

Statement of Verification

BREG EN EPD No.: 000543

Issue 01

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



is in accordance with the requirements of:
EN 15804:2012+A2:2019
and
BRE Global Scheme Document SD207

This declaration is for:
1 kg packaged SikaGrout®-800

Company Address

Sika Services AG
Tueffenwies 16
Zurich
8048
Switzerland

BUILDING TRUST



Emma Baker
Operator

29 January 2024
Date of this Issue

29 January 2024
Date of First Issue

28 January 2029
Expiry Date



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Environmental Product Declaration

EPD Number: 000543

General Information

EPD Programme Operator	Applicable Product Category Rules
BRE Global Watford, Herts WD25 9XX United Kingdom	BRE 2020 Product Category Rules (PN 514 Rev 3.0) for Type III environmental product declaration of construction products to EN 15804:2012+A2:2019.
Commissioner of LCA study	LCA consultant/Tool
Sika Services AG Tueffenwies 16 Zurich 8048 Switzerland	Sika Technology AG Tueffenwies 16 Zurich 8048 Switzerland www.sika.com/sustainability
Declared Unit	Applicability/Coverage
1 kg packaged SikaGrout®-800.	Product Specific.
EPD Type	Background database
Cradle to Gate with options	Sphera Managed LCA Content
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: Roger Connick	
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
<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 checked="" type="checkbox"/>								

Note: Ticks indicate the Information Modules declared.

Manufacturing site(s)

The environmental product declaration is for 1 kg of SikaGrout®-800 produced by Sika Österreich GmbH at following manufacturing facilities:

Sika Österreich GmbH
 Bingser Dorfstraße 23
 Postfach 168
 6700 Bludenz
 Austria

Construction Product

Product Description

SikaGrout®-800 is a 1-part, cementitious, high performance, shrinkage compensated, sulphate resistant grout. It contains recycled materials (supplementary cementitious materials). SikaGrout®-800 can be applied in layers with thickness between 6 and 300 mm, with a fresh density of 2.25 kg/L.

Technical Information

Property	Value, Unit	Standard
Compressive strength after 28 days	~80 MPa	EN 12190
Modulus of elasticity in compression	≥20 GPa	EN 13412
Tensile strength in flexure after 28 days	~10 MPa	EN 12190
Tensile Adhesion Strength	≥ 2 MPa	EN 1542
Shrinkage after 91 days	~700 µm/m	EN 12617-4
Restrained shrinkage/ Expansion	≥ 2 MPa	EN 12617-4
Thermal compatibility, part 1 Freeze-Thaw	≥ 2 MPa	EN 13687-1
Reaction to fire	Euro class A1	EN 1504-3
Carbonation resistance	dk ≤ control concrete MC (0.45)	EN 13295
Pull-out strength	Displacement ≤0.6 mm at load of 75 kN	EN 1881

Further information about the product including product data sheet can be accessed via www.sika.com



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Main Product Contents

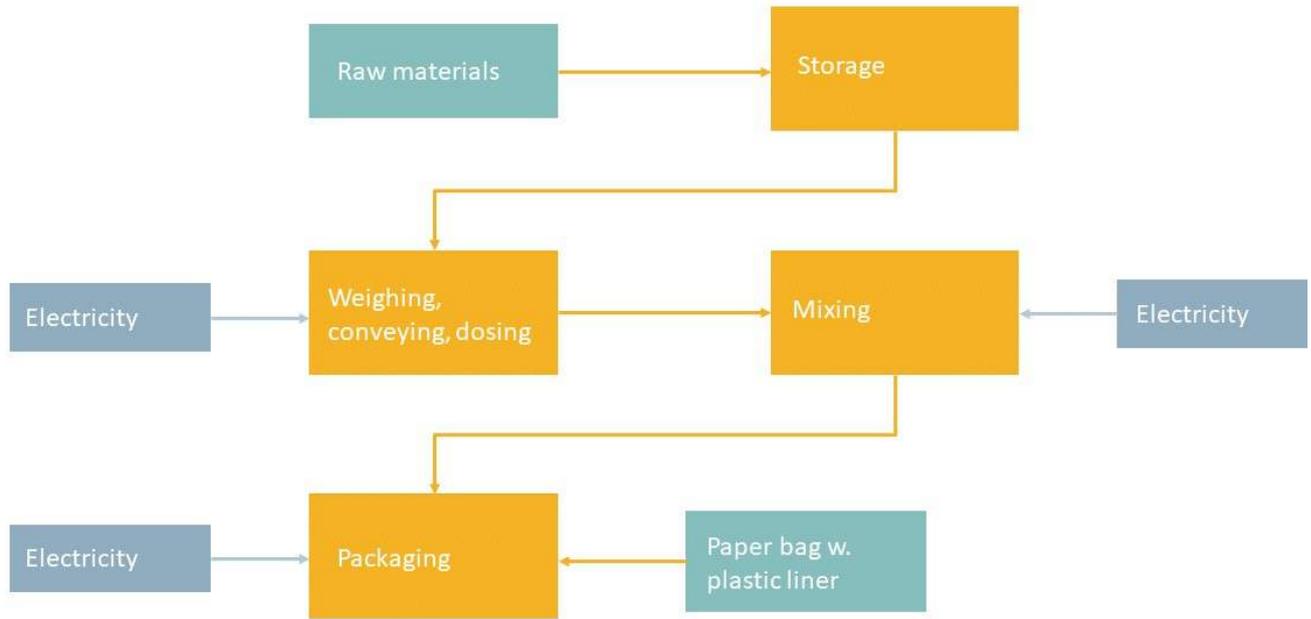
Material/Chemical Input	%
Hydraulic Binders	20 - 25
Functional Fillers	55 - 65
Supplementary cementitious material (SCM) Reactive Binders	10 – 20
Polymers and Additives	0 – 1

