Statement of Verification

BREG EN EPD No.: 000574 Issue 01

This is to verify that the

Environmental Product Declaration

provided by:

Addagrip Terraco Ltd

BRE Global Verified EPD

is in accordance with the requirements of:

EN 15804:2012+A2:2019

and

BRE Global Scheme Document SD207

This declaration is for:

1 m^2 of Addagrip Resin Bound Decorative Surfacing Systems (Addaset, Addabound, Terrabound, Terrabase, Stonebound HB NUV, and Stonebound UV)

Company Address

Addagrip Terraco Ltd
Addagrip House
Bell Lane Industrial Estate
Uckfield
East Sussex
TN22 1QL

addagrip™
A member of the Terraco Group

Signed for BRE Global Ltd	Emma Baker Operator	05 April 2024 Date of this Issue
05 April 2024 Date of First Issue		04 April 2029 Expiry Date

BRE Global Verified EPD

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

ECO PLATFORM EPD VERIFIED

Environmental Product Declaration

EPD Number: 000574

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+A2 PN 514 Rev 3.1
Commissioner of LCA study	**LCA consultant/Tool**
Addagrip Terraco Ltd Addagrip House Bell Lane Industrial Estate Uckfield East Sussex TN22 1QL	Bala Subramanian BRE LINA A2
Declared/Functional Unit	**Applicability/Coverage**
1 m2 of Addagrip Resin Bound Decorative Surfacing Systems (Addaset, Addabound, Terrabound, Terrabase, Stonebound HB NUV, and Stonebound UV)	Product Average.
EPD Type	**Background database**
Cradle to Gate with Module C and D	ecoinvent

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: Pat Hermon
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)

Addagrip Terraco Ltd
Addagrip House
Bell Lane Industrial Estate
Uckfield
East Sussex
TN22 1QL

Construction Product:

Product Description

Addagrip Resin Bound Decorative Surfacing Systems (Addaset, Addabound, Terrabound, Terrabase, Stonebound HB NUV, and Stonebound UV) are resin bound surface course systems comprising a two-component, solvent-free, cold applied polyurethane binder, and fine and coarse 3 mm, 6 mm, or 10 mm sized aggregates. They provide a smooth, hard wearing, and low maintenance porous/semi porous surface using a range of aggregates. The finished surface is a seamless bound paving system which is flexible and resistant to cracking and can be applied onto asphalt and concrete or other stable substrates.

Resin Bound decorative surfacing system is available in six different types such as Addaset, Addabound, Terrabound, Terrabase, Stonebound HB NUV, and Stonebound UV there are no significant differences in the composition of all six products, therefore the EPD is derived from the Terrabase product data as it has the highest weight per m^2 which is 59.35 kg/m^2 which includes grid and terram.

Product	Addaset	Addabound	Terrabound	Terrabase	Stonebound HB NUV,	Stonebound UV
Kg/m^2	57.40	57.69	57.40	59.35	57.26	57.26

Technical Information

Property	Value, Unit
Resistance to permanent deformation	The 3 mm, 6 mm and 10 mm aggregate based systems have a resistance to rut rate and rut depth that is classified as Type 2 in accordance with PD 6691:2015, Appendix D, Table D.2.

Property	Value, Unit
Tensile bond strength	Laboratory testing to TRL Report 176, Appendix J confirmed satisfactory tensile bond strength to both asphalt and concrete when installed in accordance with the provisions of BBA Certificate 16/5288.
Erosion index	Laboratory testing in accordance with the BBA HAPAS Guidelines for Assessment and Certification of High Friction Surfacing for scuffing at 45°C resulted in an erosion index of less than 3.0.
Chemical resistance	When tested in accordance with BS 903-26:1995, ISO 48: 1994, the systems have a good resistance to chemicals likely to be spilt on road surfaces or parking areas, such as oil or petrol.
Skid and slip resistance	The initial skid resistance (prior to trafficking) measured in accordance with TRL Report 176, Appendix E (pendulum test using sliders applicable to both vehicular and foot traffic), indicates that initial measurements of greater than 50 can be achieved. The systems are considered suitable in applications where this is required.
Surface texture	The initial texture depth measured in accordance with BS EN 13036-1: 2010 indicates that texture depth is dependent on the aggregate size of the mix. The texture depth for 3 mm aggregate is ≥0.7 mm, for 6 mm is ≥1.2 mm, and for 10 mm is ≥1.5 mm.
Rainwater drainage	Results of vertical and horizontal permeability tests conducted in accordance with BS EN 12697-19:2004 indicate that the water will drain through the surface course into the pavement substrate thereby reducing or eliminating surface ponding. Vertical and horizontal flow rate is affected by the aggregate size used in the mix.

