

# ENVIRONMENTAL PRODUCT DECLARATION

# EPD

IN ACCORDANCE WITH EN 15804+A2 & ISO 14025



## Product name:

1. GDA ActiMat & GDA ActiTex
2. GDA ActiMat C & GDA ActiTex C
3. GDA SolidMat
4. GDA ActiStop sealing profile



## Producer:

Issued on: 12 August 2025  
Valid until: 12 August 2030

**GDA Sp. z o.o.**

## GENERAL INFORMATION

### EPD OWNER

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Manufacturer / EPD Holder	GDA Sp. z o.o.
Company Address	ul. Maszynowa 30, 80-298 Gdańsk
Contact details	office: <a href="mailto:biuro@actigda.com">biuro@actigda.com</a> logistics: <a href="mailto:logistyka@actigda.com">logistyka@actigda.com</a>
Website	<a href="https://actigda.com/">https://actigda.com/</a>

### PRODUCT IDENTIFICATION

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Product name	<ol style="list-style-type: none"><li>1. GDA ActiMat &amp; GDA ActiTex</li><li>2. GDA ActiMat C &amp; GDA ActiTex C</li><li>3. GDA SolidMat</li><li>4. GDA ActiStop sealing profile</li></ol>
Place(s) of production	Gdańsk, Poland

## EPD INFORMATION

EPDs of construction products may not be comparable if they do not comply with EN 15804 and if they are not compared in a building context.

EPD Poland program operator	Multicert Sp. z o.o. Ul. Mydlarska 47, 04-690 Warszawa, Poland <a href="http://www.epd.org.pl">www.epd.org.pl</a> , <a href="mailto:epd@epd.org.pl">epd@epd.org.pl</a>
EPD standards	This EPD is in accordance with EN 15804+A2 and ISO 14025 standards.
Product category rules	The CEN standard EN 15804+A2 serves as the core PCR.
EPD verification	Independent verification of this EPD and data, according to ISO 14025: <input type="checkbox"/> Internal certification <input checked="" type="checkbox"/> External verification
EPD verifier	Izabela Sztamberek-Sochan, Ph.D.
EPD number	EPD-P 05.08.2025
Registration	EPD Polska <a href="http://www.epd.org.pl">www.epd.org.pl</a>
Publishing date	12 August 2025
EPD valid until	12 August 2030
Reasons for performing LCA	B2B

### Accountability

The EPD Holder is responsible for the information provided and evidence. Multicert Sp. z o.o. does not hold responsibility for the manufacturer information, life cycle assessment data nor supporting evidence.

# COMPANY INFORMATION

## HOLDER OF THE EPD

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GDA Sp. z o.o.  
ul. Maszynowa 30 80-298 Gdańsk, Poland

## FACTORY PLANT / MANUFACTURER

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GDA Sp. z o.o.  
ul. Maszynowa 30, 80-298 Gdańsk, Poland

## COMPANY PROFILE

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GDA Sp. z o.o., headquartered in Gdańsk, Poland, is a leading manufacturer of high-performance waterproofing and sealing systems for geotechnical and civil engineering applications. The company specializes in the production of geosynthetic clay liners (GCLs), mineral composite mats and polymer-enhanced sealing profiles marketed under the brands GDA ActiMat, GDA ActiMat C, GDA ActiTex, GDA ActiTex C, GDA SolidMat, and GDA ActiStop.

The company's manufacturing facility, located in Gdańsk, is equipped with a modern production line for needle-punched geosynthetic barriers and advanced extrusion technologies. The plant integrates raw material dosing, multi-layer textile lamination, bentonite filling, and mechanical bonding processes to ensure consistent product quality and performance.

The company operates in accordance with a certified quality management system compliant with EN ISO 9001, ensuring robust process control and product reliability. In line with its environmental and occupational health commitments, GDA has also implemented management systems in accordance with EN ISO 14001 and ISO 45001, respectively. GDA's in-house laboratory and development team continuously work to improve material performance, durability, and environmental compatibility of its products. This includes the optimization of bentonite composites and polymer-enhanced profiles used in landfill engineering, tunnel waterproofing, and hydraulic barrier systems. The integration of vertically controlled processes – from raw material selection through to product finalization – allows GDA to maintain full traceability and consistent technical performance across its product range.

Thanks to its strategic location in northern Poland and well-established logistics network, GDA Sp. z o.o. efficiently supplies national and international construction markets. The company's customer base includes infrastructure contractors, environmental engineering

firms, and system integrators across Europe and beyond. GDA is committed to innovation, sustainability, and long-term value creation in geosynthetic barrier technology.

# PRODUCT INFORMATION

## PRODUCT DESCRIPTION

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The product groups covered by this EPD declaration include:

### 1. GDA ActiMat & GDA ActiMat C



**ActiMat** is a high specification needlepunched geosynthetic clay liner, comprising of sodium bentonite encapsulated between two or more woven and non-woven geotextiles. It features an integrated self-seaming overlap technology, eliminating the need for additional edge treatment during installation. Designed for use in environmental and civil engineering applications, ActiMat provides effective and durable hydraulic sealing in water reservoirs, dams, canals, embankments, landfills, secondary containment systems, and transport infrastructure. Key advantages include self-healing properties, robust construction, minimal subgrade preparation, rapid installation, and suitability for all-weather conditions—including wet and frozen surfaces.

Materials used in production include:

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- Bentonite
- Polypropylene (woven & nonwoven fabric)
- Tap water

**ActiMat C** is a variant of the standard ActiMat geosynthetic clay liner, additionally laminated on the woven fabric side with a polyethylene–ethylene vinyl acetate (PE+EVA) film following the needle-punching process. This polymeric coating significantly enhances the membrane’s waterproofing performance, chemical resistance, and mechanical durability, particularly in demanding subgrade or high-moisture environments.

Materials used in production include:

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- Bentonite
- Polypropylene (woven & nonwoven fabric)
- Polyethylene (Foil - part PE)
- Ethylene-vinyl acetate (Foil - part EVA)
- Tap water

## 2. GDA ActiTex & GDA ActiTex C

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**GDA Actitex**- an active waterproofing membrane of high strength geotextiles encapsulating a sodium bentonite layer between non-woven & woven geotextile which are needle punched together. Bentonite when in contact with water become dense gel which ensures perfect protection against water. Swelling pressure of bentonite causes self-healing of the waterproofing. Optionally material can be coated with polymeric film. ActiTex is used in below-ground structures, tunnels, green roofs, and property-line foundations such as secant or sheet pile walls, particularly where permanent or intermittent hydrostatic pressure is expected. Its key advantages include active self-healing, excellent substrate conformity, mechanical bonding to prevent water tracking, resistance to freeze-thaw cycles, and suitability for all-weather installation. The membrane is VOC-free and maintains performance through repeated wet-dry conditions.

Materials used in production include:

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- Bentonite
- Polypropylene (woven & nonwoven fabric)
- Tap water

**ActiTex C** is a variant of the standard ActiTex active waterproofing membrane, additionally laminated on the woven fabric side with a polyethylene–ethylene vinyl acetate (PE+EVA) film following the needle-punching process.

Materials used in production include:

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- Bentonite
- Polypropylene (woven & nonwoven fabric)
- Polyethylene (Foil - part PE)
- Ethylene-vinyl acetate (Foil - part EVA)
- Tap water

### 3. GDA SolidMat

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**SolidMat** is a high-performance geocomposite consisting of a specialized mineral blend encapsulated between one woven and two non-woven geotextiles, needlepunched for structural integrity. Upon contact with water, the core solidifies into a rigid, durable layer with high tensile and puncture strength, forming a permanent barrier. The product is used for slope stabilization, subgrade reinforcement, liner protection, and as a hydraulic barrier in landfills, ponds, canals, and containment areas. Key advantages include robust construction, minimal subgrade preparation, fast installation, and long-term performance under demanding site conditions.

Materials used in production include:

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- Cement + mineral aggregate (Concrete mix)
- Poliester (nonwoven fabric)
- Polypropylene (woven fabric)

#### 4. GDA ActiStop

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**ActiStop** is a hydrophilic strip waterstop composed of a formulated blend of sodium bentonite and butyl rubber. Designed for construction joints in concrete structures, it actively swells upon contact with water, sealing against hydrostatic pressure by self-injecting into voids, honeycombs, and minor cracks. It is used in in-situ concrete joints, pipe penetrations, and new-to-existing concrete interfaces, offering flexibility for irregular surfaces and complex geometries. Key benefits include high swelling capacity, resistance to over 6 bar hydrostatic pressure, compatibility with various substrates, simple on-site installation through butt-jointing, and reliable performance across wet-dry and freeze-thaw cycles.

