



Statement of Verification

BREG EN EPD No: 000796

Issue: 01

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

Mason UK Ltd. on behalf of Mason Industries Inc.

are in accordance with the requirements of:

EN 15804:2012+A2:2019

and

BRE Global Scheme Document SD207

This declaration is for:

1 kg of Structural grade vulcanised natural rubber

Company Address

Mason UK Ltd. on behalf of Mason Industries Inc.
Unit 6 Abbey Business Park
Monks Walk
Farnham
Surrey
GU9 8HT




Signed for BRE Global Limited

Hayley Thomson
Operator

22 May 2026
Date of this Issue

22 May 2026
Date of First Issue

21 May 2031
Expiry Date



This Statement of Verification is issued subject to terms and conditions (for details visit www.greenbooklive.com/terms).

To check the validity of this statement of verification please, visit www.greenbooklive.com/check or contact us.

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





Environmental Product Declaration

EPD Number: 000796

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
Mason UK Ltd. on behalf of Mason Industries Inc. Unit 6 Abbey Business Park Monks Walk Farnham Surrey GU9 8HT	LCA Consultant: Regina Poveda Tool: BRE LINA 2
Declared/Functional Unit	Applicability/Coverage
1 kg of Structural grade vulcanised natural rubber	Other (please specify). Product specific.
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

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
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)

Mason Industries Inc.

Manufacturing site
71/2 หมู่ 5 ถนนบางนา-ตราด Tha Kham,
Bang Pakong District,
Chachoengsao 24130,
Thailand

Head office
350 Rabro Drive
Hauppauge NY 11788
United States

Construction Product:

Product Description

Mason UK are an exclusive agent for Mason Industries Inc. covering the UK, Ireland and many parts of Europe with an extensive range of products and systems for Architectural, M&E and Industrial applications.

This Environmental Product Declaration (EPD) describes the environmental impact of 1kg of structural grade vulcanised natural rubber manufactured by Mason Industries Inc. at their production facility in Thailand for use in architectural noise and vibration control applications, including building isolation bearings, acoustic floating floors, and anti-vibration hangers.

The natural rubber described above is moulded into a wide variety of products, ranging from small bolt isolation bushings to acoustic hanger elements, waffled sheet materials, and discrete building isolation bearings. In each case, the moulding process is deemed similar enough to justify grouping many varied products made from the same materials under a common EPD.

The main raw materials are natural rubber latex derived from rubber trees (*Hevea Brasiliensis*) and carbon black. Individual products may be moulded with embedded steel plates; these do not significantly affect the production of the rubber itself and are not within the scope of this EPD.

Technical Information

Original physical properties			Tested for aging				Compression set
ASTM D-2240	ASTM D-412		Oven aging (70hrs/158°F) ASTM D-573			Ozone ASTM D-1149	ASTM D-395
Duro meter	Tensile Strength [min]	Elongat. At Break (min)	Hardness (max)	Tensile Strength (max)	Elongat. At Break (max,mn6)	1 ppm in air by Vol. 20% Strain 100°F	22hrs/158°F Method B
40±5	2000 psi	500%	+10%	-25%	-25%	No Cracks	25% (max)
50±5	2250 psi	450%	+10%	-25%	-25%	No Cracks	25% (max)
60±5	2250 psi	400%	+10%	-25%	-25%	No Cracks	25% (max)
70±5	2250 psi	300%	+10%	-25%	-25%	No Cracks	25% (max)

Note: Bridge bearing Natural Rubber Specification. Information available in <https://www.mason-uk.co.uk/wp-content/uploads/2017/09/fsn-13361.pdf>





Main Product Contents

Structural grade vulcanised natural rubber

Material/Chemical Input	%
Natural Rubber	71%
Carbon Black	10%
Antiozonant	5%
Activator	5%
Plasticiser	7%
Vulcaniser	2%
Other	1%

Manufacturing Process

This process involves Mason's manufacturing site in Thailand, and it is used as a reference for laminated structural bearing, which is one of the products manufactured from the rubber analysed in this EPD.

