

Environmental Product Declaration

In accordance with ISO 14025 and EN 15804:2012+A2:2019 for

Safety mat 1000x1000

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> An EPD should provide current information and may be updated if conditions change. The stated validity is therefore subject to the continued registration and publication at www.environdec.com





Programme-related information and verification

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	Regutec a.s.
EPD owner:	Němčičky 92
	664 66, Czech Republic
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CEN standard EN 15804+A2:2019 serves as the Core Product Category Rules (PCR)

Product category rules (PCR): 2019:14 Construction products (version 1.3.0)

PCR review was conducted by: Technical Committee of the International EPD[®] System. A full list of members available on www.environdec.com. The review panel may be contacted via info@environdec.com.

Independent third-party verification of the declaration and data, according to ISO 14025:2006:

□ EPD process certification ⊠ EPD verification

Third party verifier:

Technický a zkušební ústav stavební Praha, s.p. Prosecká 811/76a, Praha 9, 190 00, Czech Republic Certification Body for EPD, accredited by AI - Czech Accreditation Institute, under No. 95/2023

Procedure for follow-up of data during EPD validity involves third party verifier:

⊠ Yes □ No

The EPD owner has the sole ownership, liability, and responsibility for the EPD.

EPDs within the same product category but from different software may not be comparable. EPDs of construction products may not be comparable if they do not comply with EN 15804. For further information about comparability, see EN 15804 and ISO 14025.

General information

Company information

Owner of the EPD: Regutec a.s.

Contact: Ing. Petr Vacek, Ph.D., tel. +420 722 973 302, e-mail: petr.vacek@regutec.com

Description of the organisation:

Manufacturer of elastic floor coverings made of rubber granules such as fall protection mats, stable mats, floor protection mats, fitness floors, rubber tiles, interlocking paving made of rubber granules and much more.

Product-related or management system-related certifications:

The Quality Management System of Regutec a.s. is certified acc. to ISO 9001.

Name and location of production site(s):

Regutec a.s. Němčičky 92 664 66 Czech Republic

Product information

Product name:

Safety mat 30, Safety mat 40, Safety mat 45, Safety mat 50

Product description:

Made from recycled rubber, the rubber playground board is a great choice for any playground. These boards are durable, safe and have a non-slip layer that reduces the risk of injuries. Boards are available in a variety of colors and thicknesses to suit your needs. The rubber boards are easily connected using plastic pins or puzzle joints, which simplifies installation and maintenance. Since they are made from recycled rubber, they are also environmentally friendly.

UN CPC code: 36220 Unvulcanised compounded rubber, in primary forms in plates

Product name	length [mm]	width [mm]	thickness [mm]	weight [kg/pc]	Multiplication coefficient for results in all modules except B2 (where it is 1.00)
Safety mat 30	1000	1000	30	19,50	1,00
Safety mat 40	1000	1000	40	20,80	1,07
Safety mat 45	1000	1000	45	24,30	1,25
Safety mat 50	1000	1000	50	29,17	1,50

LCA information

Functional unit / declared unit: 1 piece

Reference service life: 1 year

Time representativeness: 2021 production

Database(s) and LCA software used:

Professional Database, Extension database XIV: Construction materials and ecoinvent 3.6 installed in GaBi ts (Service Pack 40)

Description of system boundaries:

Cradle-to-grave with modules A1-A5, B2, C1-C4 and D

System diagram:



Cut-off criteria:

Life cycle inventory complies with requirements of PCRs and standards listed in References. As such it includes all identified energy and material flows necessary for:

- Production and packaging (modules A1-A3) of the flooring product,
- transport of the product to average consumer in Europe (module A4),
- manual installation of the product and construction waste disposal (module A5) according to EU waste management statistics,
- maintenance of the product (module B2) comprising weekly wet cleaning with water and detergent,
- end-of-life (modules C1-C4) of the product comprising energy recovery, recycling and landfilling according to waste management in Germany.
- Benefits beyond the system boundaries (module D) comprising energy gains from incineration and avoided production of raw materials (incl. packaging) due to waste recycling.



Allocation: Production mass allocation has been applied for the input materials and energies.