Materials used in production include:

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- Polyisobutene
- Iron black (black pigment)
- Milled bentonite
- Plastomeric resin (EVA)
- Butyl rubber

## PRODUCT RAW MATERIAL COMPOSITION

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PRODUCT VARIANT	GDA ACTIMAT	GDA ACTIMAT C	GDA ACTITEX	GDA ACTITEX C
BENTONITE	76%	74%	76%	74%
POLYPROPYLENE (NONWOVEN)	3%	3%	3%	3%
POLYPROPYLENE (WOVEN)	2%	2%	2%	2%
TAP WATER	19%	18%	19%	18%
POLYETHYLENE	-	2%	-	2%
ETHYLENE-VINYL ACETATE	-	1%	-	1%

PRODUCT VARIANT	GDA SOLIDMAT
CEMENT 33% + MINERAL AGGREGATE 67%	93%
POLIESTER	6%
POLYPROPYLENE	1%

PRODUCT VARIANT	GDA ACTISTOP
MINERAL FILLERS	approx. 80%
SYNTHETIC POLYMERS (E.G. RUBBER AND PLASTOMERS)	approx. 20%
PIGMENTS	<1%

## REFERENCE STANDARDS

The products covered by this Environmental Product Declaration are manufactured in accordance with the following standards:

### **EN 13361**

*Geosynthetic barriers - Characteristics required for use in the construction of reservoirs and dams.*

**EN 13362**

*Geosynthetic Barriers - Characteristics required for use in the construction of canals.*

**EN 13492**

*Geosynthetic barriers - Characteristics required for use in the construction of liquid waste disposal sites, transfer stations or secondary containment.*

**EN 13491**

*Geosynthetic barriers - Characteristics required for use in the construction of tunnels and associated underground structures.*

**EN 15382**

*Geosynthetic barriers - Characteristics required for use in transportation infrastructure.*

The products meet the quality, execution and conformity assessment requirements as specified in the above standards.

## **SUBSTANCES, REACH - VERY HIGH CONCERN**

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The product does not contain any REACH SVHC substances in amounts greater than 0,1% (1000 ppm).

# PRODUCT LIFE-CYCLE

## RAW MATERIALS PROCUREMENT (A1-A2)

**Modules A1 and A2** cover the extraction, processing, and transport of raw materials used in the production of GDA geosynthetic and sealing systems.

**Module A1** includes the complete lifecycle stages of raw material production, starting from the extraction of natural resources, through refining and processing, up to the delivery of processed materials to the GDA manufacturing facility in Gdańsk, Poland. For GDA ActiMat and GDA ActiTex the primary components include bentonite, nonwoven and woven geotextiles, and process water while polyethylene (PE) and ethylene-vinyl acetate (EVA) films are additionally used for lamination in case of GDA ActiMat C and GDA ActiTex C. For GDA ActiStop waterproof sealing profiles, the key raw materials are polyisobutene, milled bentonite, black pigment, plastomeric resin, and butyl rubber. SolidMat is composed of a mineral concrete mixture reinforced with nonwoven and woven geotextiles. All materials have been modeled using background data from the ecoinvent v 3.9.1 database. No supplier-specific EPDs have been used.

**Module A2** comprises the transport of all raw and intermediate materials to the GDA production site. Transportation is modeled based on Polish and European average data for truck and ship transport, using regionalized fuel consumption and emissions datasets from ecoinvent v 3.9.1.

Only materials and processes contributing more than 1% of the total product mass or environmental impact are included, in accordance with the cut-off criteria defined in EN 15804+A2.

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## MANUFACTURING AND PACKAGING (A3)

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The production process for sealing products at GDA Sp. z o.o. begins with the receipt of high-quality raw materials such as bentonite, textiles, synthetic materials, concrete, and polymers. These components are properly prepared and mixed according to developed technologies, then formed on automated production lines—resulting in mats, sealing profiles, or other waterproofing products.

The products may be further reinforced with foil layers or laminates to increase impermeability and mechanical resistance. The manufacturing process involves multiple quality control steps, both during raw material preparation and throughout the production of finished elements. Key technical parameters—such as strength, watertightness, and uniformity of layers—are monitored by the company's in-house laboratory.

Finished products are cut or packaged in accordance with technical requirements and their intended use. They then go through the packaging stage, where appropriately selected packaging materials (including films, straps, spacers, and pallets) are used to ensure product protection during transportation and storage. Every production batch is marked to ensure complete identification and traceability.

## TRANSPORT TO CUSTOMER (A4)

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Finished products from GDA Sp. z o.o., such as bentonite mats, sealing profiles, or composite mats, are delivered to customers both domestically and internationally using various modes of transportation. Depending on the order size, destination, and client requirements, different means may be used—ranging from trucks of different payload capacities, to multimodal transport (such as road combined with rail or sea), with maritime shipping utilized for international deliveries. The method and route of delivery are selected on a case-by-case basis, taking into account the specifics of the product, shipment size, and recipient location.

The environmental impacts related to transport are modeled based on the actual share of different transport means and average distances for each product group.

## PRODUCT END OF LIFE (C1-C4, D)

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At the end of life, no dedicated deinstallation or removal processes are carried out for bentonite mats, cementitious mats, or waterproof sealing profiles. These products are left in situ (in the construction or ground). Indicator values for modules C1-C4 are declared as '0' because the end-of-life scenario assumes the product remains in situ (no activity), in accordance with EN 15804+A2, Clause 7.2.2.

Module C4 (End-of-life stage). The products covered by this EPD are permanently installed waterproofing and sealing systems that remain integrated with the building structure or embedded in the ground throughout the entire service life and beyond. At end of life, these products are not removed, extracted, or separately processed. They remain in situ as part of the demolished structure or ground material. In accordance with EN 15804+A2, Clause 7.2.2, when no deinstallation, removal, waste processing, or disposal activity occurs, the environmental impacts for module C4 shall be declared as zero ('0'). This scenario reflects the actual end-of-life practice for permanently installed geosynthetic barriers and sealing profiles, which are not designed for recovery and do not leave the system boundary as waste requiring active disposal treatment. No re-use, recycling, or energy recovery is involved for the main product. Any potential environmental impacts associated with the long-term presence of these materials in the ground or within demolished structures are outside the scope of this declaration and are not accounted for in modules C1-C4.

Module D (benefits and loads beyond the system boundary) is included where relevant and covers only potential loads and benefits from energy recovery of packaging waste (e.g. incineration with energy recovery), if such treatment occurs during production (A3) in accordance with the system boundary approach and as required by EN 15804.

No additional end-of-life processes or secondary material recovery are modelled for the product itself.

# LIFE-CYCLE ASSESSMENT

## LIFE-CYCLE ASSESSMENT INFORMATION

Period for data	2024 year
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## DECLARED AND FUNCTIONAL UNIT

Product	Declared unit	Mass per Declared Unit [kg]
1. GDA ActiMat	1 m <sup>2</sup>	5,925
2. GDA ActiMat C	1 m <sup>2</sup>	6,105
3. GDA ActiTex	1 m <sup>2</sup>	5,925
2. GDA ActiTex C	1 m <sup>2</sup>	6,105
3. GDA SolidMat	1 m <sup>2</sup>	8,403
4. GDA ActiStop sealing profile	1 linear m	0,717

## BIOGENIC CARBON CONTENT

The products do not contain biogenic carbon. Small biogenic carbon values result from materials used in packaging.

## SYSTEM BOUNDARY

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The scope of the EPD is "cradle to gate with options, modules C1–C4 and D". The following life cycle modules are included within the declared scope: A1 (Raw material supply), A2 (Transport), A3 (Manufacturing), A4 (Transport to customer), C1 (Deconstruction/demolition), C2 (Transport at end-of-life), C3 (Waste processing), C4 (End-of-life stage), and D (Benefits and loads beyond the system boundary).

