

# Environmental Product Declaration

According to ISO 14025 and EN 15804


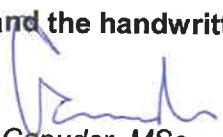



## URSA TERRA and URSA TECTONIC

EPD number  
EPD owner  
EPD Program operator  
Issue date  
Valid until  
This EPD replace

EPD-21/0002  
URSA Slovenija d.o.o., Povhova ulica 2, 8000 Novo mesto  
ZAG EPD  
7. 2. 2024  
29. 11. 2026  
EPD-21/0003, valid from 31. 3. 2022 to 29. 11. 2026



<b>General information</b>	<b>Commercial name</b> URSA TERRA and URSA TECTONIC (mineral wool) Products: 76 R, 64 R (super76), 76 P, PLUS 70/70 SPRING, PLUS 68, 66 Ph, 66 P/Nb, 62 Ph, 62 Ph/Vr						
<b>Program holder:</b> Slovenian National Building And Civil Engineering Institute - ZAG Dimičeva 12 1000 Ljubljana <a href="http://www.zag.si">http://www.zag.si</a>	<b>Owner of the Environmental Product Declaration:</b> URSA SLOVENIJA d.o.o. Povhova ulica 2 8000 Novo mesto <a href="https://www.ursa.si/">https://www.ursa.si/</a>						
<b>Number of the Environmental Product Declaration:</b> EPD-21/0002	<b>Declared unit:</b> 1m <sup>3</sup> of mineral wool						
<b>This Environmental Product Declaration is based on the Product Category Rules (PCR):</b> PCR by IBU: Part B: Mineral insulation materials; PCR code 2.22.2.1; ver. 05, 2014	<b>Scope:</b> A1-A3, A4, A5, C and D						
<b>Issue date:</b> 7. 2. 2024	<b>Verification:</b> <table border="1" style="width: 100%;"> <tr> <td colspan="2" style="text-align: center;">The CEN standard SIST EN 15804 serves as the core Product Category Rule (PCR)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Independent verification of the EPD according to EN ISO 14025</td> </tr> <tr> <td style="text-align: center;"><input checked="" type="checkbox"/> external</td> <td style="text-align: center;"><input type="checkbox"/> internal</td> </tr> </table>	The CEN standard SIST EN 15804 serves as the core Product Category Rule (PCR)		Independent verification of the EPD according to EN ISO 14025		<input checked="" type="checkbox"/> external	<input type="checkbox"/> internal
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<b>Valid until:</b> 29. 11. 2026							
<b>Production plant:</b> URSA SLOVENIJA, d.o.o. Povhova ulica 2 8000 Novo mesto	<b>Title and the handwritten signature of verifier:</b>  Katja Malovrh Rebec, PhD Slovenian National Building And Civil Engineering Institute – ZAG						
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# 1 Product

## 1.1 Product description

URSA products are insulating materials made of mineral and/or glass wool of different properties. This products have a form of felt panels that can be laminated with glass fibre reinforcing fleece. The products are divided into groups according to the thermal conductivity and resistance, density and purpose of use.

Product range: 76 R, 64 R (super76), 76 P, PLUS 70/70 SPRING, PLUS 68, 66 Ph, 66

P/Nb, 62 Ph, 62 Ph/Vr (see Table 1 and Table 2).

## 1.2 Technical Data

The URSA mineral wool product specifications are summarised in Table 1 and Table 2.

All products belong to the fire safety class **A1**.





Technical specifications for URSA TERRA and URSA TECTONIC mineral wool products are:










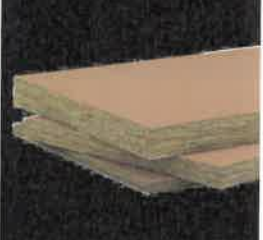




- /MW EN 13162/

Table 1: Review of URSA TERRA and URSA TECTONIC mineral wool products and their properties

URSA TERRA and URSA TECTONIC	Thickness[mm ]	Width [mm]	Length[mm]	Thermal conductivity $\lambda$ [W/mK]	Thermal resistance Rd [m <sup>2</sup> K/W]	Density [kg/m <sup>3</sup> ]	Reference services life [year] (*RSL)
76 R	50–240	1200	3100–15000	0,038	1,05–6,30	15	50
64 R (SUPER 76)	50–160	1200	2500–7600	0,032	1,55–5,00	30	50
76 Ph	45–95	600	1400	0,038	1,15–2,45	15	50
PLUS 70/70 SPRING	40–140	600	1400	0,035	1,10–4,00	21,5	50
PLUS 68 Ph	50–220	600/625	1250	0,034	1,15–6,45	24	50
66 Ph	40–180	600	1400	0,033	1,20–5,45	35	50
66 P/Nb	40–180	600	1400	0,033	1,20–5,45	35	50
62 Ph	50–160	600	1250	0,032	1,55–5,00	45	50
62 Ph/Vr	50–160	600	1250	0,032	1,55–5,00	45	50