Transport scenarios:

Transport of raw materials, final product and wastes in modules A2 and A4 is modelled using real-life distances representing the state in 2021. Transport of raw materials in A2 considers 291 km distance from various SBR granulate suppliers and 1137 km distance from various PU adhesive suppliers to Regutec a.s. manufacturing sites. Transport of final product in A4 considers distance in perimeter of 1000 km from Regutec a.s. Transport of waste in C2 considers 50 km distance to a hypothetical disposal site. 22 t trucks (Euro 1-6 fleet average) are considered as vehicles for transport of materials and wastes respectively.

Energy mix:

The production takes place in the Czech Republic. Therefore, Czech energy mix is considered. The chart below shows gross electricity generation mix of the Czech Republic according to Yearly Report on the Operation of the Czech Electricity Grid for 2020 published by Energy Regulatory Office. The power plants represented by this mix supplied 81.4 TWh of electricity to Czech consumers in 2020. This amount was supplemented by additional 13.4 TWh imported from surrounding countries (Austria, Germany, Poland, Slovakia). Abbreviation BDMW in the chart equals to Biologically Degradable Municipal Waste.



Fuels and technologies used in gross electricity generation in 2020

Additional information

Website: Further details regarding the certified product are available at the company website https://www.regutec.com/

LCA Practitioner: Ing. Karel Struhala, Ph.D.; Brno University of Technology, Faculty of Civil Engineering; struhala.k@fce.vutbr.cz

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Modules declared, geographical scope, share of specific data (in GWP-GHG indicator) and data variation:

	Produc	ct stage	•	Constr proces stage	uction s	Use stage End of life stage								Resource recovery stage			
	Raw material supply	Transport	Manufacturing	Transport	Construction installation	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Reuse-Recovery-Recycling potential
Module	A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B 6	B7	C1	C2	C3	C4	D
Modules declared	x	x	х	x	x	ND	x	ND	ND	ND	ND	ND	x	х	х	x	x
Geography	CZ / EU27	EU27	CZ / EU27	EU27	EU27		EU27						EU27	EU27	EU27	EU27	EU27
Specific data used		•		•													
Variation – products																	
Variation – sites																	
Acronyms: x =	= module i	is declare	d; ND = n	nodule is n	ot declare	ed; $CZ = d$; $CZ = data$ representing situation in Czech Republic; EU27 = data representing situation in the										



Content information

Product

All products are made of mixture of recycled SBR rubber (mainly from old tyres), PU binder (with constant share in all products), water and separator. Detailed percentage is included in full LCA study.

All products contain 89,6 % post-consumer recycled content and 0% renewable material.

Products are packed into PE foil in average rate 0,005 kg.m⁻² and stored on wooden pallets. Detail are included in LCA study.

Products are compliant with REACH regulation (EC) 1907/2006 Substances of Very High Concern (SVHC) meaning content of SVHC ≤ 0,1 % w/w)



Environmental Information

Potential environmental impact per DU of Safety mat 30 – mandatory indicators according to EN 15804