Modules C1 (Deconstruction/demolition), C2 (Transport at end-of-life), C3 (Waste processing), and C4 (End-of-life stage) are included within the declared system boundary. However, for the products covered by this EPD, no dedicated deinstallation, removal, transport, waste processing, or final waste treatment activities occur at the end of life.

Bentonite mats, cementitious mats, and waterproof sealing profiles are permanently installed systems that remain integrated with the building structure or embedded in the ground throughout their entire service life and beyond. At end of life, these products remain in situ and do not enter any waste management system.

As a result, there is no activity associated with life cycle modules C1–C4. Therefore, the environmental indicator values for modules C1–C4 are plausibly zero and are declared as "0", in accordance with EN 15804+A2.

Module D (Benefits and loads beyond the system boundary) is included, where relevant, and covers only potential loads and benefits related to energy recovery from packaging waste (e.g. incineration with energy recovery), if such treatment occurs during production (A3) in accordance with the system boundary definition and EN 15804+A2.

Product stage			Assembly stage		Use stage							End of life stage				Beyond the system boundaries
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
X	X	X	X	MND	MND	MND	MND	MND	MND	MND	MND	X	X	X	X	X
Raw materials	Transport	Manufacturing	Transport	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	Deconstr./demo	Transport	Waste processing	End of lifel	Reuse Recovery Recycling

Modules not declared = MND. Modules not relevant = MNR.

## CUT-OFF CRITERIA

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The study does not exclude any modules or processes which are stated mandatory in the EN 15804:2012+A2:2019. The study does not exclude any hazardous materials or substances.

The study includes all major raw material and energy consumption. All inputs and outputs of the unit processes for which data are available are included in the calculations. No individual unit process accounts for more than 1% of the total mass or energy flows has been omitted. The total of all neglected input and output flows does not exceed 5% of total mass or energy usage. The life cycle analysis covers all industrial processes from raw material acquisition through production and distribution.

The production of capital equipment, construction activities, and infrastructure, maintenance and operation of capital equipment, personnel-related activities, energy, and water use related to company management and sales activities are excluded.

## ALLOCATION

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The allocation is carried out in accordance with the provisions of EN 15804. The information provided for the year 2024 includes all geosynthetic clay liners (GCLs), mineral composite mats and polymer-enhanced sealing profiles at GDA's production facility during that year. Due to the similarity in production resources and processing stages, an average based on product weight was applied for each product type. Input and output data from production are inventoried and allocated on a mass basis to the specified declared unit of 1 linear m in case of GDA ActiStop sealing profile and 1m<sup>2</sup> in case of other products.

## DATA QUALITY

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For foreground data, the LCA study relies on high-quality primary data gathered by GDA for the year 2024, including specific manufacturing processes, energy consumption, and average transport distances for material supplies and final product shipments. For key input materials (bentonite, cement, polymers, and geotextiles), representative industry-average datasets were sourced from ecoinvent 3.9.1 database. All relevant background data sets (energy supply, transport processes, waste treatment) have been sourced from the OpenLCA software's database: ecoinvent 3.9.1, which includes consistent and well-documented data sets accessible in the ecoinvent online database or through the ecoinvent database documentation.

## GEOGRAPHIC REPRESENTATIVENESS

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The product system covered by this EPD is manufactured and managed in Poland.

## ESTIMATES AND ASSUMPTIONS

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Where specific and recent primary data were unavailable, the study relied on established industry averages and background data from the ecoinvent 3.9.1 database.

For allocation purposes, a mass-based approach was used for all input and output flows.

Average transport distances for both raw materials and finished products were calculated based on internal company records for the year 2024. Where detailed distances were not available for certain shipments, company-wide averages were applied.

The emission factor for electricity consumption during manufacturing was based on the Emission Factors for Electricity in Poland reported by KOBiZE (National Centre for Emissions Management) in December 2024 (0.701 kg CO<sub>2</sub>e/kWh).

It was assumed that all major raw material and energy inputs have been accounted for, and any neglected flows represent less than 5% of the total mass or energy consumption, with no single flow exceeding 1% (in line with EN 15804+A2).

### **End-of-Life Assumptions:**

No dedicated deinstallation, removal, transport, waste processing, or final waste treatment activities are expected for bentonite mats, cementitious mats, or sealing profiles at end of life. These products remain in situ (in the structure or ground) and do not enter any waste management system. Therefore, no activity occurs in modules C1–C4 and all indicator values for stage C are declared as “0”, in accordance with EN 15804+A2, Clause 7.2.2.

### **Packaging Management:**

Packaging waste generated during the production process (A3) is incinerated with energy recovery. The environmental impacts of this process are included in module A3. Benefits and loads associated with recovered energy are reported in module D.

### General Data Quality and Limitations:

The EPD covers all relevant life cycle stages within the declared scope. Uncertainties arise primarily from the use of generic data for background processes and certain transport legs.

The reference service life was estimated based on typical in-use scenarios and technical documentation, with no additional maintenance assumed during the declared service period.

### Interpretation and Boundary Assumptions:

All system boundary settings and cut-off criteria are harmonized with EN 15804+A2 and applied consistently across material types.

Any secondary material content, recyclability potential, or contribution to module D is described as relevant for energy recovery from packaging.

## MANUFACTURING ENERGY SCENARIO DOCUMENTATION

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Scenario parameter	Value
Electricity data source and quality	Emission Factors for Electricity in Poland reported in December 2024 by KOBiZE - the National Centre for Emissions Management in Poland
Electricity CO <sub>2</sub> e / kWh	0,701 kg CO <sub>2</sub> e / kWh

## TRANSPORT SCENARIO DOCUMENTATION

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The transport scenario considers the average transportation of products from the manufacturing site to customers. The calculation is based on actual shipment data and includes a combination of transport modes: ship, train, and truck (divided into three weight classes: >16 t, 10–16 t, and <10 t). The average transport distance multiplied by the amount of product transported (expressed in t·km) has been used to determine the environmental impacts associated with transport. All transport modes and distances reflect typical delivery routes and transport practices during the reference period.

The distribution across transport modes varies depending on the product type and estimation, with long-distance shipments often carried out by ship or train, and local deliveries completed by truck. The calculated transport scenario is representative of actual logistics and supply chain conditions for the declared products.

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## END OF LIFE SCENARIO DOCUMENTATION

Scenario parameter	Value (per DU)
Declared Unit (DU)	1 m <sup>2</sup> (for mats) / 1 m (for profiles)
Deconstruction / removal activity	0
Transport at end of life	0
Waste processing activity	0
Material recovery (re-use, recycling)	0
Energy recovery	0
Final waste treatment / disposal activity	0

Note: Products remain permanently integrated with the building structure or soil and are not removed at end of life. Therefore, no collection, recovery, or disposal operations occur (all end-of-life processes = 0).