Note: Technical properties of all products assessed within this average EPD

Main Product Contents

Material/Chemical Input	%
Aggregates	93
Isocyanate	2
Polyol	3

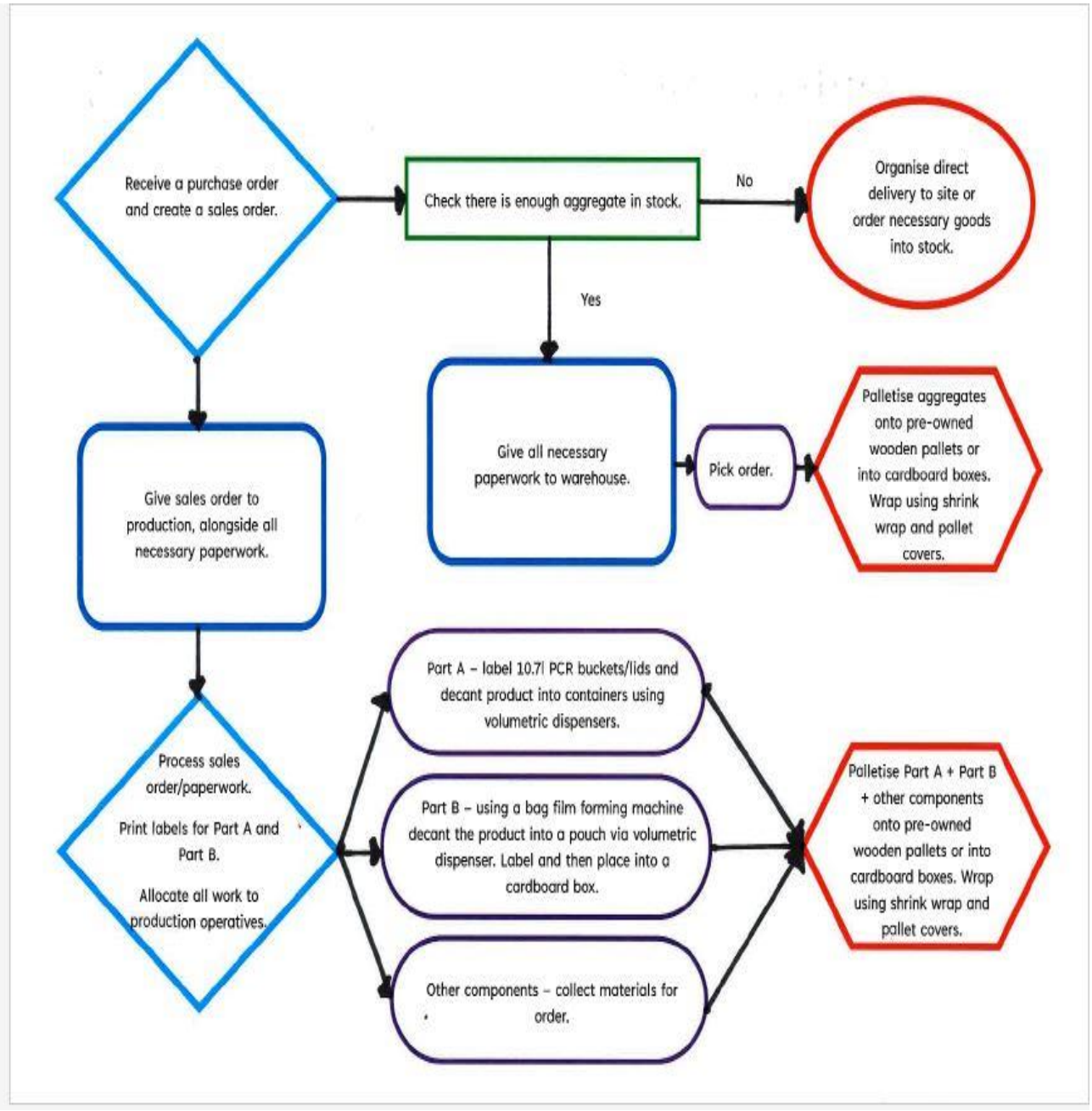
Material/Chemical Input	%
Others	2

Note: Material composition of all products assessed within this average EPD.

