THE INTERNATIONAL EPD® SYSTEM

MENA EPD

THE INTERNATIONAL EPD SYSTEM

ECO PLATFORM EPD VERIFIED

ENVIRONMENTAL PRODUCT DECLARATION

EPD registration number: EPD-IES-0015689
In accordance with ISO 14025:2006

GULF•O•FLEX
GULF•O•FLEX ULTRA
WORLD FLEX RUBBER INSULATION

from

RUBBER WORLD INDUSTRY LLC

Programme	The International EPD® System, www.environdec.com
Programme operator	EPD International AB

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OVERVIEW

RUBBER WORLD INDUSTRY

Rubber World Industry, hereafter referred to as "RWI". RWI was established in 1993 to manufacture a comprehensive and versatile range of technically advanced Rubber Insulation products. RWI is a pioneer UAE national enterprise that has become an industry leader in the entire Gulf and South-East Asia region. Today, we supply 56% of the region's requirements for rubber insulation products; and trade in the complete range of HVAC products. International exports to Americas, Africa, Far East Asia and Europe, has enabled the Company to achieve remarkable multi-million dollar revenue and overall global success. Overview Having become a world leader in engineered foams, Rubber World Industry LLC developed " Gulf-O-Flex® " as our agship brand in Rubber NBR Insulation

OUR VALUES

PROTECT. CONSERVE. SUSTAIN

The finest raw material and the latest technology combination in our facilities with great precision to ensure the highest quality. While we protect, we also sustain resources and set standards for the world to follow.

INNOVATE RESPONSIBLY

While customer safety is our foremost concern, we also focus on conserving energy in our processes and in the functioning of our products. Our innovations create satisfied customers and a healthy world.

OUR MISSION

Our mission is to provide innovative products that ensure safety to the end-user; and reliability to a widely growing clientele.

To offer products and services that are developed through an in-depth understanding of customer requirements.

To become the preferred choice in the markets where we are present; and to set new benchmarks for the industry worldwide.

To combine quality and precision without compromising the environment and natural resources.

GENERAL INFORMATION

PROGRAMME INFORMATION

Programme	The International EPD® System
Address	EPD International AB Box 210 60 SE-100 31 Stockholm Sweden
Website	www.environdeck.com
E-mail	info@environdec.com

ACCOUNTABILITIES FOR PCR, LCA AND INDEPENDENT, THIRD-PARTY VERIFICATION

Product Category Rules (PCR)	CEN standard EN 15804 serves as the Core Product Category Rules (PCR)
	Product Category Rules (PCR): PCR 2019:14 Construction products (EN 15804+A2) (1.3.2)
	PCR review was conducted by: The Technical Committee of the International EPD® System **President**: Claudia A. Peña. **Contact via** info@environdec.com
Life Cycle Assessment (LCA)	LCA accountability: Envirolink LLC.
Third-party Verification	Independent third-party verification of the declaration and data, according to ISO 14025:2006, via: ☒ EPD verification by individual verifier Third-party verifier: <name, organisation, and signature of the third-party verifier> Approved by: The International EPD® System 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 registered in different EPD programmes, or not compliant with EN 15804, may not be comparable. For two EPDs to be comparable, they must be based on the same PCR (including the same version number) or be based on fully-aligned PCRs or versions of PCRs; cover products with identical functions, technical performances and use (e.g. identical declared/functional units); have equivalent system boundaries descriptions of data; apply equivalent data quality requirements, methods of data collection, and allocation methods; apply identical cut-off rules and impact assessment methods (including the same version of characterization factors); have equivalent content declarations; and be valid at the time of comparison. For further information about comparability, see EN 15804 and ISO 14025.

COMPANY INFORMATION

Owner of the EPD	RUBBER WORLD INDUSTRY LLC.
Contact	P.O. Box 2435, New Industrial Area-Ajamn-United-Arab-Emirates

Description Of The Organisation	For a comprehensive description of Rubber World Industry LLC, including its establishment, product range, and market reach, please refer to Page 3 of this catalogue.