# ENVIRONMENTAL IMPACT DATA

## I) GDA ACTIMAT (DU = 1 m<sup>2</sup>)

### CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2

Impact category	Unit	A1	A2	A3	A4	A5 B1-B7	C1	C2	C3	C4	D
GWP-Total	kg CO <sub>2</sub> eq.	1,18E+00	6,51E-01	1,46E-01	1,21E+00	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,66E-02
GWP-fossil	kg CO <sub>2</sub> eq.	1,17E+00	6,50E-01	1,32E-01	1,21E+00	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,41E-02
GWP-biogenic	kg CO <sub>2</sub> eq.	6,37E-03	-7,10E-05	1,41E-02	9,80E-04	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,54E-03
GWP LULUC	kg CO <sub>2</sub> eq.	8,00E-04	4,90E-04	3,24E-05	6,30E-04	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-7,05E-07
GWP-GHG	kg CO <sub>2</sub> eq.	1,18E+00	6,51E-01	1,41E-01	1,21E+00	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,41E-02
ODP	kg CFC-11 eq.	1,21E-07	1,02E-08	8,92E-10	2,55E-08	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-2,57E-10
AP	mol H <sup>+</sup> eq.	5,79E-03	1,78E-02	7,20E-04	5,82E-03	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	4,18E-07
EP-freshwater	kg P eq.	2,40E-04	2,38E-05	1,20E-04	8,14E-05	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-1,27E-07
EP-marine	kg N eq.	1,28E-03	4,45E-03	1,70E-04	1,46E-03	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,49E-06
EP-terrestrial	mol N eq.	1,44E-02	4,92E-02	9,90E-04	1,56E-02	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	9,70E-06
POCP	kg NMVOC eq.	4,95E-03	1,34E-02	3,00E-04	6,26E-03	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-4,31E-06
ADPE (disc.2)	kg Sb eq.	3,49E-06	5,34E-07	7,58E-08	2,62E-06	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-1,75E-09
ADPF (disc.2)	MJ, (NCV)	3,17E+01	8,14E+00	1,25E+00	1,70E+01	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-9,04E-02
WDP (disc.2)	m <sup>3</sup> World eq.	4,14E-01	2,47E-02	2,33E-02	8,15E-02	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	7,10E-04
Acronyms	GWP-total – Climate change, total global warming potential; GWP-fossil – Climate change, fossil fuels; GWP-biogenic – Climate change, biogenic carbon; GWP-luluc – Climate change, land use and land use change; GHG-GWP – Climate change, global warming potential of greenhouse gas emissions excluding biogenic carbon, ODP – Ozone layer depletion; AP – Acidification of terrestrial and freshwater environments; EP-freshwater – Eutrophication, freshwater; EP-marine – Eutrophication, marine; EP-terrestrial – Eutrophication, terrestrial; POCP – Photochemical ozone formation (smog formation); ADPE – Abiotic depletion, minerals and metals; ADPF – Abiotic depletion, fossil fuels; WDP – Water scarcity (water use deprivation potential); NCV - net calorific value.										
Disclaimer 2	The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.										

## ADDITIONAL ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, PEF

Impact category	Unit	A1	A2	A3	A4	A5 B1-B7	C1	C2	C3	C4	D
PM	Disease Incidence	7,10E-08	2,06E-08	5,02E-09	6,83E-08	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-1,66E-12
IRP (disc.1)	kBq U235 eq.	5,45E-02	4,59E-03	3,40E-03	2,17E-02	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-6,46E-05
ETP-fw (disc.2)	CTUe	6,35E+00	3,98E+00	4,32E-01	8,34E+00	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	3,84E-02
HTP-c (disc.2)	CTUh	3,47E-10	2,79E-10	8,81E-11	5,38E-10	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	7,64E-13
HTP-nc (disc.2)	CTUh	8,14E-09	2,35E-09	1,37E-09	9,93E-09	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	5,63E-11
SQP (disc.2)	Dimensionless	7,17E+00	1,02E+00	2,75E-01	9,47E+00	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-8,10E-04
Acronyms	PM – Particulate matter emissions (potential incidence of disease); IRP – Ionising radiation, human health exposure potential; ETP-fw – Ecotoxicity, freshwater; HTP-c – Human toxicity, cancer effects; HTP-nc – Human toxicity, non-cancer effects; SQP – Land use related impacts, soil quality.										
Disclaimer 1	This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator.										
Disclaimer 2	The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.										

## USE OF NATURAL RESOURCES

Impact category	Unit	A1	A2	A3	A4	A5 B1-B7	C1	C2	C3	C4	D
PERE	MJ, (NCV)	7,99E-01	6,42E-02	1,41E-01	2,54E-01	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-5,60E-04
PERM	MJ, (NCV)	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PERT	MJ, (NCV)	7,99E-01	6,42E-02	1,41E-01	2,54E-01	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-5,60E-04
PENRE	MJ, (NCV)	1,88E+01	8,14E+00	1,25E+00	1,70E+01	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-9,04E-02
PENRM	MJ, (NCV)	1,29E+01	0,00E+00	0,00E+00	0,00E+00	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PENRT	MJ, (NCV)	3,17E+01	8,14E+00	1,25E+00	1,70E+01	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-9,04E-02
SM	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
RSF	MJ, (NCV)	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
NRSF	MJ, (NCV)	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
FW	m3	1,90E-02	8,20E-04	3,40E-03	2,70E-03	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	3,29E-05
Acronyms	<p>PERE – Use of renewable primary energy as energy carriers; PERM – Use of renewable primary energy resources as raw materials; PERT – Total use of renewable primary energy resources (PERE + PERM); PENRE – Use of non-renewable primary energy as energy carriers; PENRM – Use of non-renewable primary energy resources as raw materials; PENRT – Total use of non-renewable primary energy resources (PENRE + PENRM); SM – Use of secondary material; RSF – Use of renewable secondary fuels; NRSF – Use of non-renewable secondary fuels; FW – Net use of fresh water; NCV - net calorific value.</p>										

## WASTE

Impact category	Unit	A1	A2	A3	A4	A5 B1-B7	C1	C2	C3	C4	D
CRU	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
MFR	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
MER	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
EEE	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
EET	MJ	0,00E+00	0,00E+00	8,72E-02	0,00E+00	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Acronyms	CRU – Components for re-use; MFR – Materials for recycling; MER – Materials for energy recovery; EEE – Exported electrical energy; EET – Exported thermal energy.										

## OUTPUT FLOWS

Impact category	Unit	A1	A2	A3	A4	A5 B1-B7	C1	C2	C3	C4	D
HWD	kg	3,04E-05	4,13E-05	1,95E-06	1,10E-04	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-3,76E-07
NHWD	kg	1,74E-03	1,80E-04	2,47E-05	4,70E-04	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-1,12E-06
RWD	kg	1,35E-05	1,06E-06	8,35E-07	5,25E-06	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-1,64E-08
Acronyms	HWD – Hazardous waste disposed; NHWD – Non-hazardous waste disposed; RWD – Radioactive waste disposed.										

## II) GDA ACTIMAT C (DU = 1 m<sup>2</sup>)

### CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2

Impact category	Unit	A1	A2	A3	A4	A5 B1-B7	C1	C2	C3	C4	D
GWP-Total	kg CO2 eq.	1,56E+00	6,62E-01	1,50E-01	1,20E+00	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,71E-02
GWP-fossil	kg CO2 eq.	1,55E+00	6,62E-01	1,36E-01	1,19E+00	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,45E-02
GWP-biogenic	kg CO2 eq.	4,43E-03	-6,21E-05	1,46E-02	2,39E-03	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,62E-03
GWP LULUC	kg CO2 eq.	9,90E-04	4,90E-04	3,34E-05	7,60E-04	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-7,26E-07
GWP-GHG	kg CO2 eq.	1,56E+00	6,63E-01	1,46E-01	1,19E+00	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,45E-02
ODP	kg CFC-11 eq.	1,24E-07	1,05E-08	9,19E-10	2,50E-08	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-2,65E-10
AP	mol H+ eq.	7,20E-03	1,78E-02	7,40E-04	3,81E-03	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	4,30E-07
EP-freshwater	kg P eq.	3,10E-04	2,46E-05	1,20E-04	1,30E-04	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-1,31E-07
EP-marine	kg N eq.	1,55E-03	4,46E-03	1,70E-04	1,13E-03	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,54E-06
EP-terrestrial	mol N eq.	1,72E-02	4,93E-02	1,02E-03	1,19E-02	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	9,99E-06
POCP	kg NMVOC eq.	6,26E-03	1,34E-02	3,10E-04	5,24E-03	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-4,44E-06
ADPE (disc.2)	kg Sb eq.	4,54E-06	5,61E-07	7,81E-08	2,57E-06	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-1,80E-09
ADPF (disc.2)	MJ, (NCV)	4,50E+01	8,30E+00	1,29E+00	1,71E+01	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-9,32E-02
WDP (disc.2)	m3 World eq.	7,62E-01	2,55E-02	2,40E-02	1,14E-01	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	7,40E-04
Acronyms	GWP-total – Climate change, total global warming potential; GWP-fossil – Climate change, fossil fuels; GWP-biogenic – Climate change, biogenic carbon; GWP-luluc – Climate change, land use and land use change; GHG-GWP – Climate change, global warming potential of greenhouse gas emissions excluding biogenic carbon, ODP – Ozone layer depletion; AP – Acidification of terrestrial and freshwater environments; EP-freshwater – Eutrophication, freshwater; EP-marine – Eutrophication, marine; EP-terrestrial – Eutrophication, terrestrial; POCP – Photochemical ozone formation (smog formation); ADPE – Abiotic depletion, minerals and metals; ADPF – Abiotic depletion, fossil fuels; WDP – Water scarcity (water use deprivation potential); NCV - net calorific value.										
Disclaimer 2	The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.										