Manufacturing Process

SikaGrout®-800 is manufactured in a conventional mortar plant in Bludenz, Austria.

The raw materials are stored after the quality control testing is passed. The majority of the raw materials are dosed automatically into the mixers after the weighing and dosing phase. If resulting material does not pass the quality test, it will be reworked and sent back to the mixing station. After confirming expected results, it is sent to the packaging station.

Process flow diagram



Construction Installation

SikaGrout®-800 is a cementitious high-performance grout that is poured or pumped over the prepared substrate after a proper mixing with water. The material can be hand poured or machine pumped depending on the volume and area to be grouted. The consumption of the material will depend on the roughness and quality of the substrate, with an average of 45 kg of mixed grout per 10 mm thickness per m². The product is only intended for professional use. Please refer to the product data sheet and method statement for detailed instructions.

Use Information

During the service life of the building or infrastructure there is no extraordinary maintenance, repair/refurbishment or replacement required, if SikaGrout®-800 is correctly and properly applied.

The high durability and reliability of the high-performance cementitious grout SikaGrout®-800 will limit any repair work to a minimum.

End of Life

At the end of its service life the building is demolished and as the SikaGrout®-800 is attached to the concrete it is generally taken to landfill. The demolition process concerns mainly the concrete structure of which SikaGrout®-800 is a minor part.

Life Cycle Assessment Calculation Rules

Declared unit description

1 kg packaged SikaGrout®-800.

System boundary

In accordance with the modular approach as defined in EN 15804, this cradle to gate with options EPD includes the product stage (A1-A3), construction process stage (A4-A5), end-of-life stage (C1-C4) and benefits beyond the system boundary (D).

Data sources, quality, and allocation

The primary manufacturing data provided by Sika derive from the plant in Bludenz, Austria for the full year 2022 (January-December). LCI datasets are taken from Sphera Managed LCA Content (MLC) (CUP2023.1) and Ecoinvent version 3.8 (2022). Datasets were chosen based on technical, temporal, and geographical representativeness. No co-product allocation applicable due to single product output of manufacturing process. The electricity consumption was modelled using the dataset "AT: Electricity grid mix" from Sphera MLC CUP2023.1.

Cut-off criteria

All relevant primary data was taken into consideration (product formulation, energy used in manufacturing). Transportation was considered for all inputs and outputs. The manufacturing of capital goods and infrastructure were not considered in the LCA. In Module A5, the application process is cut-off due to negligible impact. Pallet usage for transportation was not considered in the LCA. Cut-offs do not exceed 5% primary energy or mass per life cycle module.