Product-related Or Management System-related Certifications:	We are globally recognized by the FM, UL, ASTM (American Standard of Testing Materials), BSI (British Standard Institute), and ISO 9001:2015. Dubai Central Laboratory (DCL) quality certification by Dubai Municipality to maintain Green Building Regulations & Specifications Standards for products and operations

Name and location of production site

AJMAN, UAE

PRODUCT INFORMATION

Product name	GULF•O•FLEX, WORLDFLEX & GULF•O•FLEX ULTRA RUBBER INSULATION.
Product identification	NBR INSULATION PRODUCTS IN TUBE AND SHEET FORM WITH FACING, ALUGLASS/CLAD OR WITHOUT FACING.
Product description	GULF•O•FLEX insulation products are non-porous, expanded closed-cell structure, flexible elastomeric thermal insulations manufactured without the use of CFC's, HCFC's or HFC's. Formaldehyde free, dust-free, fiber-free and resists mold and mildew. Have a flame-spread index of less than 25 and a smoke-developed index of less than 50 as tested by the third-party testing lab. (ASTM E 84 Method of testing surface burning characteristics of building materials complied

- GULF-O-FLEX® Tubes are supplied with smooth shark skin and are available in the unslit form in wall. Thickness of 1/4", 3/8", 1/2", 3/4", 1, 1-1/4 in sizes ID ranging from 1/4" to 4-3/8" Iron Pipe size. Are non-porous and resists mildew growth.
- GULF-O-FLEX® sheets are supplied in flat sheets 36"x 48" (.92mx 1.22m), in popular thicknesses. Also available in width 39" - 48" (1m to 1.22m) x length 157" - 1181" (4m to 30m)continuous rolls in thickness 1/8", 1/4", 3/8", 1/2", 3/4", 1", 1-1/4", 1-1/2" and 2".

For more information, please visit https://gulfoflex.com/.

- **UN CPC code**: 362 Other rubber products.

Geographical scope

- **Product stage (A1-A3):** MENA and Asia
- **End-of-life (C1-C4):** MENA

LCA Information

Declared unit 1 m3 of thermal insulation product, including packaging. The specific weight of the product range between 45-70 kg/m3. For this study, an arithmetic average of specific weight of 51.5 kg has been taken into account.

Reference service life : N/A

Time and geography representativeness:

Primary data has been collected from the manufacturing plant located Ajman, UAE for the Jan 2023-Dec 2023 period, being representative of the product and production process. Regarding market area, the products are mainly marketed in the Middle East.

Database(s) and LCA software used

Ecoinvent 3.8 database and EN 15804 reference package based on EF 3.0 has been used.

Data quality

Specific data has been taken on the amounts of materials and energy used during the life cycle of the product. These data have been supplied by the manufacturer, referring to the calendar year 2023, and come from direct factory data. The source of electricity is UAE national average, medium voltage, with an GWP-GHG emission of 0.54 kg CO2e/kWh. The quality of the specific data is consistent with the standards used. The data was examined carefully, and clarification requested from the Manufacturer when necessary.

Generic data have been taken on the impact per unit of matter or energy. These data have been obtained from the Ecoinvent database, of recognized international prestige, in its version 3.8. Said database has been selected as the reference database because it coincides with the input flows of matter and energy on the following aspects:

- **Technological equivalence**: the data derives from the same physical and chemical processes, or at least the same technological coverage.
- **Limits towards nature:** the data contains all the quantitative information necessary for the EPD".
- **Limits towards technical systems:** the considered stages of the life cycle are equivalent.

The treatment and processing of the data has been carried out in accordance with the international standards ISO 14025, ISO 14040, ISO 14044, ISO 21930:2017 and EN15804:2012+ A2:2019/ AC:2021.

Assumptions and hypothesis

Specific data taken directly from real production data attributes to 58.8% of overall GWP-GHG. All inputs and outputs, for which data are available, have been included in the LCI. No assumptions were made regarding downstream processes. Instead, average and generic data was implemented to ensure that the most conservative approach was taken.

Allocation

In this study allocation could not be avoided for ancillary material, energy consumption and waste production as the information was only measured on factory or production process level. The inputs were allocated to studied product based on annual production volume (volume and mass allocation).