## ADDITIONAL ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, PEF

Impact category	Unit	A1	A2	A3	A4	A5 B1-B7	C1	C2	C3	C4	D
PM	Disease Incidence	8,50E-08	2,12E-08	5,17E-09	7,33E-08	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-1,71E-12
IRP (disc.1)	kBq U235 eq.	8,55E-02	4,85E-03	3,50E-03	4,96E-02	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-6,66E-05
ETP-fw (disc.2)	CTUe	7,20E+00	4,07E+00	4,45E-01	8,20E+00	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	3,96E-02
HTP-c (disc.2)	CTUh	4,53E-10	2,84E-10	9,08E-11	6,45E-10	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	7,87E-13
HTP-nc (disc.2)	CTUh	1,02E-08	2,45E-09	1,41E-09	1,03E-08	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	5,80E-11
SQP (disc.2)	Dimensionless	8,01E+00	1,11E+00	2,84E-01	1,03E+01	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-8,30E-04
Acronyms	PM – Particulate matter emissions (potential incidence of disease); IRP – Ionising radiation, human health exposure potential; ETP-fw – Ecotoxicity, freshwater; HTP-c – Human toxicity, cancer effects; HTP-nc – Human toxicity, non-cancer effects; SQP – Land use related impacts, soil quality.										
Disclaimer 1	This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator.										
Disclaimer 2	The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.										

## USE OF NATURAL RESOURCES

Impact category	Unit	A1	A2	A3	A4	A5 B1-B7	C1	C2	C3	C4	D
PERE	MJ, (NCV)	1,16E+00	6,70E-02	1,46E-01	4,70E-01	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-5,80E-04
PERM	MJ, (NCV)	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PERT	MJ, (NCV)	1,16E+00	6,70E-02	1,46E-01	4,70E-01	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-5,80E-04
PENRE	MJ, (NCV)	2,44E+01	8,30E+00	6,56E-01	1,71E+01	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-9,32E-02
PENRM	MJ, (NCV)	2,06E+01	0,00E+00	6,30E-01	0,00E+00	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PENRT	MJ, (NCV)	4,50E+01	8,30E+00	1,29E+00	1,71E+01	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-9,32E-02
SM	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
RSF	MJ, (NCV)	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
NRSF	MJ, (NCV)	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
FW	m3	3,59E-02	8,50E-04	3,50E-03	3,82E-03	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	3,39E-05
Acronyms	PERE – Use of renewable primary energy as energy carriers; PERM – Use of renewable primary energy resources as raw materials; PERT – Total use of renewable primary energy resources (PERE + PERM); PENRE – Use of non-renewable primary energy as energy carriers; PENRM – Use of non-renewable primary energy resources as raw materials; PENRT – Total use of non-renewable primary energy resources (PENRE + PENRM); SM – Use of secondary material; RSF – Use of renewable secondary fuels; NRSF – Use of non-renewable secondary fuels; FW – Net use of fresh water; NCV - net calorific value.										

## WASTE

Impact category	Unit	A1	A2	A3	A4	A5 B1-B7	C1	C2	C3	C4	D
CRU	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
MFR	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
MER	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
EEE	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
EET	MJ	0,00E+00	0,00E+00	8,98E-02	0,00E+00	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

## OUTPUT FLOWS

Impact category	Unit	A1	A2	A3	A4	A5 B1-B7	C1	C2	C3	C4	D
HWD	kg	3,70E-05	4,23E-05	2,01E-06	1,00E-04	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-3,87E-07
NHWD	kg	1,85E-03	1,90E-04	2,55E-05	5,70E-04	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-1,15E-06
RWD	kg	2,14E-05	1,13E-06	8,61E-07	1,24E-05	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-1,69E-08
Acronyms	HWD – Hazardous waste disposed; NHWD – Non-hazardous waste disposed; RWD – Radioactive waste disposed.										

### III) GDA ACTITEX (DU = 1 m<sup>2</sup>)

## CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2

Impact category	Unit	A1	A2	A3	A4	A5 B1-B7	C1	C2	C3	C4	D
GWP-Total	kg CO2 eq.	9,68E-01	6,52E-01	1,47E-01	1,34E+00	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,67E-02
GWP-fossil	kg CO2 eq.	1,09E+00	6,52E-01	1,33E-01	1,33E+00	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,42E-02
GWP-biogenic	kg CO2 eq.	-1,25E-01	-7,01E-05	1,43E-02	1,17E-03	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,56E-03
GWP LULUC	kg CO2 eq.	9,00E-04	4,90E-04	3,27E-05	6,70E-04	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-7,11E-07
GWP-GHG	kg CO2 eq.	1,10E+00	6,52E-01	1,42E-01	1,34E+00	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,42E-02
ODP	kg CFC-11 eq.	1,38E-08	1,02E-08	9,00E-10	2,87E-08	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-2,59E-10
AP	mol H+ eq.	5,55E-03	1,78E-02	7,30E-04	4,31E-03	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	4,21E-07
EP-freshwater	kg P eq.	2,40E-04	2,39E-05	1,20E-04	9,29E-05	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-1,28E-07
EP-marine	kg N eq.	1,25E-03	4,45E-03	1,70E-04	1,08E-03	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,50E-06
EP-terrestrial	mol N eq.	1,42E-02	4,92E-02	1,00E-03	1,13E-02	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	9,78E-06
POCP	kg NMVOC eq.	4,79E-03	1,34E-02	3,10E-04	5,48E-03	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-4,34E-06
ADPE (disc.2)	kg Sb eq.	3,26E-06	5,37E-07	7,64E-08	3,02E-06	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-1,77E-09
ADPF (disc.2)	MJ, (NCV)	2,85E+01	8,15E+00	1,26E+00	1,90E+01	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-9,12E-02
WDP (disc.2)	m3 World eq.	3,90E-01	2,48E-02	2,35E-02	9,29E-02	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	7,20E-04
Acronyms	GWP-total – Climate change, total global warming potential; GWP-fossil – Climate change, fossil fuels; GWP-biogenic – Climate change, biogenic carbon; GWP-luluc – Climate change, land use and land use change; GHG-GWP – Climate change, global warming potential of greenhouse gas emissions excluding biogenic carbon, ODP – Ozone layer depletion; AP – Acidification of terrestrial and freshwater environments; EP-freshwater – Eutrophication, freshwater; EP-marine – Eutrophication, marine; EP-terrestrial – Eutrophication, terrestrial; POCP – Photochemical ozone formation (smog formation); ADPE – Abiotic depletion, minerals and metals; ADPF – Abiotic depletion, fossil fuels; WDP – Water scarcity (water use deprivation potential); NCV - net calorific value.										
Disclaimer 2	The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.										

## ADDITIONAL ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, PEF

Impact category	Unit	A1	A2	A3	A4	A5 B1-B7	C1	C2	C3	C4	D
PM	Disease Incidence	6,92E-08	2,07E-08	5,07E-09	7,79E-08	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-1,67E-12
IRP (disc.1)	kBq U235 eq.	5,08E-02	4,62E-03	3,42E-03	2,50E-02	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-6,52E-05
ETP-fw (disc.2)	CTUe	6,36E+00	3,99E+00	4,36E-01	9,30E+00	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	3,87E-02
HTP-c (disc.2)	CTUh	4,95E-10	2,80E-10	8,88E-11	5,96E-10	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	7,71E-13
HTP-nc (disc.2)	CTUh	7,87E-09	2,36E-09	1,38E-09	1,14E-08	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	5,67E-11
SQP (disc.2)	Dimensionless	1,87E+01	1,03E+00	2,78E-01	1,11E+01	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-8,10E-04
Acronyms	PM – Particulate matter emissions (potential incidence of disease); IRP – Ionising radiation, human health exposure potential; ETP-fw – Ecotoxicity, freshwater; HTP-c – Human toxicity, cancer effects; HTP-nc – Human toxicity, non-cancer effects; SQP – Land use related impacts, soil quality.										
Disclaimer 1	This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator.										
Disclaimer 2	The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.										