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 CFC11 eq	mol H ⁺ eq	kg (PO ₄) ³⁻ eq			
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	2.75E-01	2.84E-01	-1.04E-02	1.32E-03	5.04E-10	1.32E-03	2.12E-06
Construction process stage	Transport	A4	2.59E-02	2.61E-02	-3.63E-04	2.38E-04	2.25E-15	9.76E-05	9.35E-08
	Construction	A5	2.21E-03	-4.53E-04	2.67E-03	3.47E-07	-1.33E-10	-1.14E-05	-9.28E-11
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
End of life	Deconstruction, demolition	C1	6.12E-04	6.14E-04	-7.89E-06	5.53E-06	5.23E-17	3.06E-06	2.18E-09
	Transport	C2	8.61E-03	8.65E-03	-1.20E-04	7.88E-05	7.45E-16	3.24E-05	3.10E-08
	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	1.46E-02	1.50E-02	-4.99E-04	4.67E-05	3.86E-14	1.07E-04	3.03E-08
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&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	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	1.68E-04	1.57E-03	4.24E-04	1.86E+00	7.18E-08	3.84E-02	1.67E-08
Construction process stage	Transport	A4	4.56E-05	5.11E-04	8.80E-05	3.49E-01	1.65E-09	2.96E-04	5.31E-10
	Construction	A5	-4.52E-07	-4.03E-06	-2.16E-06	-2.70E-02	2.42E-12	5.90E-04	-1.37E-10
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
End of life	Deconstruction, demolition	C1	1.44E-06	1.60E-05	4.04E-06	8.12E-03	3.85E-11	6.88E-06	3.46E-11
	Transport	C2	1.51E-05	1.70E-04	2.92E-05	1.16E-01	5.49E-10	9.81E-05	1.76E-10
	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	2.75E-05	3.03E-04	8.31E-05	2.00E-01	6.95E-10	1.65E-03	1.31E-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	AGG	AGG	AGG	AGG	AGG
	Transport	A2	AGG	AGG	AGG	AGG	AGG
	Manufacturing	A3	AGG	AGG	AGG	AGG	AGG
	Total (of product stage)	A1-3	4.81E-03	1.05E+00	4.76E-11	1.97E-09	1.62E+00
Construction process stage	Transport	A4	6.53E-05	2.43E-01	4.95E-12	3.05E-10	1.46E-01
	Construction	A5	-3.44E-05	2.49E-03	-7.98E-14	3.47E-12	2.13E-04
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
End of life	Deconstruction, demolition	C1	1.52E-06	5.67E-03	1.15E-13	7.08E-12	3.39E-03
	Transport	C2	2.17E-05	8.08E-02	1.64E-12	1.01E-10	4.83E-02
	Waste processing	C3	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Disposal	C4	2.56E-04	1.09E-01	1.68E-11	1.85E-09	5.04E-02
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)

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	5.84E-01	6.23E-02	6.46E-01	1.87E+00	4.98E-03	1.87E+00
Construction process stage	Transport	A4	2.47E-02	0.00E+00	2.47E-02	3.50E-01	0.00E+00	3.50E-01
	Construction	A5	5.74E-02	-6.23E-02	-4.98E-03	4.98E-03	-4.98E-03	0.00E+00
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
End of life	Deconstruction, demolition	C1	5.75E-04	0.00E+00	5.75E-04	8.14E-03	0.00E+00	8.14E-03
	Transport	C2	8.19E-03	0.00E+00	8.19E-03	1.16E-01	0.00E+00	1.16E-01
	Waste processing	C3	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Disposal	C4	3.27E-02	0.00E+00	3.27E-02	2.00E-01	0.00E+00	2.00E-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)

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	0.00E+00	0.00E+00	0.00E+00	1.21E-03
Construction process stage	Transport	A4	0.00E+00	0.00E+00	0.00E+00	2.72E-05
	Construction	A5	0.00E+00	0.00E+00	0.00E+00	0.00E+00
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
End of life	Deconstruction, demolition	C1	0.00E+00	0.00E+00	0.00E+00	6.33E-07
	Transport	C2	0.00E+00	0.00E+00	0.00E+00	9.03E-06
	Waste processing	C3	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Disposal	C4	0.00E+00	0.00E+00	0.00E+00	5.05E-05
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)

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	9.08E-10	1.25E-02	3.66E-05
Construction process stage	Transport	A4	1.29E-12	5.04E-05	4.52E-07
	Construction	A5	1.89E-15	7.36E-08	-2.17E-06
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
End of life	Deconstruction, demolition	C1	3.01E-14	1.17E-06	1.05E-08
	Transport	C2	4.29E-13	1.67E-05	1.50E-07
	Waste processing	C3	0.00E+00	0.00E+00	0.00E+00
	Disposal	C4	4.31E-12	1.00E+00	2.25E-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)