LIFE CYCLE STAGES

Manufacturing and Packaging A1-A3 : The environmental impacts considered for the product stage cover the manufacturing of raw materials used in the production as well as packaging materials and other ancillary materials. Also, electricity used by machines, and handling of waste formed in the production processes at the manufacturing facilities are included in this stage. The study also considers the material losses occurring during the manufacturing processes as well as losses during electricity transmission. The manufacturing of NBR insulation tubes and sheets comprises of three main processes. The rst being Chemical process, where rubber, reclaimed rubber, mineral oil, llers and additives are weighed, blended and mixed to obtain masterbatch of NBR rubber. Reclaimed rubber amounts to at least 10% the nal weight of the masterbatch. Next, the NBR rubber are fed through machines in extrusion, blowing and foaming processes into continuous tubes and sheets in a variety of diameters and thicknesses. Finally, the tubes and sheets are cut into commercial dimensions and powdered. At the packaging stage, the tubes are packed in cardboard boxes and palletised; sheets are packed in LDPE bags and stacked in jack trollies before being sent to warehouse, awaiting distribution. In the factory, electricity is required for machinery. Ancillary materials such as water, cleaning products, and mineral oils for machinery are also taken into account. Life Cycle Stages Material loss in production is negligible. Incoming packaging of raw materials, in case of wood and carton are partially reused, reconditioned by external waste facilities; hazardous containers are collected by government waste handling organisation

PRODUCT END OF LIFE (C1-C4)

At the end-of-life stage, two deconstruction scenarios have been taken into account. In the former, the product is dismantled manually and does not consume any energy or material. In the latter, the product is dismantled together with the whole building, making its energy consumption is relatively negligible.

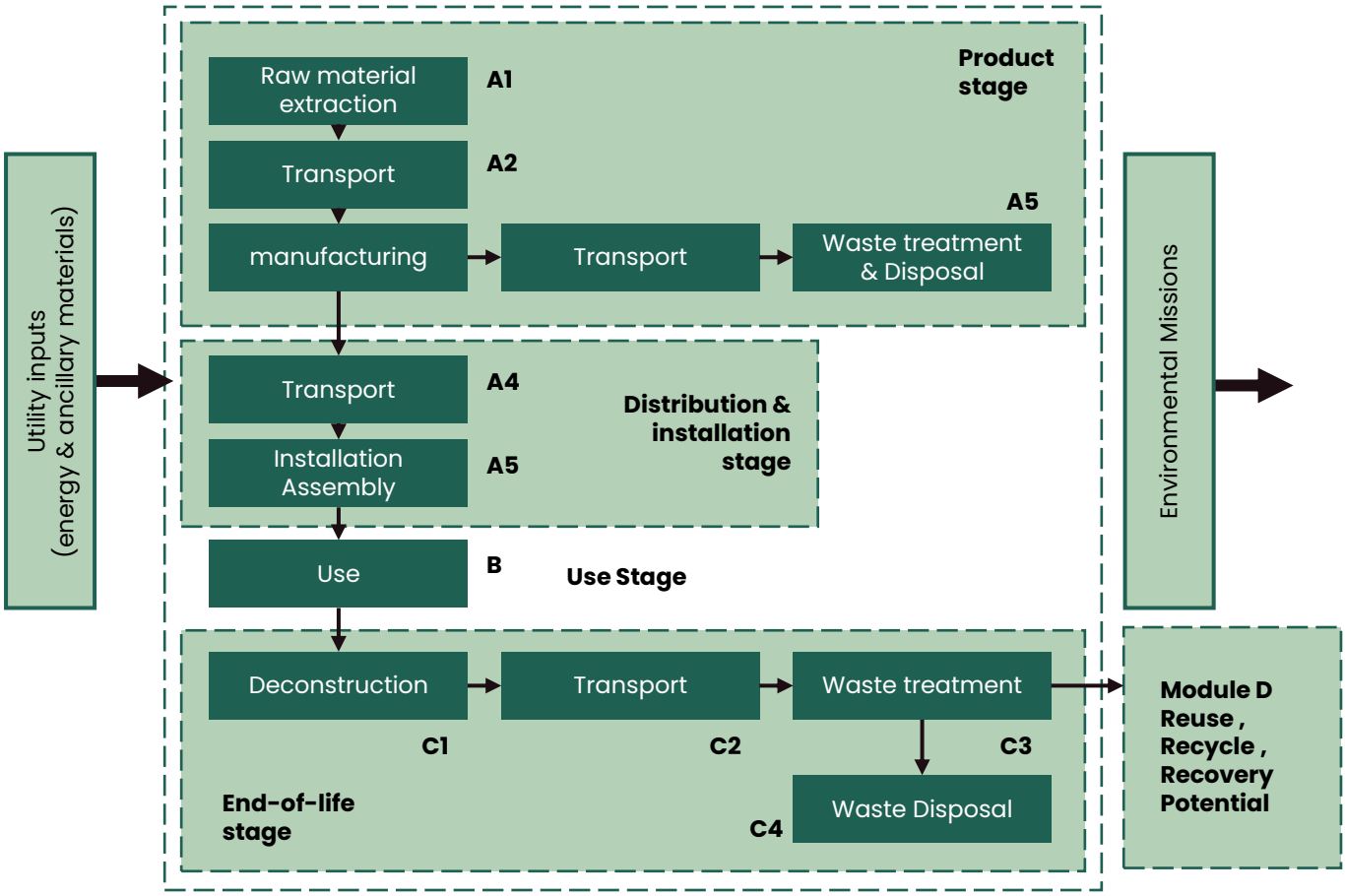
The product is assumed to be collected separately from the rest of construction waste and sent to waste handling facility located 100 km from the construction site.