The Structural grade vulcanised natural rubber is manufactured in two main steps, batch mixing and moulding.

The batch mixing is carried out by breaking down the natural rubber and mixing it with carbon black and antiozonant until it reaches the desired temperature. Then, plasticiser is added and re-mixed. The mixture is ejected, formed into 10 mm thick slabs, and it is cooled down before it goes to the final stage.

The slabs are processed with activator, vulcaniser, and accelerators which are mixed thoroughly before adjusting the product to the desired thickness.

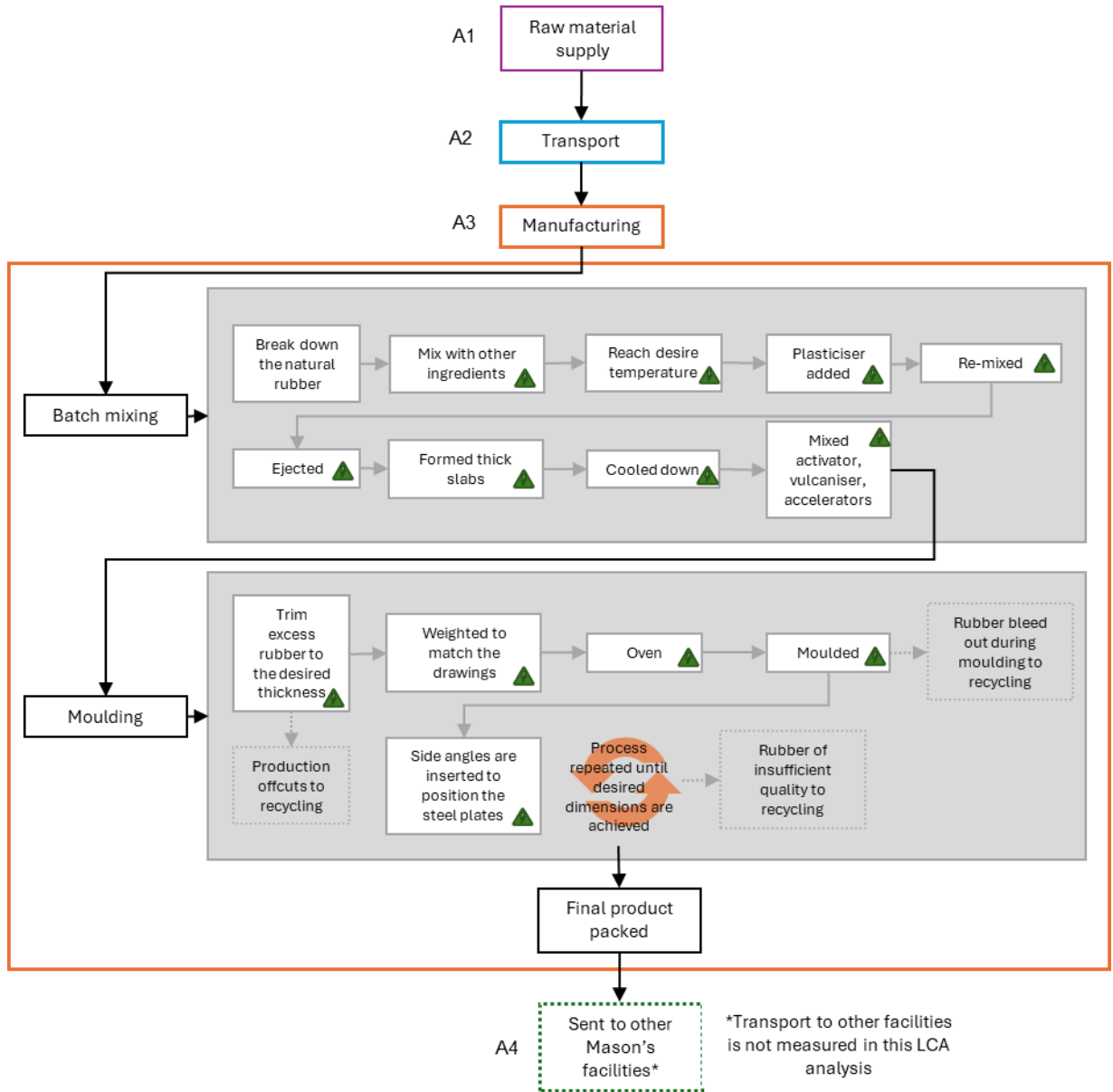
The moulding manufacturing step involves preparing rubber pre-cuts, which were previously sized into specific measurements. The trimmed excess rubber is sent to a recycling facility. After this, all internal pre-cuts are weighed up to match the drawings. Once it achieves the correct weight, the single rubber layers are placed in the oven. Once heated, they are placed into the mould.

