Statement of Verification

BREG EN EPD No.: 000110 Issue 03

This is to verify that the

Environmental Product Declaration

provided by:

Sika Ltd

is in accordance with the requirements of:

EN 15804:2012+A1:2013

and

BRE Global Scheme Document SD207

This declaration is for:

SikaProof P

Company Address

Watchmead
Welwyn Garden City
AL7 1BQ

Signed for BRE Global Ltd

Emma Baker
Operator

14 April 2023
Date of this Issue

17 March 2016
Date of First Issue

15 March 2025
Expiry Date

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Environmental Product Declaration

EPD Number: 000110

General Information

EPD Programme Operator	Applicable Product Category Rules
BRE Global Watford, Herts WD25 9XX United Kingdom	BRE Environmental Profiles 2013 Product Category Rules for Type III environmental product declaration of construction products to EN 15804:2012+A1:2013
Commissioner of LCA study	**LCA consultant/Tool**
Sika Ltd Watchmead Welwyn Garden City AL7 1BQ United Kingdom	Sika Services AG Tüffenwies 16 8048 Zurich Switzerland
Declared/Functional Unit	**Applicability/Coverage**
1 m^2 of SikaProof P waterproofing system	Product Average.
EPD Type	**Background database**
Cradle to Grave	ecoinvent and GaBi

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+A1:2013. 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+A1:2013 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)

Sika Manufacturing CH-Sarnen
Industriestrasse
6060 Sarnen
Switzerland

Construction Product:

Product Description

SikaProof P is a cold- and post-applied, self-adhesive, fully bonded composite sheet membrane waterproofing system based on high flexible FPO membrane. SikaProof P is available in 1 m wide and 1.2 mm thickness (SikaProof P-12).

Technical Information

Property	Value, Unit
Visual defects as per EN 1850-2	Pass
Straightness as per EN 1848-2	≤ 50 mm / 10m
Resistance to impact as per EN12691	≥ 200 mm
Resistance to static load as per EN-12730 (Method B, 24h/20kg)	≥ 20 kg
Elongation (machine direction) as per EN-12311-2	≥ 350%
Elongation (cross direction) as per EN12311-2	≥ 350%
Tensile strength (machine direction) as per EN 12311-2	≥ 6.0 N/mm^2
Tensile strength (cross direction) as per EN 12311-2	≥ 6.0 N/mm^2
Resistance to tearing (nail shank) (machine direction) as per EN 12310-1	≥200 N
Resistance to tearing (nail shank) (cross direction) as per EN 12310-1	≥ 200N
Joint sheer resistance as per EN 12317-2	≥ 125 N/50mm
Water vapour transmission as per EN 1931	0.50 g/m2x24h
Reaction to fire as per EN13501-1:2000	Class E