## USE OF NATURAL RESOURCES

Impact category	Unit	A1	A2	A3	A4	A5 B1-B7	C1	C2	C3	C4	D
PERE	MJ, (NCV)	9,72E-01	6,45E-02	1,43E-01	2,91E-01	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-5,70E-04
PERM	MJ, (NCV)	1,90E+00	0,00E+00	0,00E+00	0,00E+00	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PERT	MJ, (NCV)	2,87E+00	6,45E-02	1,43E-01	2,91E-01	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-5,70E-04
PENRE	MJ, (NCV)	1,99E+01	8,15E+00	1,26E+00	1,90E+01	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-9,12E-02
PENRM	MJ, (NCV)	8,60E+00	0,00E+00	0,00E+00	0,00E+00	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PENRT	MJ, (NCV)	2,85E+01	8,15E+00	1,26E+00	1,90E+01	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-9,12E-02
SM	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
RSF	MJ, (NCV)	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
NRSF	MJ, (NCV)	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
FW	m3	1,78E-02	8,20E-04	3,43E-03	3,07E-03	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	3,32E-05
Acronyms	PERE – Use of renewable primary energy as energy carriers; PERM – Use of renewable primary energy resources as raw materials; PERT – Total use of renewable primary energy resources (PERE + PERM); PENRE – Use of non-renewable primary energy as energy carriers; PENRM – Use of non-renewable primary energy resources as raw materials; PENRT – Total use of non-renewable primary energy resources (PENRE + PENRM); SM – Use of secondary material; RSF – Use of renewable secondary fuels; NRSF – Use of non-renewable secondary fuels; FW – Net use of fresh water; NCV - net calorific value.										

## WASTE

Impact category	Unit	A1	A2	A3	A4	A5 B1-B7	C1	C2	C3	C4	D
CRU	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
MFR	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
MER	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
EEE	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
EET	MJ	0,00E+00	0,00E+00	8,79E-02	0,00E+00	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Acronyms	CRU – Components for re-use; MFR – Materials for recycling; MER – Materials for energy recovery; EEE – Exported electrical energy; EET – Exported thermal energy.										

## OUTPUT FLOWS

Impact category	Unit	A1	A2	A3	A4	A5 B1-B7	C1	C2	C3	C4	D
HWD	kg	3,02E-05	4,14E-05	1,96E-06	1,20E-04	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-3,79E-07
NHWD	kg	1,98E-03	1,80E-04	2,50E-05	5,30E-04	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-1,13E-06
RWD	kg	1,25E-05	1,07E-06	8,42E-07	6,06E-06	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-1,66E-08
Acronyms	HWD – Hazardous waste disposed; NHWD – Non-hazardous waste disposed; RWD – Radioactive waste disposed.										

## IV) GDA ACTITEX C (DU = 1 m<sup>2</sup>)

### CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2

Impact category	Unit	A1	A2	A3	A4	A5 B1-B7	C1	C2	C3	C4	D
GWP-Total	kg CO2 eq.	1,35E+00	6,64E-01	1,52E-01	1,13E+00	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,72E-02
GWP-fossil	kg CO2 eq.	1,48E+00	6,63E-01	1,37E-01	1,13E+00	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,46E-02
GWP-biogenic	kg CO2 eq.	-1,27E-01	-6,12E-05	1,47E-02	1,03E-03	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,64E-03
GWP LULUC	kg CO2 eq.	1,09E-03	4,90E-04	3,37E-05	5,60E-04	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-7,32E-07
GWP-GHG	kg CO2 eq.	1,48E+00	6,64E-01	1,47E-01	1,13E+00	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,46E-02
ODP	kg CFC-11 eq.	1,76E-08	1,05E-08	9,27E-10	2,46E-08	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-2,67E-10
AP	mol H+ eq.	6,96E-03	1,78E-02	7,50E-04	2,47E-03	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	4,34E-07
EP-freshwater	kg P eq.	3,00E-04	2,47E-05	1,20E-04	8,09E-05	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-1,32E-07
EP-marine	kg N eq.	1,52E-03	4,46E-03	1,70E-04	6,20E-04	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,55E-06
EP-terrestrial	mol N eq.	1,70E-02	4,93E-02	1,03E-03	6,31E-03	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,01E-05
POCP	kg NMVOC eq.	6,10E-03	1,34E-02	3,20E-04	3,83E-03	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-4,47E-06
ADPE (disc.2)	kg Sb eq.	4,31E-06	5,64E-07	7,87E-08	2,66E-06	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-1,82E-09
ADPF (disc.2)	MJ, (NCV)	4,18E+01	8,31E+00	1,30E+00	1,62E+01	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-9,39E-02
WDP (disc.2)	m3 World eq.	7,37E-01	2,55E-02	2,42E-02	8,07E-02	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	7,40E-04
Acronyms	GWP-total – Climate change, total global warming potential; GWP-fossil – Climate change, fossil fuels; GWP-biogenic – Climate change, biogenic carbon; GWP-luluc – Climate change, land use and land use change; GHG-GWP – Climate change, global warming potential of greenhouse gas emissions excluding biogenic carbon, ODP – Ozone layer depletion; AP – Acidification of terrestrial and freshwater environments; EP-freshwater – Eutrophication, freshwater; EP-marine – Eutrophication, marine; EP-terrestrial – Eutrophication, terrestrial; POCP – Photochemical ozone formation (smog formation); ADPE – Abiotic depletion, minerals and metals; ADPF – Abiotic depletion, fossil fuels; WDP – Water scarcity (water use deprivation potential); NCV - net calorific value.										
Disclaimer 2	The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.										

## ADDITIONAL ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, PEF

Impact category	Unit	A1	A2	A3	A4	A5 B1-B7	C1	C2	C3	C4	D
PM	Disease Incidence	8,32E-08	2,13E-08	5,22E-09	6,67E-08	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-1,72E-12
IRP (disc.1)	kBq U235 eq.	8,18E-02	4,88E-03	3,53E-03	2,21E-02	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-6,71E-05
ETP-fw (disc.2)	CTUe	7,21E+00	4,07E+00	4,49E-01	7,94E+00	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	3,99E-02
HTP-c (disc.2)	CTUh	6,01E-10	2,84E-10	9,15E-11	5,08E-10	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	7,94E-13
HTP-nc (disc.2)	CTUh	9,93E-09	2,45E-09	1,42E-09	9,92E-09	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	5,84E-11
SQP (disc.2)	Dimensionless	1,95E+01	1,12E+00	2,86E-01	9,61E+00	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-8,40E-04
Acronyms	PM – Particulate matter emissions (potential incidence of disease); IRP – Ionising radiation, human health exposure potential; ETP-fw – Ecotoxicity, freshwater; HTP-c – Human toxicity, cancer effects; HTP-nc – Human toxicity, non-cancer effects; SQP – Land use related impacts, soil quality.										
Disclaimer 1	This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator.										
Disclaimer 2	The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.										

## USE OF NATURAL RESOURCES

Impact category	Unit	A1	A2	A3	A4	A5 B1-B7	C1	C2	C3	C4	D
PERE	MJ, (NCV)	3,23E+00	6,73E-02	1,47E-01	2,56E-01	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-5,90E-04
PERM	MJ, (NCV)	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PERT	MJ, (NCV)	3,23E+00	6,73E-02	1,47E-01	2,56E-01	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-5,90E-04
PENRE	MJ, (NCV)	4,18E+01	8,32E+00	1,30E+00	1,62E+01	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-9,39E-02
PENRM	MJ, (NCV)	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PENRT	MJ, (NCV)	4,18E+01	8,32E+00	1,30E+00	1,62E+01	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-9,39E-02
SM	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
RSF	MJ, (NCV)	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
NRSF	MJ, (NCV)	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
FW	m3	3,47E-02	8,50E-04	3,53E-03	2,67E-03	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	3,42E-05
Acronyms	<p>PERE – Use of renewable primary energy as energy carriers; PERM – Use of renewable primary energy resources as raw materials; PERT – Total use of renewable primary energy resources (PERE + PERM); PENRE – Use of non-renewable primary energy as energy carriers; PENRM – Use of non-renewable primary energy resources as raw materials; PENRT – Total use of non-renewable primary energy resources (PENRE + PENRM); SM – Use of secondary material; RSF – Use of renewable secondary fuels; NRSF – Use of non-renewable secondary fuels; FW – Net use of fresh water; NCV - net calorific value.</p>										

## WASTE

Impact category	Unit	A1	A2	A3	A4	A5 B1-B7	C1	C2	C3	C4	D
CRU	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
MFR	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
MER	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
EEE	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
EET	MJ	0,00E+00	0,00E+00	9,05E-02	0,00E+00	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Acronyms	CRU – Components for re-use; MFR – Materials for recycling; MER – Materials for energy recovery; EEE – Exported electrical energy; EET – Exported thermal energy.										