The top cover is heated before closing the mould. All parts of the mould must be pre-heated. Then, side angles are inserted to position the steel plates, and after some adjustments the first active layer is created. The process is repeated as many times as needed to create additional layers until it achieves the desired dimensions.

Install the top 3mm cover and install the top mould plate and put the mould back into the press and begin the curing process. Before the rubbers are packed to be shipped across Mason's distributors, they are tested in an independent laboratory. If they do not pass the quality checks, then they are sent to a recycling facility.

The manufacturing process is done using electricity grid from Thailand, and the final product is sent to other Mason's sites for distribution.

Process flow diagram



Note: Transport to other facilities and the steel plates are not measured in the LCA results as they are not part of this LCA analysis.



End of Life

The building demolition can be done using different methods, which are linked to construction methodology and local geography. When the product reaches its End-of-Life, it will be manually dismantled.

The main raw material of the Structural grade vulcanised natural rubber is Rubber (71%), followed by Carbon black (10%), Plasticiser (7%), Antiozonant (5%), Activator (5%), Vulcaniser (2%) and others. Considering that the Structural grade vulcanised natural rubber is 71% Rubber and that the final product cannot be separated at the End-of-Life, an industrial average End-of Life scenario for Floor finish (underlay), rubber (sponge) has been selected, referencing BRE 2023 PCR PN514 Rev 3.1. i.e. 100% incineration with energy recovery.

The energy used for removing the components from the final waste are considered to be negligible.



Life Cycle Assessment Calculation Rules

Declared / Functional unit description

1 kg of Structural grade vulcanised natural rubber

System boundary

This is a Cradle-to-Gate with Module C & D, reporting all production life cycle stages of modules includes the Product Stage (A1 - A3) and End-of-life (C1 - C4), and Benefits and Loads beyond the System Boundary (D) in accordance with EN 15804:2012+A2:2019 and BRE 2023 Product Category Rules (PN 514 Rev 3.1). Transport to other facilities and the steel plates are not measured in the LCA results as they are not part of this LCA analysis.

Data sources, quality and allocation

Specific primary data derived from Mason Industries Inc' production process in Tha Kham, Bang Pakong District, Chachoengsao 24130, Thailand, have been modelled using BRE LINA 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 Mason Industries Inc' covers a period of one year (01/01/2022 – 31/12/2022).

The LCA study includes Structural grade vulcanised natural rubber products calculated in kgs, which account for the 39.1% of the site's total production. Quantities for raw materials were calculated based on a proportion of rubber batching composition, as per the figures for packaging production, which are based on actual figures. The rubber waste is sent to a recycling facility. Figures for energy and fuels, water and wastewater are allocated based on kgs, according to the provisions of the BRE 2023 PCR PN514 Rev 3.1. and EN 15804:2012+A2:2019. There is no uplift of the raw materials since it is considered to be in the acceptable range.

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.