Manufacturing Process

Aggregates are bagged at suppliers and delivered directly to customer" to now say "Aggregates are bagged at suppliers and either delivered directly to customer or via our warehouse storage facility.

Process flow diagram



End of Life

At the end of its life, the Addagrip resin bound will be removed from the deconstruction unit using power tools and they will be transported to the pre-processing unit. At the pre-processing sector, the recovered resin bound surfacing system will be crushed into smaller pieces and will be used as filling material or replace the virgin aggregates. The energy attributed to deconstructing the resin compared to the overall demolition will be effectively negligible.

Life Cycle Assessment Calculation Rules

Declared unit description.

1 m2 of Addagrip Resin Bound Decorative Surfacing Systems (Addaset, Addabound, Terrabound, Terrabase, Stonebound HB NUV, and Stonebound UV).

System boundary

This is a cradle-to-gate 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 2021 Product Category Rules (PN 514 Rev 3.1).

Data sources, quality, and allocation

Manufacturer-specific data from Addagrip Terraco Ltd covering a production period of 1 year [01/07/2022 to 31/07/2023] from the Uckfield site has been used for this EPD. There are no significant differences in the composition of all six products, therefore the EPD is derived from the Terrabase product data as it has the highest weight per m^2. Materials, water and energy inputs are based on the Terrabase product production as it has the highest weight per m^2 and was chosen to represent the other products as will have the highest impact. This is because the composition of each product is broadly similar. Energy, water, and waste have been allocated on a mass basis for the Terrabase product. After reviewing the data collection form, it was determined that the mass balance was slightly above the tolerance but within the acceptable range therefore uplift to raw materials has been made. 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 EN15804 A2.

ISO14044 guidance. **Quality Level**	**Geographical representativeness**	**Technical representativeness**	**Time representativeness**
Very Good	Data from area under study.	Data from processes and products under study. Same state of technology applied as defined in goal and scope (i.e., identical technology).	n/a
Very Good	n/a	n/a	There is approximately 1-2 years between the Ecoinvent LCI reference year, and the time period for which the LCA was undertaken.

Specific European datasets have been selected from the ecoinvent LCI for this LCA. Manufacturer uses the national grid electricity and on-site solar panel electricity for production, so therefore the national grid electricity dataset and respective solar energy, GB dataset has been used for the LCA modelling (Ecoinvent 3.8). The GWP carbon footprint for using 1 kWh of electricity, GB kWh is 0.239 kgCO2e/kWh and for the UK natural has carbon footprint for using 1 kWh is 0.232 kgCO2eq. In addition to this, the client has onsite solar electricity production; some of the electricity from solar has been used for production and for other commercial usages. In order to confirm that they have submitted the contract with their solar agent and attached with the LCA report. The GWP carbon footprint for using 1kWh of solar electricity is 0.07711 kgCO2e/kWh. The quality level of time representativeness is also Very Good as the background LCI datasets are based on ecoinvent v3.8 which was

compiled in 2021. Therefore, there is less than 5 years between the ecoinvent LCI reference year and the time period for which the LCA was undertaken.

Cut-off criteria

All raw materials and energy input to the manufacturing process have been included, except for direct emissions to air, water, and soil, which are not measured.

