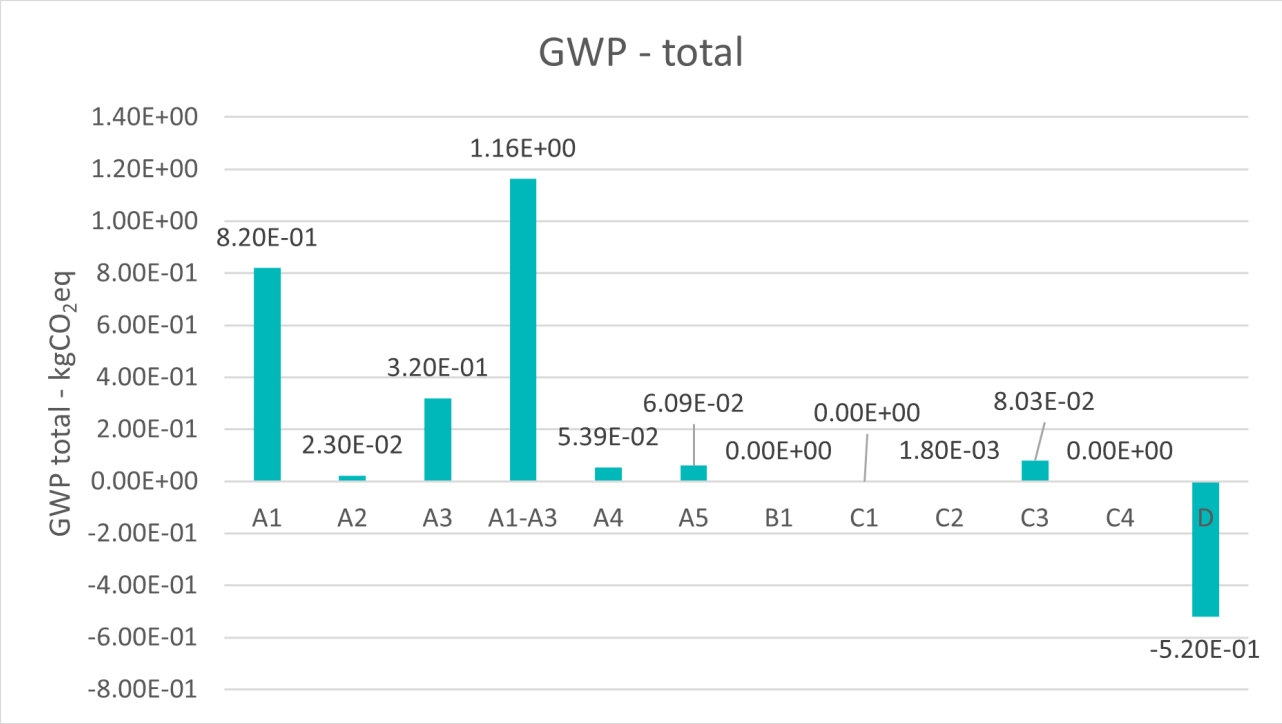


Figure 1

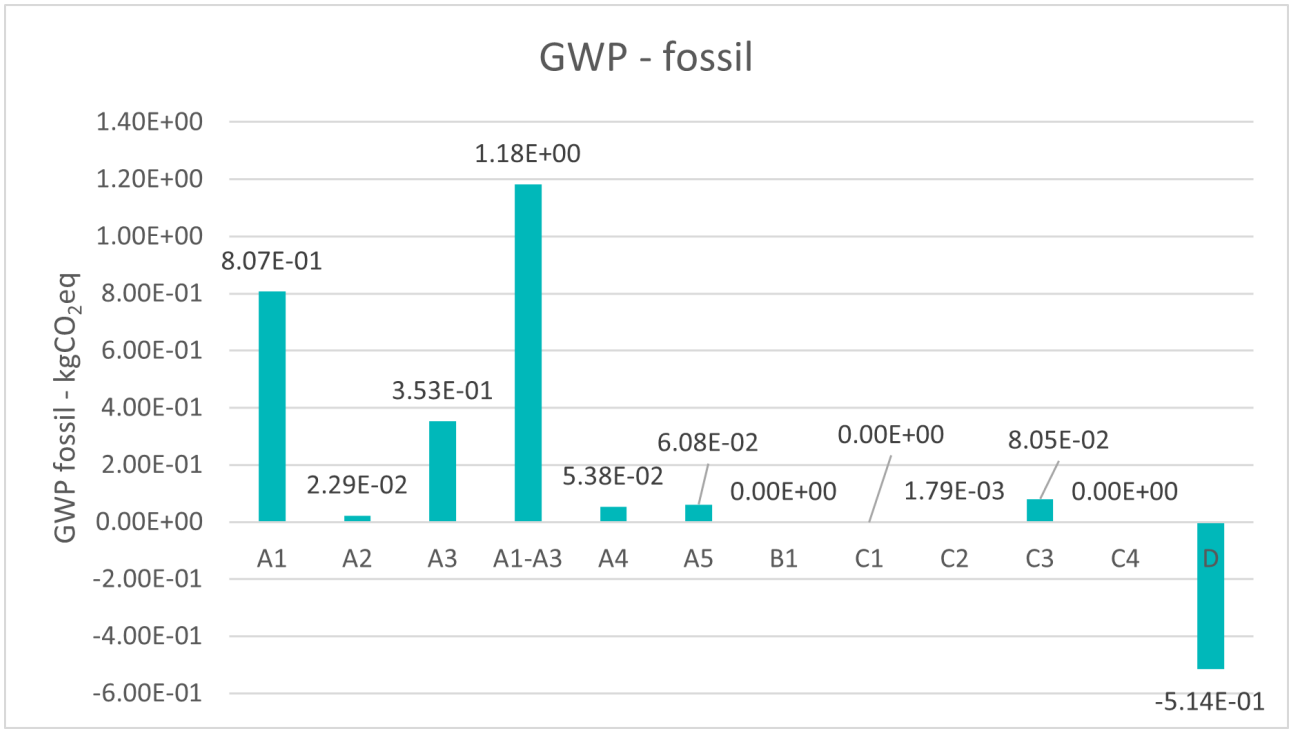