Main Product Contents

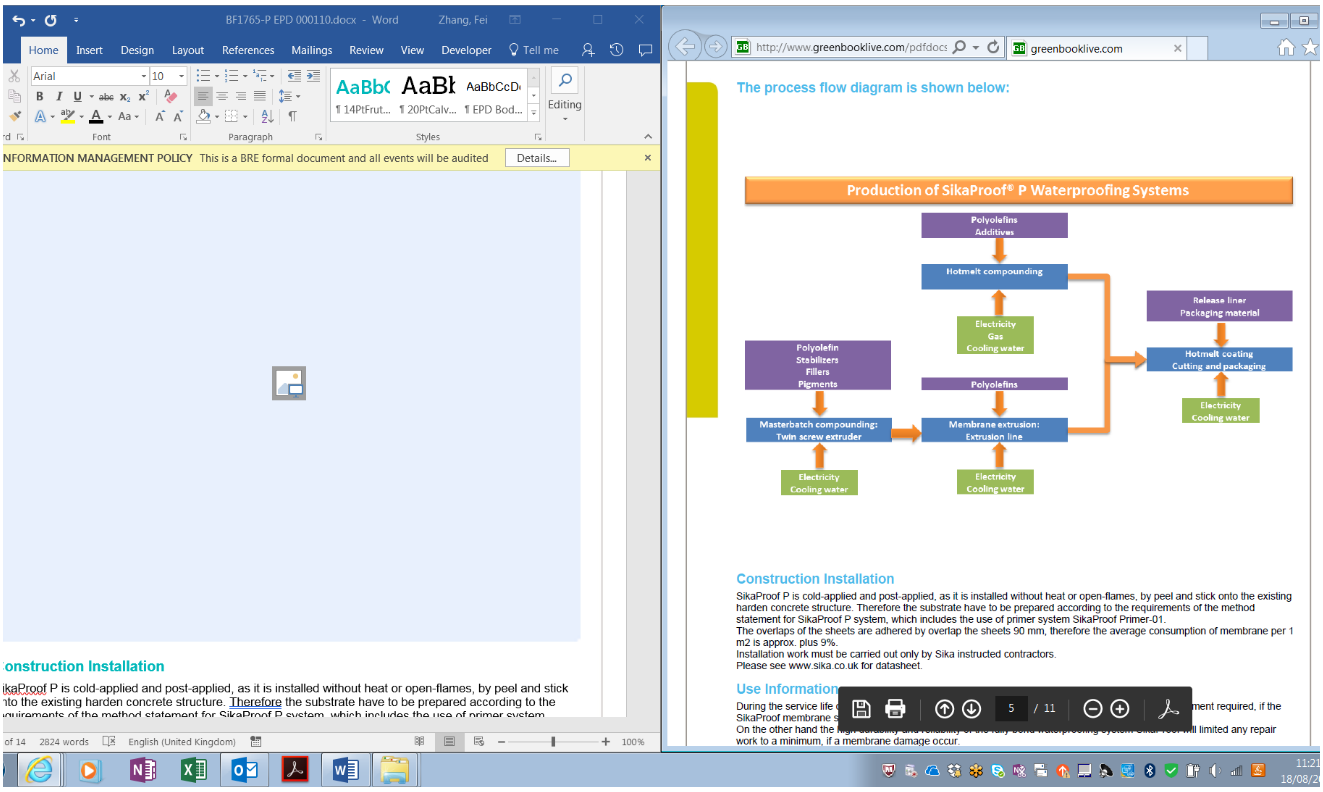
Material/Chemical Input	%
Thermoplastic polyolefins	35 – 50
Stabilizers (UV/heat)	0 – 1
Pigments	0 – 1
Fillers	5 – 10
Sealant adhesive	40 –50

Manufacturing Process

A master batch is compounded on an extruder using a small part of the polymer and all powdery ingredients as stabilizers, fillers and colours. This master batch is pelletized and blended in line with additional polymers and extruded into the membrane.

Line start-up waste and edge trim are inline processed and fed to the extruder again. The membrane is wound to master rolls. The membrane is inline coated with hotmelt sealant and protected with a release liner. Finally, the edge is trimmed, the membrane wound to contractor rolls, single-roll packaged and palletized.

Process flow diagram



Construction Installation

SikaProof P is cold-applied and post-applied, as it is installed without heat or open-flames, by peeling and sticking onto the existing harden concrete structure. Therefore the substrate has to be prepared according to the requirements of the method statement for SikaProof P system, which includes the use of primer system

SikaProof Primer-01. The overlaps of the sheets are adhered by overlap the sheets 90 mm, therefore the average consumption of membrane per 1 m^2 is approx. plus 9%.
Installation work must be carried out only by Sika instructed contractors.
Please see www.sika.co.uk for datasheet.

Use Information

During the service life of the building there is no ordinary maintenance, repair/refurbishment or replacement required, if the SikaProof membrane system is correctly and properly applied.
On the other hand the high durability and reliability of the fully bond waterproofing system SikaProof will limit any repair work to a minimum, if membrane damage occurs.
The fully bond characteristic will prevent any lateral water underflow of the membrane in the event of any leakage. Therefore, no scenario for repair work is defined.

Reference Service Life

The reference service life of SikaProof A is as stated by the BBA Agrément Certificate 13/5075 for the life of the structure in which they have been incorporated. See BBA for details. SikaProof P-12 membrane is made of the same material and will provide an effective barrier to the transmission of water and water vapour for the life of the structure. Therefore a 60-year building service life can be assumed.

End of Life

At the end of its service life the building is demolished, and as the SikaProof systems are attached to the concrete it is generally taken to landfill. The demolition process concerns mainly the concrete structure of which the SikaProof system is a minor part. Therefore, for this stage no other steps are considered necessary except for the transportation to landfill and landfilling.

Life Cycle Assessment Calculation Rules

Declared / Functional unit description

1 m^2 of SikaProof P waterproofing system for a reference service life of 60 years.

System boundary

In accordance with the modular approach as defined in EN 15804, this cradle to grave EPD includes the product stage (A1-A3), construction process stage (A4-A5), use stage (B1-B7) and end-of-life stage (C1-C4).