LCA Results – Terrabase with the weight per m^2 of 59.35 kg/m^2

(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	1.56E+01	1.53E+01	3.10E-01	5.64E-03	1.16E-06	7.55E-02	3.43E-03
	Transport	A2	3.70E+00	3.69E+00	2.96E-03	1.52E-03	8.49E-07	2.05E-02	2.32E-04
	Manufacturing	A3	-1.69E-01	1.41E+00	-1.58E+00	2.33E-03	7.39E-08	6.17E-03	3.72E-04
	Total (Consumption grid)	A1-3	1.92E+01	2.04E+01	-1.27E+00	9.48E-03	2.08E-06	1.02E-01	4.03E-03
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
80% Recycling, 10% re-use, and 10% Landfill									
End of life	Deconstruction, demolition	C1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Transport	C2	4.94E-01	4.93E-01	4.20E-04	1.94E-04	1.14E-07	2.00E-03	3.18E-05
	Waste processing	C3	-1.45E-01	-1.46E-01	1.81E-04	1.94E-05	-2.86E-08	-1.64E-03	4.19E-06
	Disposal	C4	6.30E-02	6.25E-02	4.81E-04	6.33E-05	1.90E-08	5.27E-04	1.81E-05
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	-4.00E-01	-3.94E-01	-5.10E-03	-5.56E-04	-3.18E-08	-2.54E-03	-2.15E-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	1.90E-02	1.42E-01	5.38E-02	9.97E-05	3.76E+02	1.63E+01	1.60E-06
	Transport	A2	5.82E-03	6.39E-02	1.88E-02	1.24E-05	5.54E+01	2.44E-01	3.08E-07
	Manufacturing	A3	1.36E-03	1.40E-02	7.23E-03	9.78E-06	3.76E+01	1.07E+00	8.56E-08
	Total (Consumption grid)	A1-3	2.62E-02	2.20E-01	7.98E-02	1.22E-04	4.69E+02	1.76E+01	1.99E-06
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
80% Recycling, 10% re-use, and 10% Landfill									
End of life	Deconstruction, demolition	C1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Transport	C2	6.03E-04	6.59E-03	2.02E-03	1.71E-06	7.46E+00	3.36E-02	4.26E-08
	Waste processing	C3	-7.59E-04	-8.33E-03	-2.27E-03	5.62E-08	-1.70E+00	2.47E-02	-4.00E-07
	Disposal	C4	1.82E-04	1.98E-03	5.72E-04	2.04E-07	1.47E+00	6.61E-02	1.06E-08
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	-5.85E-04	-7.04E-03	-1.81E-03	-3.73E-06	-5.80E+00	-7.57E-01	-3.20E-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	9.93E-01	1.02E+03	8.73E-08	1.05E-06	2.24E+01
	Transport	A2	2.83E-01	4.28E+01	1.45E-09	4.43E-08	3.67E+01
	Manufacturing	A3	1.34E-01	1.81E+01	2.48E-09	1.55E-08	1.44E+02
	Total (Consumption grid)	A1-3	1.41E+00	1.08E+03	9.13E-08	1.10E-06	2.03E+02
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
80% Recycling, 10% re-use, and 10% Landfill							
End of life	Deconstruction, demolition	C1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Transport	C2	3.83E-02	5.82E+00	1.88E-10	6.10E-09	5.12E+00
	Waste processing	C3	-6.99E-03	-8.47E-01	-2.90E-11	-5.53E-10	1.42E+00
	Disposal	C4	6.91E-03	1.05E+00	4.50E-11	7.01E-10	3.52E+00
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	-8.98E-02	-6.72E+00	-3.90E-10	-7.05E-09	-5.33E+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	1.55E+01	0.00E+00	1.55E+01	2.47E+02	1.28E+02	3.75E+02
	Transport	A2	7.62E-01	0.00E+00	7.62E-01	5.44E+01	0.00E+00	5.44E+01
	Manufacturing	A3	1.24E+01	1.56E+01	2.80E+01	2.21E+01	1.54E+01	3.75E+01
	Total (Consumption grid)	A1-3	2.86E+01	1.56E+01	4.42E+01	3.23E+02	1.43E+02	4.67E+02
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
80% Recycling, 10% re-use, and 10% Landfill								
End of life	Deconstruction, demolition	C1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Transport	C2	1.05E-01	0.00E+00	1.05E-01	7.32E+00	0.00E+00	7.32E+00
	Waste processing	C3	3.22E-03	0.00E+00	3.22E-03	2.26E+00	0.00E+00	2.26E+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 boundaries	Reuse, recovery, recycling potential	D	-6.36E+00	0.00E+00	-6.36E+00	0.00E+00	0.00E+00	0.00E+00

PERE = Use of renewable primary energy excluding renewable primary energy used as raw materials;
PERM = Use of renewable primary energy resources used as raw materials;
PERT = Total use of renewable primary energy resources;
PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials;
PENRM = Use of non-renewable primary energy resources used as raw materials;
PENRT = Total use of non-renewable primary energy resource