Figure 2

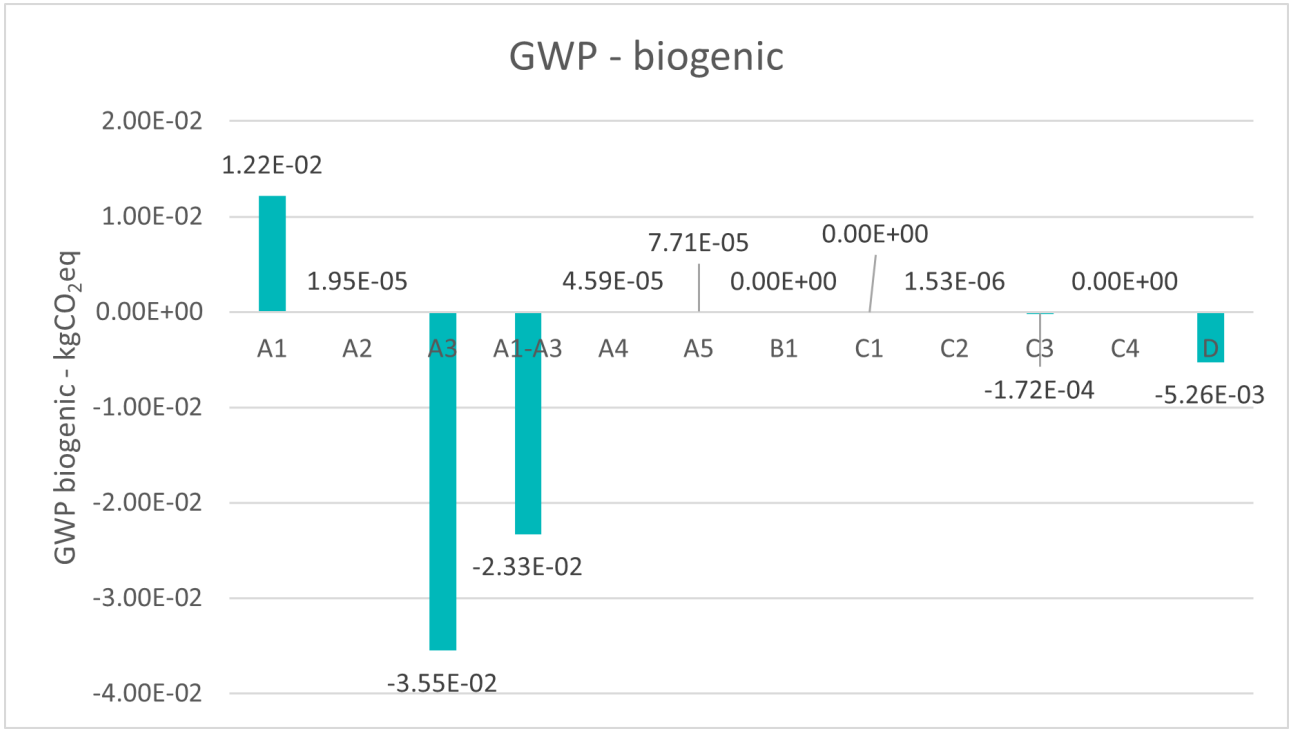


Figure 3