Thanks to Rubber World Industry LLC take back program and its initiative to utilise at least 10% reclaimed rubber in production, it is considered that 10% of the product is recycled.

The remaining 90% is conservatively considered to be landfilled. Packaging materials are also conservatively assumed to take a market average treatment, where they mostly end up disposed in landfill.

Module D claims the benefits of avoided production of rubber from waste rubber recycling.

SYSTEM DIAGRAM



	Product Stage			Construction process stage		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 , Recycle , Recovery Potential
Module	A1	A2	A3	A4	AS	81	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Modules declared	x	x	x	x	MND	MND	MND	MND	MND	MND	MND	MND	x	.	.	.	x
Geography	ME and ASIA	ME and ASIA	ME	ME	.	.	.	.	.	.	-	-	.	ME	ME	ME	ME	ME
Specific data used	95% GWP-GHG				-	-	.	.	.	.	.	-	.	.	.	.	.	.
Variation - products	Not applicable															-	-
Variation - sites	Not applicable											-	-	.	.		-	-

CONTENT INFORMATION

Product components	Weight kg	Post -consumer material, weight %	Biogenic material weight % and kg C/kg
RUBBER AND POLYMERS	15.20	10	-
FILLERS	45.94	-	-
BLOWING AGENT	1238	-	-
Lubricant oil	22:91	-	
CHEMICAL ADDITIVES	3.57	-	-
TOTAL	51.5		
Packaging materials	Weight, kg	Weight - (versus the product	Weight biogenic carbon, kg C/kg
LOPE BAGS	0.0038	0.01%	.
Cable tie	0.0004	0.00%	.
Label	0.0016	0.01%	0.37
Box	1.1155	2.17%	0 1.36
Clear tape	0.0519	0.10%	.
Plastic straps	0.0778	0.15%	.
Pallet	2.7794	5.40%	0.65
TOTAL	4.0302		