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).	There is approximately less than 3 years between the Ecoinvent LCI reference year, and the time period for which the LCA was undertaken

Specific European datasets from the ecoinvent LCI database have been selected for this LCA where Thailand-specific datasets are unavailable. For example, the rubber dataset is only available as a RoW dataset. The product is intended for the European and US markets, and this EPD has been requested specifically for the UK distributor. Therefore, the selected datasets are considered appropriate and representative for the scope of the study. The modelling of Thailand electricity is based on the dataset 1 kWh Electricity, medium voltage {TH} electricity voltage transformation from high to medium voltage | EN15804, S, 2022 (Ecoinvent 3.8). The GWP carbon footprint for using 1 kWh of electricity is 0.737 in kgCO_{2e}/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 1 year between the ecoinvent LCI reference year and the time period for which the LCA was undertaken.



Cut-off criteria

All processes associated with the manufacturing process have been included. All inputs or outputs have been included and all raw materials, packaging, energy and fuels, water consumption and wastes, except ancillary materials and emissions to air, water and soil which are not measured. Upstream extraction and/or processing of inputs are included within the use of background datasets within LINA. This LCA analysis excludes information for the steel plates and transport to other facilities.



LCA Results 1 kg of Structural grade vulcanised natural rubber

(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	2.13E+00	2.27E+00	-1.38E-01	1.85E-03	6.88E-07	1.41E-02	7.12E-04
	Transport	A2	1.08E-01	1.08E-01	9.20E-05	4.24E-05	2.50E-08	4.38E-04	6.95E-06
	Manufacturing	A3	1.35E+00	1.35E+00	-3.37E-03	9.27E-05	4.97E-08	4.07E-03	3.45E-04
	Total (Consumption grid)	A1-A3	3.59E+00	3.73E+00	-1.41E-01	1.98E-03	7.62E-07	1.86E-02	1.06E-03
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	8.32E-03	8.31E-03	7.08E-06	3.26E-06	1.92E-09	3.37E-05	5.35E-07
	Waste processing	C3	-3.16E+00	3.16E+00	-3.43E-04	-1.75E-05	-6.68E-09	-4.57E-04	-7.97E-06
	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	-5.08E+00	5.06E+00	-8.41E-03	-6.93E-03	-3.43E-07	-1.58E-02	-8.09E-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 1 kg of Structural grade vulcanised natural rubber (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 & metal	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	2.32E-03	2.40E-02	9.56E-03	4.21E-05	7.09E+01	1.70E+00	1.84E-07
	Transport	A2	1.32E-04	1.44E-03	4.42E-04	3.75E-07	1.63E+00	7.34E-03	9.31E-09
	Manufacturing	A3	8.28E-04	8.50E-03	2.40E-03	1.03E-06	1.63E+01	3.26E-01	1.13E-08
	Total (Consumption grid)	A1-3	3.28E-03	3.39E-02	1.24E-02	4.35E-05	8.88E+01	2.03E+00	2.05E-07
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	1.02E-05	1.11E-04	3.40E-05	2.89E-08	1.26E-01	5.65E-04	7.17E-10
	Waste processing	C3	-1.77E-04	-1.92E-03	-4.72E-04	-1.76E-07	-4.52E-01	-1.74E-01	-2.21E-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	-3.74E-03	-4.14E-02	-1.01E-02	-1.43E-05	-1.35E+02	-9.63E-01	-7.73E-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 1 kg of Structural grade vulcanised natural rubber (continued)

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

			IRP	ETP-fw	HTP-c	HTP-nc	SQP
			kBq U ²³⁵ eq	CTUe	CTUh	CTUh	dimensionless
Product stage	Raw material supply	A1	4.39E-01	5.29E+01	1.33E-09	3.57E-08	1.42E+01
	Transport	A2	8.39E-03	1.27E+00	4.12E-11	1.34E-09	1.12E+00
	Manufacturing	A3	6.71E-03	2.34E+01	2.01E-10	1.04E-08	-1.47E+00
	Total (Consumption grid)	A1-3	4.54E-01	7.76E+01	1.57E-09	4.74E-08	1.39E+01
End of life	Deconstruction, demolition	C1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Transport	C2	6.46E-04	9.81E-02	3.18E-12	1.03E-10	8.63E-02
	Waste processing	C3	-2.10E-03	-5.16E+00	-3.58E-11	-2.10E-09	-1.66E-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	-4.74E+00	-6.29E+01	-1.27E-09	-3.62E-08	-5.03E+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 1 kg of Structural grade vulcanised natural rubber (continued)