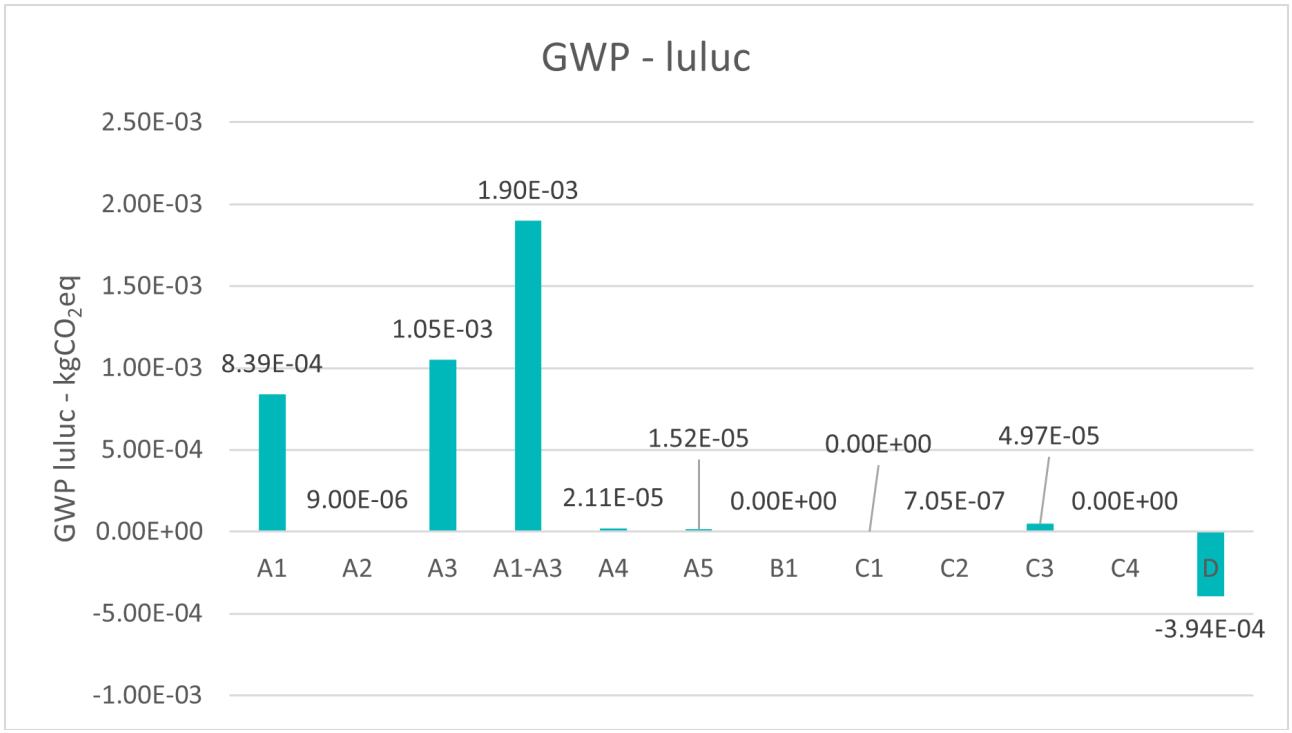


Figure 4

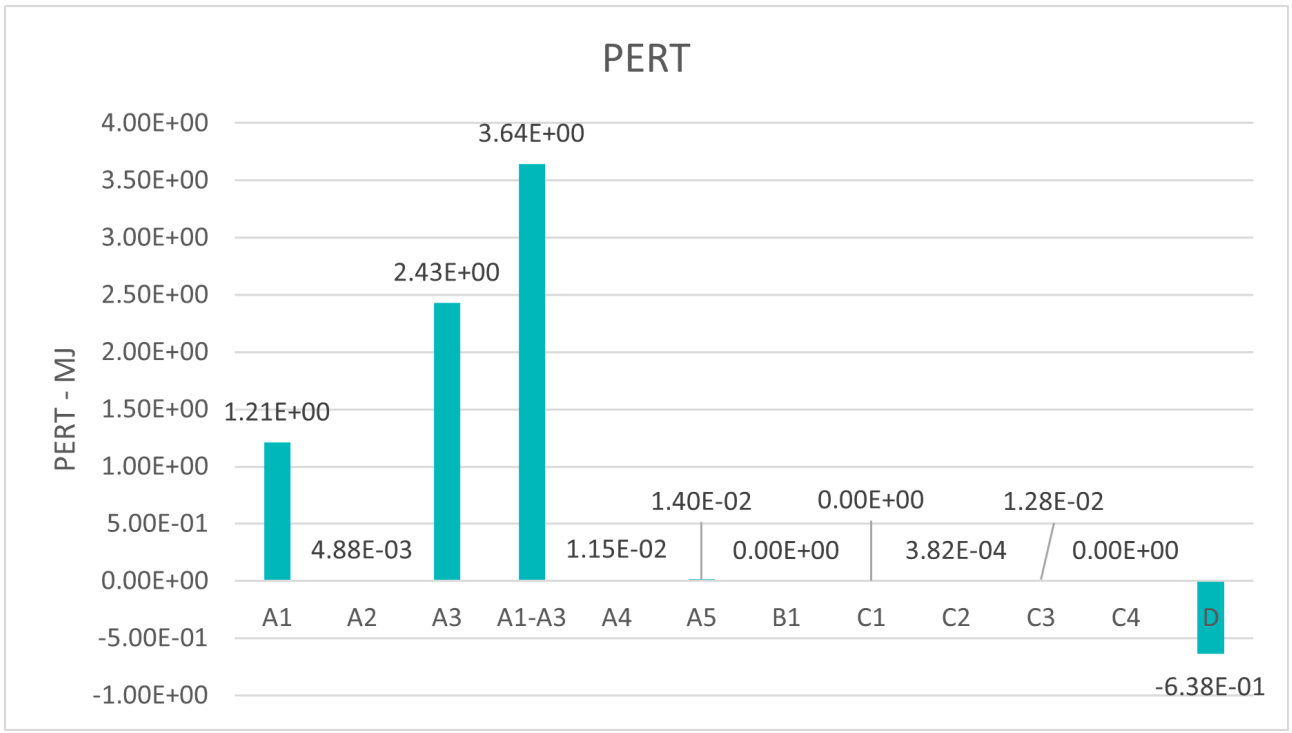