Table 2: Description of URSA mineral wool products and their photo

URSA TERRA and URSA TECTONIC	Product photo		Description
76 R			Lightweight insulating felt made of mineral wool. Compressed packed in a ratio of 1: 4.
64 R (SUPER 76)			Clamping felt made of mineral wool, marked on one side with markings for easier cutting. Compressed packed in a ratio of 1: 2.8.

<p>76 Ph</p>			<p>Freestanding insulation board made of mineral wool-water-repellent.</p>
<p>PLUS 70/70 SPRING</p>			<p>Freestanding insulation board made of mineral water-repellent wool.</p>
<p>PLUS 68 Ph</p>			<p>Freestanding insulation board made of mineral water-repellent wool.</p>
<p>66 Ph</p>			<p>Freestanding insulation board made of mineral water-repellent wool.</p>
<p>66 P/Nb</p>			<p>Freestanding mineral water-repellent wool insulation board; laminated with paper.</p>
<p>62 Ph</p>			<p>Freestanding insulation board made of mineral water-repellent wool.</p>
<p>62 Ph/Vr</p>			<p>Facade insulation board of mineral water-repellent wool; laminated on one side with a black reinforced glass veil.</p>



### 1.3 Base materials

The basic materials for the production of insulation products made of mineral wool are inorganic raw materials: processed waste glass, silica sand, soda ( $\text{Na}_2\text{CO}_3$ ), dolomite, limestone, calcite and borax (as a source of  $\text{B}_2\text{O}_3$ ).

All materials, except soda and borax are naturally occurring and are the source of various inorganic oxides.

All URSA products (TERRA and TECTONIC) contain more than 70% recycled raw materials, as stated in a self-declaration in accordance with EN ISO 14021 (Table 3). In the Italian market, the declaration has been verified by ICMQ. All URSA products are potentially recyclable.

Table 1: Recycled content according to EN ISO 14021 for URSA TERRA and URSA TECTONIC

Recycled content according to EN ISO 14021 for URSA TERRA and URSA TECTONIC		
Pre-customer [%]	Post-customer [%]	Total [%]
14	56	70

### 1.4 Manufacturing process

The production process that was included in the environmental footprint assessment for the EPD declaration begins with the acquisition of basic raw materials and transportation to the manufacturing plant. The production process begins with the preparation of the glass mixture and continues with the process of melt-blasting and liquid binder coating. The mixture is then formed into a raw mint. The process of hardening, cooling of the product and mechanical treatment then takes place. Certain products are glued with laminating materials. The finished product is packaged, stored and then transported to the customer.

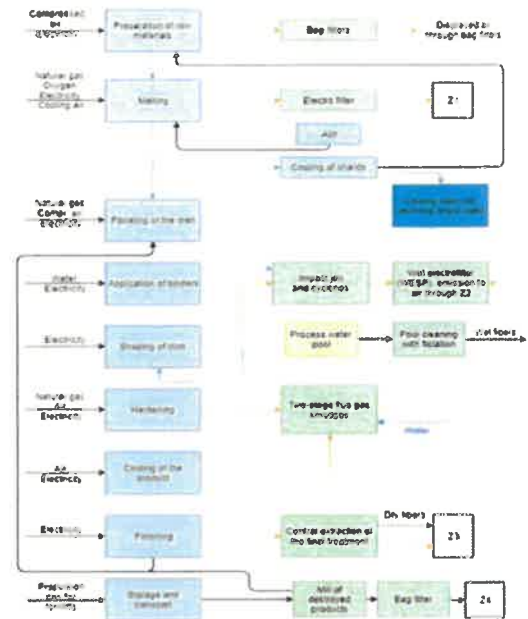


Figure 1: Schematic representation of the production process

### 1.5 Packaging

Auxiliary and packing materials used:

- Colour LDPE foil for primary packaging, supplied in rolls,
- Transparent LDPE foil for secondary packaging in modules and on a pallet (stretch), which is supplied in rolls,
- Wooden pallets: non-standard, supplied specifically for URSA Slovenia.