## OUTPUT FLOWS

Impact category	Unit	A1	A2	A3	A4	A5 B1-B7	C1	C2	C3	C4	D
HWD	kg	3,68E-05	4,24E-05	2,02E-06	1,00E-04	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-3,90E-07
NHWD	kg	2,09E-03	1,90E-04	2,57E-05	4,60E-04	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-1,16E-06
RWD	kg	2,04E-05	1,13E-06	8,68E-07	5,37E-06	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-1,70E-08
Acronyms	HWD – Hazardous waste disposed; NHWD – Non-hazardous waste disposed; RWD – Radioactive waste disposed.										

## V) GDA ACTISTOP (DU = 1 linear m)

### CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2

Impact category	Unit	A1	A2	A3	A4	A5 B1-B7	C1	C2	C3	C4	D
GWP-Total	kg CO2 eq.	2,80E-01	7,58E-02	1,95E-02	1,98E-01	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,22E-03
GWP-fossil	kg CO2 eq.	3,55E-01	7,57E-02	1,77E-02	1,98E-01	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,88E-03
GWP-biogenic	kg CO2 eq.	-7,59E-02	6,53E-05	1,89E-03	1,80E-04	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	3,40E-04
GWP LULUC	kg CO2 eq.	7,50E-04	3,79E-05	4,34E-06	9,75E-05	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-9,43E-08
GWP-GHG	kg CO2 eq.	3,60E-01	7,57E-02	1,89E-02	1,98E-01	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,88E-03
ODP	kg CFC-11 eq.	8,49E-09	1,63E-09	1,19E-10	4,30E-09	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-3,44E-11
AP	mol H+ eq.	1,63E-03	2,40E-04	9,66E-05	4,30E-04	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	5,57E-08
EP-freshwater	kg P eq.	1,10E-04	5,26E-06	1,55E-05	1,41E-05	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-1,70E-08
EP-marine	kg N eq.	4,10E-04	6,09E-05	2,22E-05	1,10E-04	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,99E-07
EP-terrestrial	mol N eq.	3,87E-03	6,40E-04	1,30E-04	1,11E-03	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,30E-06
POCP	kg NMVOC eq.	2,28E-03	3,10E-04	4,06E-05	6,70E-04	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-5,76E-07
ADPE (disc.2)	kg Sb eq.	1,82E-06	1,72E-07	1,01E-08	4,64E-07	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-2,34E-10
ADPF (disc.2)	MJ, (NCV)	1,07E+01	1,08E+00	1,67E-01	2,82E+00	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-1,21E-02
WDP (disc.2)	m3 World eq.	2,17E-01	5,26E-03	3,11E-03	1,40E-02	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	9,55E-05
Acronyms	GWP-total – Climate change, total global warming potential; GWP-fossil – Climate change, fossil fuels; GWP-biogenic – Climate change, biogenic carbon; GWP-luluc – Climate change, land use and land use change; GHG-GWP – Climate change, global warming potential of greenhouse gas emissions excluding biogenic carbon, ODP – Ozone layer depletion; AP – Acidification of terrestrial and freshwater environments; EP-freshwater – Eutrophication, freshwater; EP-marine – Eutrophication, marine; EP-terrestrial – Eutrophication, terrestrial; POCP – Photochemical ozone formation (smog formation); ADPE – Abiotic depletion, minerals and metals; ADPF – Abiotic depletion, fossil fuels; WDP – Water scarcity (water use deprivation potential); NCV - net calorific value.										
Disclaimer 2	The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.										

## ADDITIONAL ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, PEF

Impact category	Unit	A1	A2	A3	A4	A5 B1-B7	C1	C2	C3	C4	D
PM	Disease Incidence	2,04E-08	4,37E-09	6,72E-10	1,16E-08	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-2,23E-13
IRP (disc.1)	kBq U235 eq.	2,61E-02	1,44E-03	4,50E-04	3,89E-03	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-8,65E-06
ETP-fw (disc.2)	CTUe	2,02E+00	5,28E-01	5,78E-02	1,39E+00	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	5,14E-03
HTP-c (disc.2)	CTUh	1,68E-10	3,36E-11	1,18E-11	8,81E-11	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,02E-13
HTP-nc (disc.2)	CTUh	2,58E-09	6,44E-10	1,83E-10	1,72E-09	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	7,52E-12
SQP (disc.2)	Dimensionless	1,01E+01	6,20E-01	3,68E-02	1,66E+00	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-1,10E-04
Acronyms	PM – Particulate matter emissions (potential incidence of disease); IRP – Ionising radiation, human health exposure potential; ETP-fw – Ecotoxicity, freshwater; HTP-c – Human toxicity, cancer effects; HTP-nc – Human toxicity, non-cancer effects; SQP – Land use related impacts, soil quality.										
Disclaimer 1	This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator.										
Disclaimer 2	The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.										

## USE OF NATURAL RESOURCES

Impact category	Unit	A1	A2	A3	A4	A5 B1-B7	C1	C2	C3	C4	D
PERE	MJ, (NCV)	1,36E+00	1,67E-02	1,89E-02	4,48E-02	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-7,55E-05
PERM	MJ, (NCV)	5,30E-01	0,00E+00	0,00E+00	0,00E+00	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PERT	MJ, (NCV)	1,89E+00	1,67E-02	1,89E-02	4,48E-02	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-7,55E-05
PENRE	MJ, (NCV)	7,02E+00	1,08E+00	1,67E-01	2,82E+00	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-1,21E-02
PENRM	MJ, (NCV)	3,70E+00	0,00E+00	0,00E+00	0,00E+00	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PENRT	MJ, (NCV)	1,07E+01	1,08E+00	1,67E-01	2,82E+00	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-1,21E-02
SM	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
RSF	MJ, (NCV)	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
NRSF	MJ, (NCV)	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
FW	m3	5,95E-03	1,70E-04	4,50E-04	4,60E-04	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	4,40E-06
Acronyms	PERE – Use of renewable primary energy as energy carriers; PERM – Use of renewable primary energy resources as raw materials; PERT – Total use of renewable primary energy resources (PERE + PERM); PENRE – Use of non-renewable primary energy as energy carriers; PENRM – Use of non-renewable primary energy resources as raw materials; PENRT – Total use of non-renewable primary energy resources (PENRE + PENRM); SM – Use of secondary material; RSF – Use of renewable secondary fuels; NRSF – Use of non-renewable secondary fuels; FW – Net use of fresh water; NCV - net calorific value.										

## WASTE

Impact category	Unit	A1	A2	A3	A4	A5 B1-B7	C1	C2	C3	C4	D
CRU	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
MFR	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
MER	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
EEE	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
EET	MJ	0,00E+00	0,00E+00	1,17E-02	0,00E+00	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Acronyms	CRU – Components for re-use; MFR – Materials for recycling; MER – Materials for energy recovery; EEE – Exported electrical energy; EET – Exported thermal energy.										

## OUTPUT FLOWS

Impact category	Unit	A1	A2	A3	A4	A5 B1-B7	C1	C2	C3	C4	D
HWD	kg	1,85E-05	6,76E-06	2,60E-07	1,79E-05	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-5,03E-08
NHWD	kg	4,90E-04	3,01E-05	3,31E-06	8,02E-05	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-1,49E-07
RWD	kg	6,65E-06	3,50E-07	1,12E-07	9,45E-07	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-2,20E-09
Acronyms	HWD – Hazardous waste disposed; NHWD – Non-hazardous waste disposed; RWD – Radioactive waste disposed.										