LCA Results (continued)

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

Parameters describing resource use, secondary materials and fuels, use of water						
			SM	RSF	NRSF	FW
			kg	MJ net calorific value	MJ net calorific value	m^3
Product stage	Raw material supply	A1	7.80E-02	0.00E+00	0.00E+00	3.82E-01
	Transport	A2	0.00E+00	0.00E+00	0.00E+00	6.04E-03
	Manufacturing	A3	5.97E-02	6.93E-08	0.00E+00	2.54E-02
	Total (Consumption grid)	A1-3	1.38E-01	6.93E-08	0.00E+00	4.14E-01
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
80% Recycling, 10% re-use, and 10% Landfill						
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	8.31E-04
	Waste processing	C3	1.01E-03	0.00E+00	0.00E+00	5.77E-04
	Disposal	C4	0.00E+00	0.00E+00	0.00E+00	1.55E-03
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	0.00E+00	0.00E+00	0.00E+00	-1.79E-02

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	7.16E-01	1.21E+01	3.62E-04
	Transport	A2	6.17E-02	1.06E+00	3.75E-04
	Manufacturing	A3	6.46E-02	1.72E+00	5.26E-05
	Total (Consumption grid)	A1-3	8.42E-01	1.48E+01	7.90E-04
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
80% Recycling, 10% re-use, and 10% Landfill					
End of life	Deconstruction, demolition	C1	0.00E+00	0.00E+00	0.00E+00
	Transport	C2	8.22E-03	1.46E-01	5.04E-05
	Waste processing	C3	3.83E-03	3.08E-02	1.81E-05
	Disposal	C4	0.00E+00	0.00E+00	0.00E+00
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	-3.34E-02	-1.02E+00	-2.96E-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	1.51E-04	4.67E-07	0.00E+00	0.00E+00	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	8.75E-03	4.33E-09	1.37E-04	0.00E+00	-1.23E-02
	Total (Consumption grid)	A1-3	0.00E+00	8.90E-03	4.71E-07	1.37E-04	0.00E+00	-1.23E-02
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
80% Recycling, 10% re-use, and 10% Landfill								
End of life	Deconstruction, demolition	C1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Transport	C2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Waste processing	C3	0.00E+00	5.76E+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
C1 - Deconstruction	At the end of its life, the Addagrip resin bound will be removed from the deconstruction unit using power tools and it is assumed as 100% of the product is recovered from the deconstruction site and they will be sent to waste processing unit. The energy attributed to deconstructing the resin compared to the overall demolition will be effectively negligible. Hence, no impacts are associated with this module.		
C2 - Transportation	50km by road has been modelled for module C2 as a typical distance from the demolition site to the recycling plant. However, end-users of the EPD can use this information to calculate the impacts of a bespoke transport distance for module C2 if required.		
	Deconstruction unit to pre-processing unit	km	50
	Type of transport - Road transport	Lorry	16-32 ton
C3 – Pre-processing	At the pre-processing sector, the recovered resin bound surfacing system, which consists of sand, gravel, and resins like polyurethane will be crushed into smaller pieces and used as a filler material or to replace the virgin aggregate. During the pre-processing, 80% of the resin-bound aggregates will be recycled, 10% of aggregates will be reused, and the remaining 10% of resins such as cannot be recovered during the waste processing process and will be sent to landfill (BRE EN 15804+A2 PN 514 Rev 3.1). The energy used for the crushing the waste resin bound surface is not included in module C3, it is assumed to be very small and are effectively negligible. 80% of the waste will be recycled = 47.48 kg/m2 10% of the waste will be re-used = 5.935 kg/m2		
C4- Disposal	The recovered resin bound is sent to recycling while a small portion is assumed to be unrecoverable, and they will be ended in landfilling.		
C4- Disposal	Unrecovered waste	kg	5.935
Module D	80% of the recycled aggregates from the pre-processing process will replace the use of the virgin materials to reduce the environmental impacts of the virgin materials.		