Figure 5

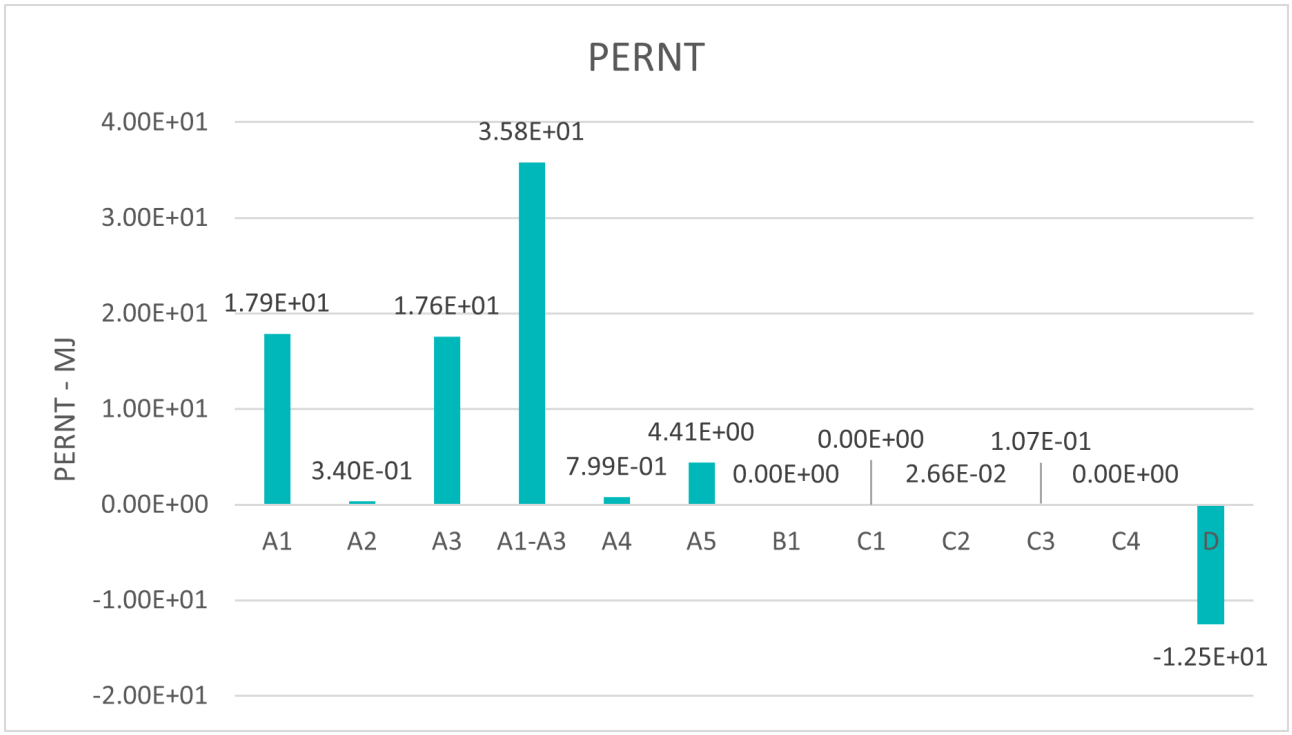


Figure 6

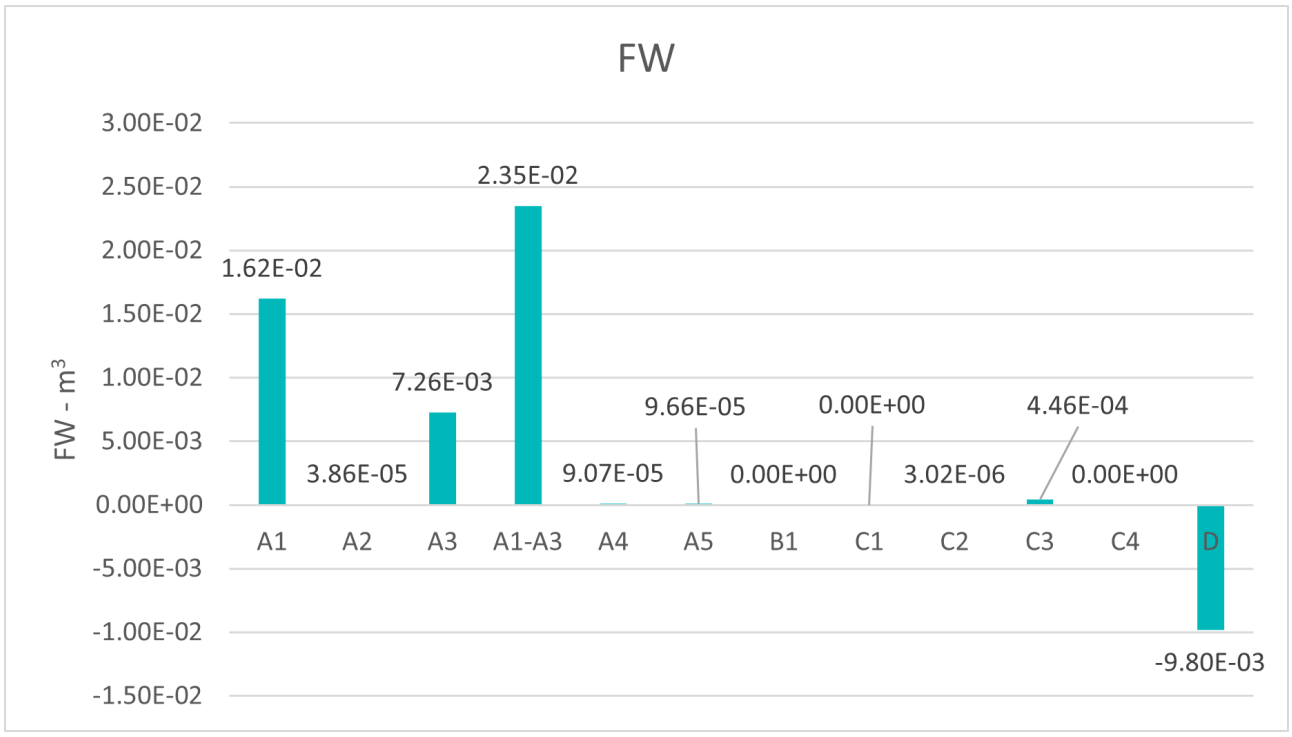


Figure 7

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