RESULTS OF THE ENVIRONMENTAL PERFORMANCE INDICATORS

Mandatory impact category indicators according to EN 15804

Results per declared unit								
Indicator	Unit	A1-A3	A4	C1	C2	C3	C4	D
GWP fossil	kg CO2e	1,90E+02	1.17E+00	0,00E+00	4,83E-01	2,46E-01	1,53E+01	-8,01E+00
GWP biogenic	kg CO2e	1,97E+02	1,17E+00	0,00E+00	4,83E-01	2,46E-01	7,23E+00	-7,9SE+00
GWP LULUC	kg CO2e	-7,58E+00	4,53E-04	0,00E+00	0,00E+00	0,00E+00	8,10E+00	-7,4SE-02
GWP total	kg CO2e	1,80E-01	4,32E-04	0,00E+00	1,78E-04	6,19E-04	9,79E-04	9,93E-03
Ozone depletion pot.	kg CFC-11e	5,27E-05	2,70E-07	0,00E+00	1,11E-07	1,81E-08	1,78E-07	2,40E-06
Acidification potential	mol H+e	1.24E+00	4.96E-03	0,00E+00	2,05E-03	1,45E-03	9.45E-03	9,50E-04
EP-freshwater	kg Pe	6,24E-03	9,59E-06	0,00E+00	3,96E-06	1,30E-05	1,42E-05	6,96E-05
EP-marine	kg Ne	5,38E-01	1,47E-03	0.00E+00	6,08E-04	7,41E-04	6,91E-03	-1,29E-03
EP-terrestrial	mol Ne	2.03E+00	1,63E-02	0.00E+00	6,71E-03	4,02E-03	2,48E-02	5,78E-03
POCP ("smog")	kg NMVOCe	8,68E-01	5,20E-03	0,00E+00	2,15E-03	1,33E-03	1,01E-02	1,22E-03
*ADP-minerals & metals	kg Sbe	4,96E-03	2,75E-06	0,00E+00	1,13E-06	4,97E-06	2,67E-06	1,91E-04
*ADP-fossil resources	MJ	3,63E+03	1,76E+01	0,00E+00	7,26E+00	2,63E+00	1,38E+01	-5,80E+01
*Water use	m3e depr.	1,41E+02	7,87E-02	0,00E+00	3,25E-02	8,65E-02	1,27E-01	-2,76E+00
Acronyms	• GWP-fossil - Global Warming use and land layer; AP - Eutrophication compartment; reaching marine Accumulated ADP-minerals & metals resources; - Water (user) • Global Warming Potential use change; ODP Acidification potential fraction EP-marine - end compartment Exceedance POCP - Abiotic ADP-fossil - Abiotic deprivation • Potential fossil biogenic; GWP-luluc - Depletion Accumulated of nutrients Eutrophication EP-terrestrial - Formation depletion for potential, • fuels, GWP-biogen - Global Warming potential of the start Exceedance; EP reaching fresh potential fraction of - Eutrophication potential of potential for non- fossil resources deprivation-weighted water • Potential aspheric -freshwater end nutrients in potential, tropospheric potential; WDP r consumption • land ozone - ozone;							

Disclaimer: The results of this environmental impact indicator shall be used with care as the uncertainties of these results are high or as there is limited experience with the indicator.

ADDITIONAL MANDATORY AND VOLUNTARY IMPACT CATEGORY INDICATORS

1.97E+02								
Indicator	Unit	A1-A3	A4	C1	C2	C3	C4	D
**GWP_GHG	kgCO2 eq	1.97E+02	1,17E+00	0,00E+00	4,83E-01	2,46E-01	7,23E+00	-7,95E+00

Disclaimer: GWP-GHG = Global Warming Potential total excl. biogenic carbon following IPCC AR5 methodology Resource Use Indicators Waste Indicators The indicator includes all greenhouse gases included in GWP-total but excludes biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product. This indicator is thus equal to the GWP indicator originally dened in EN 15804:2012+A1:2013

This indicator accounts for all greenhouse gases except biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product. As such, the indicator is identical to GWP-total except that the CF for biogenic CO2 is set to zero.

RESOURCE USE INDICATORS

Results per declared unit								
Indicator	Unit	A1-A3	A4	C1	C2	C3	C4	D
PERE	MJ	2,23E+02	1,98E-01	0,00E+00	8,18E-02	2,68E-01	2,92E-01	1,03E+01
PERM	MJ	7,05E+01	0,00E+00	0.00E+00	0,00E+00	0,00E+00	- 7,05E+01	0,00E+00
PERT	MJ	2,94E+02	1,98E-01	0,00E+00	8,18E-02	2,68E-01	- 7,03E+01	1,03E+01
PENRE	MJ	2,59E+03	1,76E+01	0,00E+00	7,26E+00	2,63E+00	1,38E+01	- 1,97E+01
PENRM	MJ	1,04E+03	0,00E+00	0,00E+00	0,00E+00	. 7,83E+02	- 2,61E+02	- 3,83E+01
PENRT	MJ	3,63E+03	1,76E+01	0,00E+00	7,26E+00	. 7,81E+02	. 2,47E+02	- 5,80E+01
SM	kg	1,95E+00	4,89E-03	0,00E+00	2,02E-03	1,70E-02	5,70E-03	3,96E-02
RSF	MJ	1,78E+00	4,93E-05	0,00E+00	2,03E-05	1,34E-04	1,66E-04	4,83E-02
NRSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
FW	m²	3,44E+00	2,28E-03	0,00E+00	9,40E-04	1,77E-03	1,26E-02	-5,61E-02