End-user table:

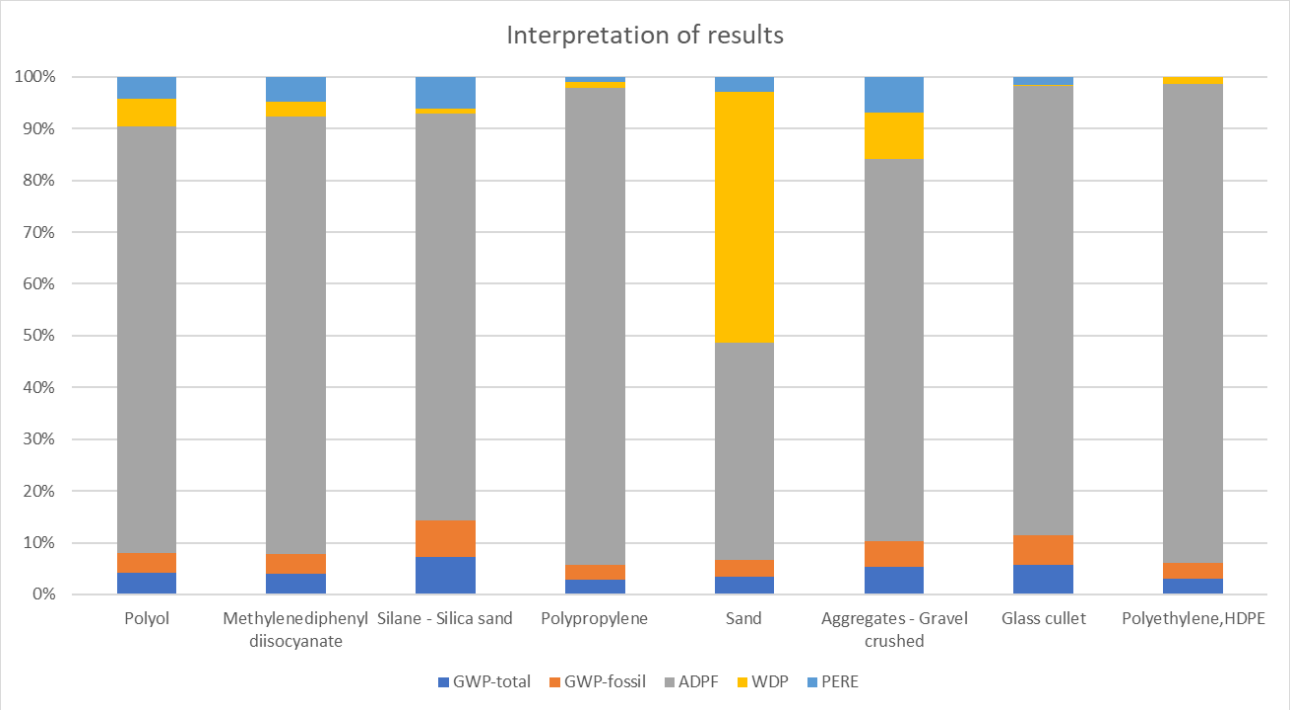
The LCA results listed in the tables above are for the processing of 1 m^2 of Terrabase with the weight of 59.35 kg/m^2. The end-user of this EPD can therefore use these results to calculate the impacts of other resin bound by using the weight per m^2.

In the below calculation table, the GWP impacts have been calculated for each resin bound for weight per m^2.

	Terrabase		Addabound	Addaset or Addaset/Terrabound	Terrabase Rustic	Stonebound UV & Stonebound NUV
kg/m2	59.35	1	57.69	57.4	59.35	57.26
A1	1.56E+01	2.63E-01	1.52E+01	1.51E+01	1.56E+01	1.51E+01
A2	3.70E+00	6.23E-02	3.60E+00	3.58E+00	3.70E+00	3.57E+00
A3	-1.69E-01	-2.85E-03	-1.64E-01	-1.63E-01	-1.69E-01	-1.63E-01
A1-A3	1.92E+01	3.24E-01	1.87E+01	1.86E+01	1.92E+01	1.85E+01

Interpretation of results

Terrabase's Addagrip resin decorative system is made up of components like polyol, isocyanate, sand, aggregates, and polyethylene and HDPE. Among these, aggregates make up 87% of its composition, and polyol makes up 3% and 10% of the other components. Surprisingly, polyol, which accounts 3% of its composition, is responsible for most of the environmental impacts. ADP - Fossil which has the most impacts while compared to the GWP, which indicates a significant impact on the depletion of non-renewable fossil resources throughout the life cycle of the assessed product or process.



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