## VI) GDA SOLIDMAT (DU = 1 m<sup>2</sup>)

### CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2

Impact category	Unit	A1	A2	A3	A4	A5 B1-B7	C1	C2	C3	C4	D
GWP-Total	kg CO2 eq.	5,34E+00	8,96E-01	2,07E-01	1,13E+00	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,35E-02
GWP-fossil	kg CO2 eq.	5,31E+00	8,95E-01	1,87E-01	1,13E+00	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,99E-02
GWP-biogenic	kg CO2 eq.	2,57E-02	8,20E-04	2,00E-02	-1,70E-04	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	3,60E-03
GWP LULUC	kg CO2 eq.	3,58E-03	4,40E-04	4,59E-05	8,60E-04	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-9,97E-07
GWP-GHG	kg CO2 eq.	5,32E+00	8,95E-01	2,00E-01	1,13E+00	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,99E-02
ODP	kg CFC-11 eq.	8,04E-06	1,95E-08	1,26E-09	1,74E-08	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-3,64E-10
AP	mol H+ eq.	2,08E-02	1,96E-03	1,02E-03	3,19E-02	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	5,91E-07
EP-freshwater	kg P eq.	1,07E-03	6,36E-05	1,60E-04	4,03E-05	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-1,79E-07
EP-marine	kg N eq.	4,54E-03	4,90E-04	2,30E-04	7,96E-03	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,11E-06
EP-terrestrial	mol N eq.	5,50E-02	5,01E-03	1,40E-03	8,80E-02	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,37E-05
POCP	kg NMVOC eq.	1,91E-02	3,04E-03	4,30E-04	2,39E-02	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-6,09E-06
ADPE (disc.2)	kg Sb eq.	2,10E-05	2,08E-06	1,07E-07	8,94E-07	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-2,48E-09
ADPF (disc.2)	MJ, (NCV)	7,38E+01	1,28E+01	1,77E+00	1,40E+01	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-1,28E-01
WDP (disc.2)	m3 World eq.	1,60E+00	6,35E-02	3,29E-02	4,17E-02	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,01E-03
Acronyms	GWP-total – Climate change, total global warming potential; GWP-fossil – Climate change, fossil fuels; GWP-biogenic – Climate change, biogenic carbon; GWP-luluc – Climate change, land use and land use change; GHG-GWP – Climate change, global warming potential of greenhouse gas emissions excluding biogenic carbon, ODP – Ozone layer depletion; AP – Acidification of terrestrial and freshwater environments; EP-freshwater – Eutrophication, freshwater; EP-marine – Eutrophication, marine; EP-terrestrial – Eutrophication, terrestrial; POCP – Photochemical ozone formation (smog formation); ADPE – Abiotic depletion, minerals and metals; ADPF – Abiotic depletion, fossil fuels; WDP – Water scarcity (water use deprivation potential); NCV - net calorific value.										
Disclaimer 2	The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.										

## ADDITIONAL ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, PEF

Impact category	Unit	A1	A2	A3	A4	A5 B1-B7	C1	C2	C3	C4	D
PM	Disease Incidence	2,18E-07	5,33E-08	7,11E-09	3,40E-08	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-2,34E-12
IRP (disc.1)	kBq U235 eq.	2,60E-01	1,72E-02	4,80E-03	7,76E-03	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-9,15E-05
ETP-fw (disc.2)	CTUe	1,77E+01	6,27E+00	6,11E-01	6,88E+00	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	5,43E-02
HTP-c (disc.2)	CTUh	2,11E-09	4,00E-10	1,25E-10	4,84E-10	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,08E-12
HTP-nc (disc.2)	CTUh	4,11E-08	7,85E-09	1,94E-09	3,86E-09	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	7,96E-11
SQP (disc.2)	Dimensionless	1,76E+01	7,68E+00	3,89E-01	1,40E+00	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-1,14E-03
Acronyms	PM – Particulate matter emissions (potential incidence of disease); IRP – Ionising radiation, human health exposure potential; ETP-fw – Ecotoxicity, freshwater; HTP-c – Human toxicity, cancer effects; HTP-nc – Human toxicity, non-cancer effects; SQP – Land use related impacts, soil quality.										
Disclaimer 1	This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator.										
Disclaimer 2	The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.										

## USE OF NATURAL RESOURCES

Impact category	Unit	A1	A2	A3	A4	A5 B1-B7	C1	C2	C3	C4	D
PERE	MJ, (NCV)	4,14E+00	2,00E-01	2,00E-01	1,09E-01	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-8,00E-04
PERM	MJ, (NCV)	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PERT	MJ, (NCV)	4,14E+00	2,00E-01	2,00E-01	1,09E-01	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-8,00E-04
PENRE	MJ, (NCV)	5,56E+01	1,28E+01	1,77E+00	1,40E+01	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-1,28E-01
PENRM	MJ, (NCV)	1,82E+01	0,00E+00	0,00E+00	0,00E+00	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PENRT	MJ, (NCV)	7,38E+01	1,28E+01	1,77E+00	1,40E+01	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-1,28E-01
SM	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
RSF	MJ, (NCV)	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
NRSF	MJ, (NCV)	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
FW	m3	6,61E-02	2,10E-03	4,81E-03	1,39E-03	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	4,66E-05
Acronyms	<p>PERE – Use of renewable primary energy as energy carriers; PERM – Use of renewable primary energy resources as raw materials; PERT – Total use of renewable primary energy resources (PERE + PERM); PENRE – Use of non-renewable primary energy as energy carriers; PENRM – Use of non-renewable primary energy resources as raw materials; PENRT – Total use of non-renewable primary energy resources (PENRE + PENRM); SM – Use of secondary material; RSF – Use of renewable secondary fuels; NRSF – Use of non-renewable secondary fuels; FW – Net use of fresh water; NCV - net calorific value.</p>										

## WASTE

Impact category	Unit	A1	A2	A3	A4	A5 B1-B7	C1	C2	C3	C4	D
CRU	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
MFR	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
MER	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
EEE	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
EET	MJ	0,00E+00	0,00E+00	1,23E-01	0,00E+00	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Acronyms	CRU – Components for re-use; MFR – Materials for recycling; MER – Materials for energy recovery; EEE – Exported electrical energy; EET – Exported thermal energy.										

## OUTPUT FLOWS

Impact category	Unit	A1	A2	A3	A4	A5 B1-B7	C1	C2	C3	C4	D
HWD	kg	2,82E-03	8,10E-05	2,75E-06	7,03E-05	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-5,32E-07
NHWD	kg	2,73E-02	3,60E-04	3,50E-05	3,20E-04	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-1,58E-06
RWD	kg	6,49E-05	4,18E-06	1,18E-06	1,79E-06	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-2,32E-08
Acronyms	HWD – Hazardous waste disposed; NHWD – Non-hazardous waste disposed; RWD – Radioactive waste disposed.										

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## EPD VERIFICATION

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The verification procedure for this Environmental Product Declaration (EPD) has been carried out in accordance with the requirements of ISO 14025 standards. Once the verification process is complete, the EPD remains valid for a period of 5 years. There is no need to recalculate the parameters contained in the EPD after this period, provided that the data underlying the declaration have not changed substantially.

## EPD CONTRIBUTORS

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Manufacturer representative	Konstanty Kubicki, Chief Operating Officer
EPD verifier	Izabela Sztamberek Sochan, Ph.D.

Note: The sole ownership, liability, and liability of this declaration are with the EPD Owner. Construction product declarations may not be comparable if they do not comply with EN 15804. For detailed information on comparability, please refer to EN 15804 and ISO 14025.

## EPD CERTIFICATION



Reg. No. EPD-P 05.08.2025

# CERTIFICATE

## EPD TYPE III DECLARATION

(ENVIRONMENTAL PRODUCT DECLARATION)

**This document confirms that the Environmental Product Declaration developed by**

GDA Sp. z o.o. for:

- GDA ActiMat & GDA ActiTex
- GDA ActiMat C & GDA ActiTex C
- GDA SolidMat
- GDA ActiStop sealing profile



**manufactured in accordance with standards**

EN 13361, EN 13362, EN 13492, EN 13491, EN 15382

**and that the data contained therein has been prepared correctly.**

Verification carried out by:

*I. Sztamberek*

Izabela Sztamberek Sochan, Ph. D.



Program Manager

*G. Suwara*

Grzegorz Suwara

This document is valid until August 12, 2030, or until EPD is deregistered and its publication on the website [www.epd.org.pl](http://www.epd.org.pl) is discontinued.

EPD Polska Registration Office,  
Warsaw, August 12, 2025

[www.epd.com.pl](http://www.epd.com.pl)