Acronyms

PERE = Use materials; use of non-renewable primary re-sources;
of renewable PERM = Use renewable primary primary energy resources SM = Use of
primary of renewable energy energy used as raw secondary non-renewable
energy excluding primary energy resources; PENRE resources used as materials; material; RSF
secondary fuels:
renewable resources = Use of raw materials; PENRT - Total = Use of FW = Use
primary energy used as raw non-renewable PENRM - use of renewable secondary of net fresh
resources materials; PERT primary energy Use of non-renewable fuels; NRSF water
used as raw = Total excluding non-renewable primary energy . Use of

WASTE INDICATORS

Results per declared unit								
Indicator	Unit	A1-A3	A4	C1	C2	C3	C4	D
Hazardous waste disposed	kg	1,52E+01	2,33E-02	0,00E+00	9,63E-03	4,92E-02	9,61E-03	-9,27E-01
Non-hazardous waste disposed	kg	2,45E+02	3,83E-01	0,00E+00	1,58E-01	6,44E-01	4,69E+01	1,33E+01
Radioactive waste disposed	kg	8,87E-03	1.18E-04	0,00E+00	4,86E-05	9,00E-06	1,33E-05	1,18E-03

OUTPUT FLOW INDICATORS

Results per declared unit								
Indicator	Unit	A1-A3	A4	C1	C2	C3	C4	D
Components for re-use	kg	1,30E-02	1.30E-02	0.00E+00	0.00E+00	0,00E+00	0,00E+00	0,00E+00
Material for recycling	kg	2,15E-01	2,15E-01	0,00E+00	0.00E+00	5,15E+00	0.00E+00	0,00E+00
Materials for energy recovery	kg	0,00E+00	0,00E+00	0,00E+00	0.00E+00	0.00E+00	0.00E+00	0,00E+00
Exported energy, electricity	MJ	0,00E+00	0,00E+00	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	0.00E+00	0,00E+00	0.00E+00	0,00E+00

ENVIRONMENTAL IMPACTS
EN 15804+A1, CML / ISO 21930

Results per declared unit								
Indicator	Unit	A1-A3	A4	C1	C2	C3	C4	D
Global Warming Pot.	kg CO2e	1,91E+02	1.16E+00	0.00E+00	4,78E-01	4,72E-01	6,38E+00	-7,22E+00
Ozone depletion Pot.	kg CFC- 11e	4,99E-05	2,13E-07	0,00E+00	8,81E-08	1,54E-08	1,41E-07	1,88E-06
Acidification	kg SO2e	1,04E+00	3.85E-03	0,00E+00	1,59E-03	1,14E-03	7,61E-03	4,47E-04
Eutrophication	kg PO43e	6.33E-01	8.78E-04	0.00E+00	3.62E-04	1,84E-03	3,67E-01	6,82E-03
POCP ("smog")	kg C2H4e	4.99E-02	1.50E-04	0,00E+00	6,21E-05	1,26E-04	2.27E-03	-3,00E-04
ADP-elements	kg Sbe	4,41E-03	2,66E-06	0.00E+00	1.10E-06	4,94E-06	2,59E-06	1,95E-04
ADP-fossil	MJ	3.63E+03	1,76E+01	0,00E+00	7,26E+00	2,63E+00	1,38E+01	-5,80E+01

It is encouraged the use of results of modules A1-A3 without considering the results of module C, since downstream processes are mainly based on assumptions.
The estimated impact results are only relative statements, which do not indicate the endpoints of the impact categories, exceeding threshold values, safety margins and/or risks.

REFERENCES

- General Programme Instructions of the International EPD® System. Version 4.0.
- Int'l EPD System PCR 2019:14 Construction products, version 1.3.2 (Preverified)
- ISO (2000): ISO 14020:2000, Environmental labels and declarations - General principles
- ISO 14025:2010 Environmental labels and declarations - Type III environmental declarations Principles and procedures.
- ISO 14040:2006 Environmental management. Life cycle assessment. Principles and frameworks.
- ISO 14044:2006 Environmental management. Life cycle assessment. Requirements and guidelines.
- EN 15804+A2 Sustainability in construction works - Environmental product declarations - Core rules for the product category of construction products.