Data sources, quality and allocation

The primary data provided by Sika derive from the plant at Sarnen, Switzerland for 2013. Background LCI datasets are taken from the databases of GaBi software and ecoinvent Version 3.1. All datasets are less than 10 years old. Production waste that was reclaimed and reused internally was simulated as closed-loop recycling in Modules A1-A3 .Benefits from incineration of product loses and for the disposal of packaging are credited in Module D; this also applies to the reuse of wooden pallets.

Cut-off criteria

All data was taken into consideration (recipe constituents, thermal energy used, electricity used). Transportation was considered for all inputs and outputs. The manufacturing of the production machines and systems and associated infrastructure were not taken into account in the LCA.

LCA Results

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

Parameters describing environmental impacts									
			GWP	ODP	AP	EP	POCP	ADPE	ADPF
			kg CO_2 equiv.	kg CFC 11 equiv.	kg SO_2 equiv.	kg $(PO_4)^{3-}$ equiv.	kg C_2H_4 equiv.	kg Sb equiv.	MJ, net calorific value.
Product stage	Raw material supply	A1	AGG	AGG	AGG	AGG	AGG	AGG	AGG
	Transport	A2	AGG	AGG	AGG	AGG	AGG	AGG	AGG
	Manufacturing	A3	AGG	AGG	AGG	AGG	AGG	AGG	AGG
	Total (of product stage)	A1-3	3.67	8.17E-09	0.00937	0.00189	0.00147	2.25E-063	113
Construction process stage	Transport	A4	0.0955	3.92E-13	0.000471	0.000118	5.11E-05	3.74E-09	1.32
	Construction	A5	1.60	6.85E-09	0.00209	0.000402	0.0465	5.35E-07	24.2
Use stage	Use	B1	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Maintenance	B2	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Repair	B3	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Replacement	B4	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Refurbishment	B5	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Operational energy use	B6	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Operational water use	B7	0.00	0.00	0.00	0.00	0.00	0.00	0.00
End of life	Deconstruction, demolition	C1	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Transport	C2	0.0227	0.00	0.000101	2.60E-05	1.02E-05	0.00	0.00
	Waste processing	C3	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Disposal	C4	0.0252	4.03E-13	0.000153	2.10E-05	1.43E-05	9.36E-09	0.329
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	-0.363	-1.86E-09	-0.0013	-0.00081	-1.24E-04	-1.11E-07	-6.54

GWP = Global Warming Potential;
ODP = Ozone Depletion Potential;
AP = Acidification Potential for Soil and Water;
EP = Eutrophication Potential;
POCP = Formation potential of tropospheric Ozone;
ADPE = Abiotic Depletion Potential – Elements;
ADPF = Abiotic Depletion Potential – Fossil Fuels;

LCA Results (continued)

Parameters describing resource use, primary energy			PERE	PERM	PERT	PENRE	PENRM	PENRT
			MJ	MJ	MJ	MJ	MJ	MJ
Product stage	Raw material supply	A1	AGG	AGG	AGG	AGG	AGG	AGG
	Transport	A2	AGG	AGG	AGG	AGG	AGG	AGG
	Manufacturing	A3	AGG	AGG	AGG	AGG	AGG	AGG
	Total (of product stage)	A1-3	3.24	3.82	7.06	63.6	53.5	117
Construction process stage	Transport	A4	0.00	0.00	0.0735	0.00	0.00	1.32
	Construction	A5	0.356	0.421	0.911	7.00	5.88	24.9
Use stage	Use	B1	0.00	0.00	0.00	0.00	0.00	0.00
	Maintenance	B2	0.00	0.00	0.00	0.00	0.00	0.00
	Repair	B3	0.00	0.00	0.00	0.00	0.00	0.00
	Replacement	B4	0.00	0.00	0.00	0.00	0.00	0.00
	Refurbishment	B5	0.00	0.00	0.00	0.00	0.00	0.00
	Operational energy use	B6	0.00	0.00	0.00	0.00	0.00	0.00
	Operational water use	B7	0.00	0.00	0.00	0.00	0.00	0.00
End of life	Deconstruction, demolition	C1	0.00	0.00	0.00	0.00	0.00	0.00
	Transport	C2	0.00	0.00	0.00	0.00	0.00	0.00
	Waste processing	C3	0.00	0.00	0.00	0.00	0.00	0.00
	Disposal	C4	0.00	0.00	0.0337	0.00	0.00	0.342
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	0.00	0.00	-2.64	0.00	0.00	-7.96

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)