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

			PERE	PERM	PERT	PENRE	PENRM	PENRT
			MJ	MJ	MJ	MJ	MJ	MJ
Product stage	Raw material supply	A1	2.22E+00	2.02E+00	4.24E+00	4.65E+01	2.31E+01	6.96E+01
	Transport	A2	2.30E-02	0.00E+00	2.30E-02	1.60E+00	0.00E+00	1.60E+00
	Manufacturing	A3	1.78E+00	1.70E-02	1.80E+00	1.45E+01	1.69E+00	1.62E+01
	Total (Consumption grid)	A1-3	4.02E+00	2.04E+00	6.06E+00	6.26E+01	2.48E+01	8.74E+01
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	1.77E-03	0.00E+00	1.77E-03	1.23E-01	0.00E+00	1.23E-01
	Waste processing	C3	2.19E-02	0.00E+00	2.19E-02	-2.67E+01	2.72E+01	4.49E-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	-6.81E+00	0.00E+00	-6.81E+00	-3.74E+01	0.00E+00	-3.74E+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 1 kg of Structural grade vulcanised natural rubber (continued)

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

			SM	RSF	NRSF	FW
			kg	MJ net calorific value	MJ net calorific value	m ³
Product stage	Raw material supply	A1	7.62E-03	0.00E+00	0.00E+00	4.05E-02
	Transport	A2	0.00E+00	0.00E+00	0.00E+00	1.82E-04
	Manufacturing	A3	1.34E-03	0.00E+00	0.00E+00	8.81E-03
	Total (Consumption grid)	A1-3	8.96E-03	0.00E+00	0.00E+00	4.95E-02
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	1.40E-05
	Waste processing	C3	0.00E+00	0.00E+00	0.00E+00	-4.07E-03
	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	-2.46E-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 1 kg of Structural grade vulcanised natural rubber (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	1.11E-01	3.24E+00	3.36E-04
	Transport	A2	1.80E-03	3.19E-02	1.10E-05
	Manufacturing	A3	2.10E-02	5.08E-01	1.06E-06
	Total (Consumption grid)	A1-3	1.34E-01	3.78E+00	3.48E-04
End of life	Deconstruction, demolition	C1	0.00E+00	0.00E+00	0.00E+00
	Transport	C2	1.39E-04	2.46E-03	8.50E-07
	Waste processing	C3	6.68E-02	1.05E+00	1.36E-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	2.80E-01	3.87E+00	1.19E-03

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



LCA Results 1 kg of Structural grade vulcanised natural rubber (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	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	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.00E-04
	Total (Consumption grid)	A1-3	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.00E-04
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 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