			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	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	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.75E-03
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	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
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
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	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	Transport of Sika SikaGrout®-800 to the building site		
	Diesel / Euro 5 Truck	L/100 km	0.0028
	Distance	km	100
	Capacity utilisation (incl. empty returns)	%	61
	Bulk density of transported products	kg/m ³	1.3
A5 – Construction installation	Treatment of packaging material (incineration)	%	100
C1 to C4 End of life,	Dismantling and transport of SikaGrout®-800 to final disposal		
	Transport of the product to site of disposal	km	50
	Diesel	L/100 km	0.0028
	Capacity utilization	%	61
	Waste for final disposal to landfill	%	100
Module D	No benefits beyond the system boundary are considered.		

Summary, comments and additional information

Interpretation

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.

As can be seen from the results, the product stage (Modules A1-A3) contributes the most significantly to all environmental impact categories and primary energy use. Examining the results for module A1-3 in further detail, the raw materials involved in the production of SikaGrout®-800 represent at least 80% in all impact categories except GWP biogenic. For GWP biogenic, the paper in the packaging bag has the most significant contribution.

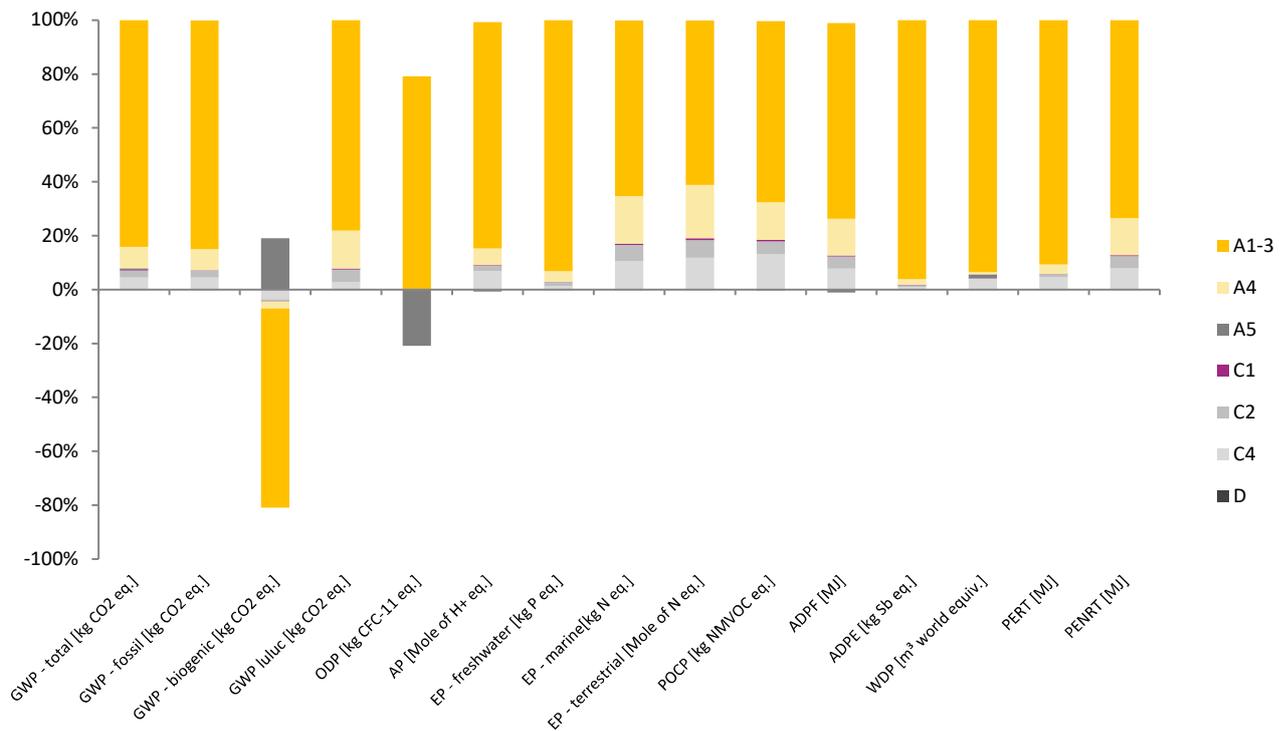


Figure 1: Relative contribution of the modules to the impact categories for SikaGrout®-800

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