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	AGG	AGG	AGG	AGG
	Transport	A2	AGG	AGG	AGG	AGG
	Manufacturing	A3	AGG	AGG	AGG	AGG
	Total (of product stage)	A1-3	0.00	0.00	0.00	0.107
Construction process stage	Transport	A4	0.00	0.00	0.00	0.000129
	Construction	A5	0.00	0.00	0.00	0.108
Use stage	Use	B1	0.00	0.00	0.00	0.00
	Maintenance	B2	0.00	0.00	0.00	0.00
	Repair	B3	0.00	0.00	0.00	0.00
	Replacement	B4	0.00	0.00	0.00	0.00
	Refurbishment	B5	0.00	0.00	0.00	0.00
	Operational energy use	B6	0.00	0.00	0.00	0.00
	Operational water use	B7	0.00	0.00	0.00	0.00
End of life	Deconstruction, demolition	C1	0.00	0.00	0.00	0.00
	Transport	C2	0.00	0.00	0.00	0.00
	Waste processing	C3	0.00	0.00	0.00	0.00
	Disposal	C4	0.00	0.00	0.00	6.48E-05
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	0.00	0.00	0.00	-0.0478

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)

Other environmental information describing waste categories			HWD	NHWD	RWD
			kg	kg	kg
Product stage	Raw material supply	A1	AGG	AGG	AGG
	Transport	A2	AGG	AGG	AGG
	Manufacturing	A3	AGG	AGG	AGG
	Total (of product stage)	A1-3	0.000148	0.049	0.0016
Construction process stage	Transport	A4	6.25E-07	0.000187	1.80E-06
	Construction	A5	1.68E-05	0.0137	0.000228
Use stage	Use	B1	0.00	0.00	0.00
	Maintenance	B2	0.00	0.00	0.00
	Repair	B3	0.00	0.00	0.00
	Replacement	B4	0.00	0.00	0.00
	Refurbishment	B5	0.00	0.00	0.00
	Operational energy use	B6	0.00	0.00	0.00
	Operational water use	B7	0.00	0.00	0.00
End of life	Deconstruction, demolition	C1	0.00	0.00	0.00
	Transport	C2	0.00	0.00	0.00
	Waste processing	C3	0.00	0.00	0.00
	Disposal	C4	1.06E-07	1.56	5.45E-06
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	-2.22E-06	-0.0023	-5.56E-04

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

LCA Results (continued)

Other environmental information describing output flows – at end of life			CRU	MFR	MER	EE
			kg	kg	kg	MJ per energy carrier
Product stage	Raw material supply	A1	AGG	AGG	AGG	AGG
	Transport	A2	AGG	AGG	AGG	AGG
	Manufacturing	A3	AGG	AGG	AGG	AGG
	Total (of product stage)	A1-3	0.00	0.00	0.00	0.00
Construction process stage	Transport	A4	0.00	0.00	0.00	0.00
	Construction	A5	0.00	0.00	0.00	0.699
Use stage	Use	B1	0.00	0.00	0.00	0.00
	Maintenance	B2	0.00	0.00	0.00	0.00
	Repair	B3	0.00	0.00	0.00	0.00
	Replacement	B4	0.00	0.00	0.00	0.00
	Refurbishment	B5	0.00	0.00	0.00	0.00
	Operational energy use	B6	0.00	0.00	0.00	0.00
	Operational water use	B7	0.00	0.00	0.00	0.00
End of life	Deconstruction, demolition	C1	0.00	0.00	0.00	0.00
	Transport	C2	0.00	0.00	0.00	0.00
	Waste processing	C3	0.00	0.00	0.00	0.00
	Disposal	C4	0.00	0.00	0.00	0.00
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	0.00	0.00	0.00	0.00

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	Fuel Consumption (truck)	L/km	0.000034
	Distance	km	915
	Capacity Utilisation	%	85
	Density of Product	kg/m^3	1000
A5 – Installation of the building	Ancillary materials for installation - Overlap	%	10
	Ancillary materials for installation - Primer	kg/m^2	0.2
	Waste materials from installation Wastage - Losses	%	1
	Direct emissions to air, soil and water – VOC	kg/m^2	0.1
B2 – Maintenance	Maintenance process description or source of information – None necessary		
B3 – Repair	Repair process description or source of information – None necessary		
B4 – Replacement	Replacement cycle – None necessary		
B5 – Refurbishment	Refurbishment process description or source of information – None necessary		
C1, C3 and C4 – End-of-life	Waste for final disposal – Landfill	%	100
C2 – Transport to waste processing	Fuel Consumption (truck)	L/km	0.000034
	Distance	km	250
	Capacity Utilisation	%	85
	Density of Product	kg/m^3	100
D – Reuse/Recovery/Recycling Potential	The benefits from incineration of waste produced during installation are credited in Module D as avoided generation of electricity and thermal energy, since in modern incineration plants the energy of combustion is used to produce power and thermal energy. The partial reuse of pallets from packaging is also included in Module D as avoided production of new pallets.		