Results per declared unit																
INDICATOR	UNIT	A1-A3	A4	A5	B1	B2	В3	В4	В5	B6	B7	C1	C2	C3	C4	D
GWP-fossil	kg CO2 eq.	3,90E+00	1,35E+00	1,98E-02	ND	1,07E-02	ND	ND	ND	ND	ND	0,00E+00	8,08E-02	1,16E+00	1,72E-01	-4,86E+01
GWP-biogenic	kg CO2 eq.	-1,97E+00	2,27E-02	1,21E+00	ND	5,36E-05	ND	ND	ND	ND	ND	0,00E+00	1,36E-03	1,00E-02	-1,79E-03	-9,18E-01
GWP-luluc	kg CO2 eq.	2,29E-02	1,13E-02	2,71E-05	ND	2,62E-03	ND	ND	ND	ND	ND	0,00E+00	6,79E-04	2,08E-03	1,44E-04	-1,92E-02
GWP-total	kg CO2 eq.	1,94E+00	1,38E+00	1,23E+00	ND	1,34E-02	ND	ND	ND	ND	ND	0,00E+00	8,28E-02	1,17E+00	1,70E-01	-4,96E+01
ODP	kg CFC 11 eq.	3,63E-08	1,77E-16	1,82E-16	ND	3,86E-10	ND	ND	ND	ND	ND	0,00E+00	1,06E-17	2,77E-14	4,15E-16	-2,27E-10
AP	mol H+ eq.	1,53E-02	8,21E-03	8,84E-05	ND	6,02E-05	ND	ND	ND	ND	ND	0,00E+00	4,91E-04	1,22E-03	5,16E-04	-6,07E-02
EP-freshwater	kg PO43- eq.	1,71E-04	4,11E-06	1,19E-08	ND	5,85E-06	ND	ND	ND	ND	ND	0,00E+00	2,46E-07	3,40E-06	3,17E-05	-9,08E-05
EP-marine	kg N eq.	4,67E-03	4,03E-03	4,20E-05	ND	5,23E-05	ND	ND	ND	ND	ND	0,00E+00	2,41E-04	3,85E-04	1,17E-04	-1,98E-02
EP-terrestrial	mol N eq.	4,85E-02	4,46E-02	4,66E-04	ND	1,76E-04	ND	ND	ND	ND	ND	0,00E+00	2,67E-03	4,15E-03	1,28E-03	-2,13E-01
POCP	kg NMVOC eq.	1,58E-02	8,73E-03	1,22E-04	ND	5,33E-05	ND	ND	ND	ND	ND	0,00E+00	5,23E-04	1,10E-03	4,30E-04	-8,08E-02
ADP- minerals&metals	kg Sb eq.	7,26E-06	1,21E-07	5,02E-10	ND	1,89E-07	ND	ND	ND	ND	ND	0,00E+00	7,25E-09	3,84E-07	1,36E-08	-8,80E-06
ADP-fossil*	MJ	1,14E+02	2,12E+01	1,64E-01	ND	1,94E-01	ND	ND	ND	ND	ND	0,00E+00	1,27E+00	1,19E+01	2,87E+00	-1,67E+03
WDP	m3	2,33E+00	1,38E-02	1,13E-03	ND	-1,96E-01	ND	ND	ND	ND	ND	0,00E+00	8,27E-04	6,10E-02	-2,43E-03	-8,75E-01

ACRONYMS

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GWP-fossil = Global Warming Potential fossil fuels; GWP-biogenic = Global Warming Potential biogenic; GWP-luluc = Global Warming Potential land use change; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential, Accumulated Exceedance; EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-marine = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals & metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption



Potential environmental impact – additional mandatory and voluntary indicators according to EN 15804

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Results per de	Results per declared unit															
INDICATOR	UNIT	A1-A3	A4	A5	B1	B2	B3	B4	В5	B6	B7	C1	C2	C3	C4	D
Particulate matter	Disease incidences	1,37E-07	4,75E-08	1,72E-09	ND	5,95E-10	ND	ND	ND	ND	ND	0,00E+00	2,84E-09	1,00E-08	5,04E-09	-4,38E-07
lonising radiation, human health	kBq U ₂₃₅ eq.	2,29E-01	3,20E-03	3,21E-05	ND	8,19E-04	ND	ND	ND	ND	ND	0,00E+00	1,91E-04	7,63E-02	4,17E-03	-6,05E-01
Ecotoxicity, freshwater	CTUe	6,27E+01	1,33E+01	6,37E-02	ND	5,13E-01	ND	ND	ND	ND	ND	0,00E+00	7,97E-01	3,93E+00	2,38E+00	-5,74E+02
Human toxicity, cancer	CTUh	1,93E-09	2,70E-10	5,78E-12	ND	2,50E-11	ND	ND	ND	ND	ND	0,00E+00	1,61E-11	1,59E-10	1,07E-10	-3,45E-08
Human toxicity, non-cancer	CTUh	5,83E-08	1,59E-08	8,45E-11	ND	3,14E-10	ND	ND	ND	ND	ND	0,00E+00	9,51E-10	6,68E-09	8,95E-09	-2,97E-06
Land Use	Pt	1,64E+02	6,33E+00	1,68E-02	ND	3,19E-01	ND	ND	ND	ND	ND	0,00E+00	3,79E-01	5,26E+00	1,71E-01	-6,85E+01