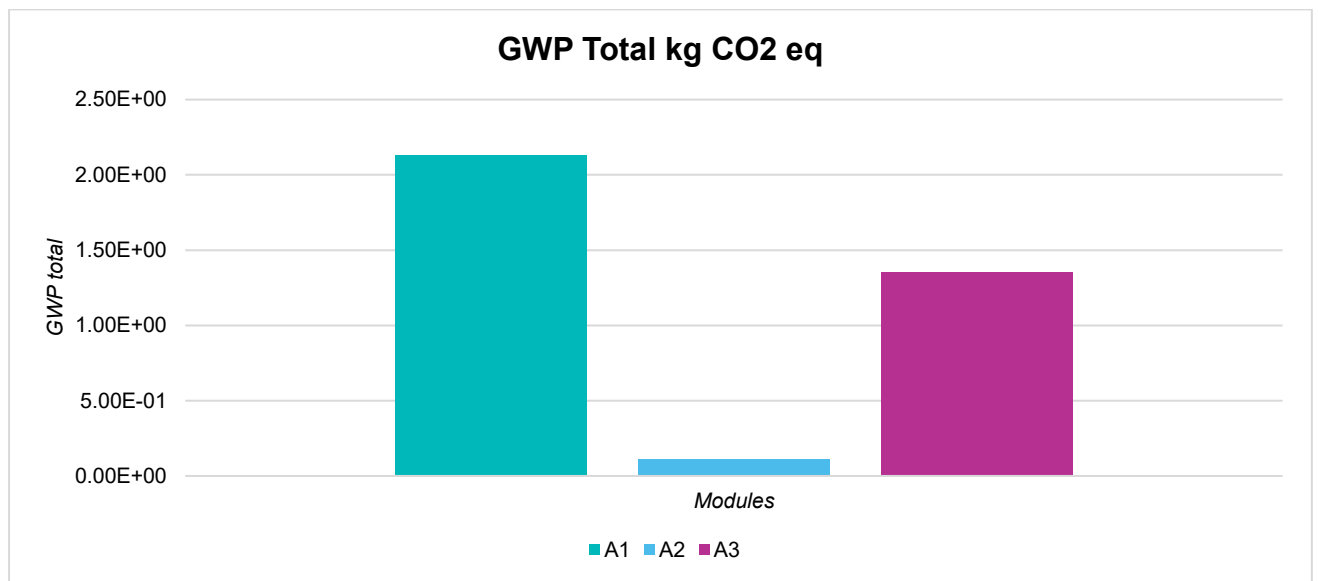


Scenarios and additional technical information

Scenarios and additional technical information			
Scenario	Parameter	Units	Results
C1 to C4 End of life,	Industrial average End-of Life scenario for Floor finish (underlay), rubber (sponge) has been selected referencing BRE 2023 PCR PN514 Rev 3.1. i.e. 100% incineration with energy recovery.		
C1 - Deconstruction	<p>It is assumed that the entire building is demolished using heavy machines. The Structural grade vulcanised natural rubber will be removed manually from the deconstruction unit without using any power tools. Therefore, no impacts are associated with this module.</p> <p>In this scenario, it is assumed that 100% of Rubber will be recovered from the building demolition and the energy used for removing the Rubber from the final waste is considered to be negligible.</p>		
C2 - Transportation	50 km by road has been modelled for module C2 as a typical distance from the demolition to site to the incineration with energy recovery 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.	Lorry	16 – 32 metric ton
	Transportation distance	km	50
C3 – Pre-processing Waste	<p>It is assumed that the Structural grade vulcanised natural rubber is going to be sold in the UK, therefore the industrial average End-of-Life scenario for the UK has been modelled.</p> <p>According to the average industrial End of Life scenario for Floor finish (underlay), rubber (sponge) based on BRE PCR EN15804 A2, the natural rubber will be sent to the waste processing unit for incineration for energy recovery, given the calorific value 43.50 MJ per kg (ISO 20463, 2018).</p>	%	100
C4 - Disposal	No impacts are attributable to module C4.		
Module D	<p>The Rubber will be incinerated in the UK, so the UK electricity dataset have been selected. The dataset used to calculate the avoided impacts of electricity consumption in a future system was 'Electricity, medium voltage {GB} market for Alloc Def, U'.</p> <p>This process is energy-efficient, with 37.4% of the combustion heat recovered after incineration. The efficiency rate of 37.4% has been calculated by taking the weighted average of the number of waste incineration plants available in the UK. According to the Environmental Agency's 2013 article on "CHP Ready Guidance for Combustion and Energy from Waste Power Plants" in the UK, EFW plants have an efficiency of 33%, and CHP plants have an efficiency of 55%. Additionally, according to Azapagic, A., & Jeswani, H. K. (2016), there are currently 25 MSW incinerators with energy recovery in the UK. It is assumed that 20 plants generate heat and power at 33%, while 5 plants generate electricity at 55%. Therefore, the weighted average calculation is used to determine the efficiency, which is calculated at 37.5%.</p> <p>During the incineration 37.4% of the combustion heat recovered i.e., = $-43.50 \times 0.374 = -16.27$</p> <p>Calorific value of Rubber – 43.50 MJ/kg (ISO 20463, 2018).</p> <p>100% Incineration with energy recovery – 1 kg/unit.</p>		
	Recovered for energy	Kg	1