Summary, comments and additional information

Interpretation

The following chart (Figure 1_ shows the relative contributions of the different modules to the various environmental impact categories and to primary energy use in a dominance analysis. It is clear that most impacts come from Module A1-3, though the installation of the system (A5) also contributes, due to the impacts from the primer and its application (the VOC emissions are visible for POCP - Photochemical Ozone Creation Potential), and due to the impacts from losses and overlap and waste disposal as well. For this reason, the Product Stage is examined more closely in the following interpretation.
More than 40% of the impacts come from the membrane formulation, except for the total of the use of renewable primary energy resources - PERT (where 63% is from packaging due to the use of carton and wood), EP (Eutrophication Potential), where packaging contributes with 50%, and ODP (Ozone Depletion Potential), to which the hotmelt sealant is the greatest contributor (70%). The hotmelt sealant has a similar contribution as the membrane formulation (around 40%) to ADPF (Abiotic Depletion Potential - Fossil Fuels), POCP and the total use of non-renewable primary energy resources -PENRT. The production processes (mainly the Swiss energy inputs) contribute mostly to GWP (Global Warming Potential) with 7%, and to PERT (13%).
Within the membrane's formulation, the main contributor to the impacts is the polymer, which also represents the greatest part of the raw materials, with at least 90%. The impacts from the other raw materials (fillers, pigments and stabilizers) are much lower.

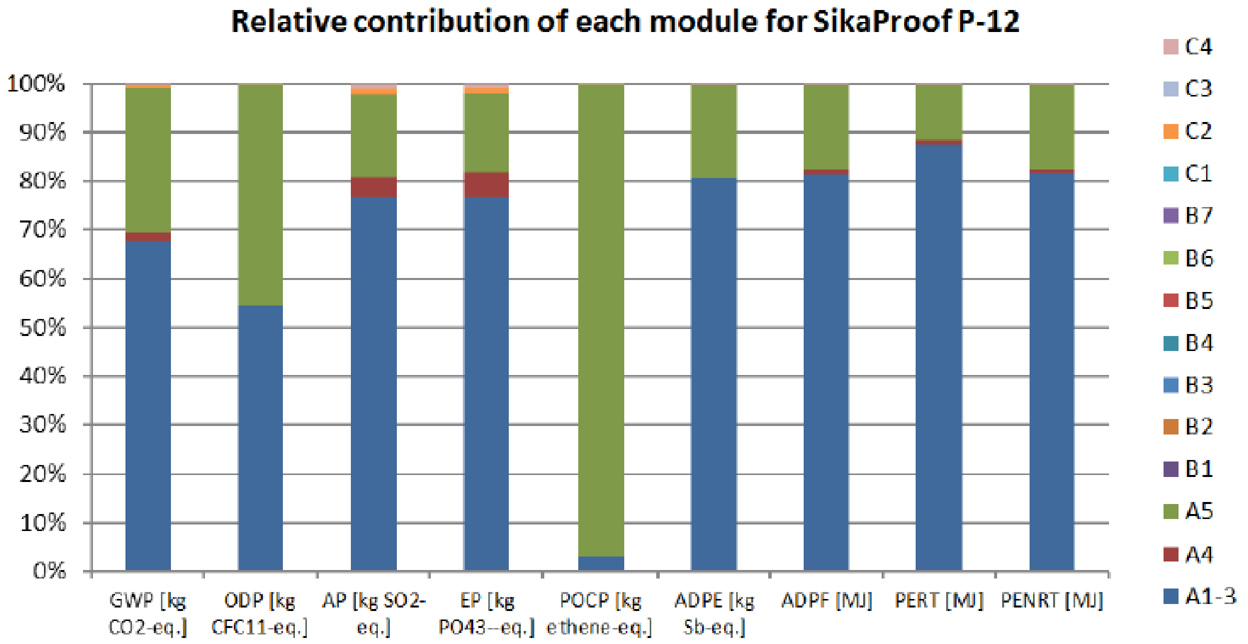


Figure 1

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