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Use of resources

Results pe	Results per declared unit															
INDICATOR	UNIT	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
PERE	MJ	3,17E+01	1,18E+00	7,04E-03	ND	8,74E-02	ND	ND	ND	ND	ND	0,00E+00	7,07E-02	7,72E+00	2,09E-01	-6,41E+01
PERM	MJ	0,00E+00	0,00E+00	0,00E+00	ND	0,00E+00	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PERT	MJ	3,17E+01	1,18E+00	7,04E-03	ND	8,74E-02	ND	ND	ND	ND	ND	0,00E+00	7,07E-02	7,72E+00	2,09E-01	-6,41E+01
PENRE	MJ	1,14E+02	2,12E+01	1,64E-01	ND	1,94E-01	ND	ND	ND	ND	ND	0,00E+00	1,27E+00	1,19E+01	2,87E+00	-1,67E+03
PENRM	MJ.	0,00E+00	0,00E+00	0,00E+00	ND	0,00E+00	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PENRT	MJ	1,14E+02	2,12E+01	1,64E-01	ND	1,99E-01	ND	ND	ND	ND	ND	0,00E+00	1,27E+00	1,19E+01	2,87E+00	-1,67E+03
SM	kg	0,00E+00	0,00E+00	0,00E+00	ND	0,00E+00	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	8,33E-01
RSF	MJ	0,00E+00	0,00E+00	0,00E+00	ND	0,00E+00	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
NRSF	MJ	0,00E+00	0,00E+00	0,00E+00	ND	0,00E+00	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
FW	m ³	5,71E-02	1,35E-03	2,93E-05	ND	4,95E-04	ND	ND	ND	ND	ND	0,00E+00	8,10E-05	4,58E-03	2,65E-05	-1,88E-01

ACRONYMS

PERE = Use of renewable primary energy excluding renewable primary energy resources 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; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of non-renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of non-



Waste production and output flows

Waste production

Results per functional or declared unit																
INDICATOR	UNIT	A1-A3	A4	A5	B1	B2	В3	В4	В5	B6	B7	C1	C2	C3	C4	D
Hazardous waste disposed	kg	9,64E-06	9,31E-10	1,66E-10	ND	6,01E-12	ND	ND	ND	ND	ND	0,00E+00	5,57E-11	3,75E-09	4,51E-10	-2,35E-07
Non-hazardous waste disposed	kg	2,53E-01	2,74E-03	9,37E-04	ND	5,48E-03	ND	ND	ND	ND	ND	0,00E+00	1,64E-04	4,40E-02	2,39E+00	-6,54E-01
Radioactive waste disposed	kg	1,85E-03	2,23E-05	3,17E-07	ND	2,02E-06	ND	ND	ND	ND	ND	0,00E+00	1,34E-06	8,26E-04	2,90E-05	-6,33E-03

Output flows

Results per functiona	Results per functional or declared unit															
INDICATOR	UNIT	A1-A3	A4	A5	B1	B2	В3	B4	B5	B6	B7	C1	C2	C3	C4	D
Components for re-use	kg	0,00E+00	0,00E+00	0,00E+00	ND	0,00E+00	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Material for recycling	kg	0,00E+00	0,00E+00	7,16E-01	ND	0,00E+00	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	1,66E+01	0,00E+00	0,00E+00
Materials for energy recovery	kg	1,14E-02	0,00E+00	3,39E-03	ND	0,00E+00	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	1,34E-01	0,00E+00	0,00E+00
Exported energy, electricity	MJ	0,00E+00	0,00E+00	0,00E+00	ND	0,00E+00	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Exported energy, thermal	MJ	0,00E+00	0,00E+00	0,00E+00	ND	0,00E+00	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

Information on biogenic carbon content

Results per functional or declared unit										
BIOGENIC CARBON CONTENT	UNIT	QUANTITY								
Biogenic carbon content in product	kg C	0,00E+00								
Biogenic carbon content in packaging	kg C	7,33E-02								

Note: 1 kg biogenic carbon is equivalent to 44/12 kg CO₂.

Additional information

Red columns in the graphs (product phases A-C) indicate summarized environmental impacts during the product life cycle. Green numbers in the graph enumerate potential savings due to using recycled raw materials and also possibilities of further product reuse and recycling.



References

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EN 15804:2012+A2:2019 Sustainability of construction works – Environmental product declarations – Core rules for the product category of construction products

PCR 2019:14 Construction products (EN 15804: A2) (1.30)

General Programme Instructions of the International EPD® System. Version 3.01.

ISO 9001:2015 Quality management systems - Requirements

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ISO 14040:2006 Environmental management – Life cycle assessment – Principles and framework

ISO 14044:2006 Environmental management – Life cycle assessment Requirements and guidelines

Energy Regulatory Office: Yearly Report on the Operation of the Czech Electricity Grid for 2020

EN 16449:2014 Wood and wood-based products – Calculation of the biogenic carbon content of wood and conversion to carbon dioxide