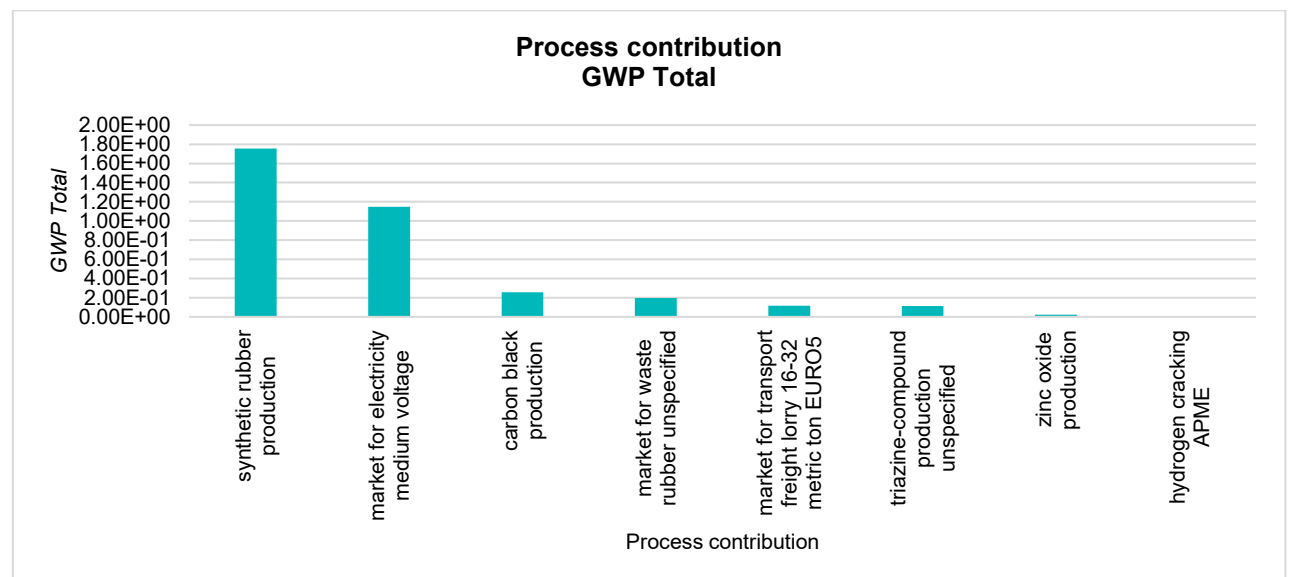
Interpretation of results

Mason's Structural grade vulcanised natural rubber is made of Rubber (71%), Carbon black (10%), Plasticiser (7%), Antiozonant (5%), Activator (5%), Vulcaniser (2%) and others (1%), the bulk of the environmental impacts are attributed to the manufacturing of Rubber, covered by information modules A1-A3 of EN15804:2012+A2:2019. The GWP is higher during the raw material supply stage (i.e., A1). The GWP-total kg CO₂ eq in Life Cycle Assessment Modules for 1kg Structural grade vulcanised natural rubber indicators can be found in Graph 1.



Graph 1. GWP-total kg CO₂ eq in Life Cycle assessment Modules for 1kg Structural grade vulcanised natural rubber.

The main contributors to GWP total are the Rubber, followed by Electricity and Carbon black production. More information can be found in Graph 2.



Graph 2. Process contribution GWP total for 1kg Structural grade vulcanised natural rubber.



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