### 1.6 Further information

The owner of the declaration shall be liable for the underlying information and evidence. Further information about the URSA TERRA and URSA TECTONIC mineral wool insulation materials can be found online, on the manufacturer web page:

<https://www.ursa.si/>

## 2 Product

### 2.1 EPD classification

Type of EPD:

1a) Declaration of a specific product from a manufacturer's plant.

### 2.2 Declared unit

The declared unit was defined in accordance with the Product Category Rules (PCRs) Part B: Mineral insulation materials; PCR code 2.22.2.1; ver. 05, 2014, which are issued by the Institut Bauen und Umwelt e.V. (IBU). The following declared unit was applied:

**1m<sup>3</sup> of mineral wool**

### 2.3 Geographical scope

EPD and LCA report is valid for all URSA TERRA and URSA TECTONIC mineral wool products, manufactured in Slovenia. Data used for calculations were gathered from that production site.

### 2.4 Reference service life (RSL)

The URSA TERRA and URSA TECTONIC mineral wool insulation materials exhibit an estimated service life of 50 years depending on the use conditions.

### 2.5 System boundary

The system boundaries were defined in accordance with the modular principle described in the European standard for Environmental Product Declarations (EPD) EN 15804. This LCA analysis is based on the cradle to gate (A1–A3) with options: modules C1–C4, module D and additional modules A4 and A5. The LCA of the URSA TERRA and URSA TECTONIC mineral wool insulation products covers the following life cycle stages:

**A1:** raw material extraction and processing, processing of secondary material input (e.g. recycling processes);

**A2:** transport to the manufacturer;

**A3:** manufacturing;

including the provision of all materials, products and related energy and water use.

**A4:** transport to the building site;

**A5:** installation into the buildings;

including the provision of all materials, products and related energy and water use.

**C1:** de-construction, demolition;

**C2:** transport to waste processing;

**C3:** waste processing for reuse, recovery and/or recycling;

**C4:** disposal;

including the provision of all materials, products and related energy and water use.

**D:** reuse, recovery and/or recycling potentials, expressed as net impacts and benefits.

The selection of the modules A1–A3, A4, A5, C1, C2, C3, C4 and D, and the exclusion of modules B1–B7 from this LCA analysis was based primarily on the availability, quality and reliability of the data. All data used for the modules A1–A3, A4, A5, C1, C2, C3, C4 and D are based on the measured quantities provided by the manufacturer.

The processing of mineral wool insulation materials at the end-of-life stage (i.e. modules C) was described and conceptualised.

In addition, the selection of the modules A1–A3, A4, A5, C1, C2, C3, C4 and D is also in accordance with modules selected for the

association EPD that was prepared for member companies of the European Association and revised EN 15804+A2 standard.

The manufacturer is a PPA–Europe member and has provided data for the development of the association EPD. Even though this PPA–Europe EPD is an average EPD that cannot be directly compared to the EPDs that will be issued based on this LCA analysis, it nonetheless provides general guidance on what type of LCA analysis is expected by the industry.

It should be noted that the excluded modules (i.e. modules B1–B7) could be calculated as well. However, the calculation of these modules would be based more on assumed and simplified data than on measured data. Further, there were no metric data available that would back up those processes and enable the calculation of environmental impacts by means of a LCA.

As the requirement is to prepare a scientifically solid LCA analysis and thus issue high-quality and representative EPDs, the modules B1–B7 were left out of this LCA analysis primarily due to the lack of reliable data.

Nevertheless, there is no reliable data associated with the installation of the mineral wool into the building (i.e. module A5) and the de-construction or demolition of the mineral wool (i.e. module C1), since both (i.e. installation and demolition) are conducted manually.

The schematic representation of system boundaries can be seen in Figure 2.

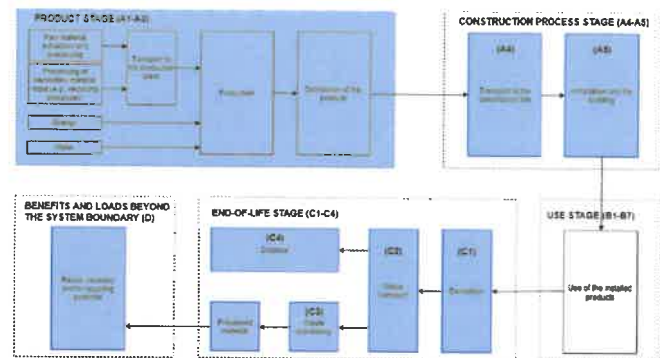


Figure 2: Schematic representation of the system boundaries, with the considered modules highlighted in blue.

## 2.6 Cut-off rules

The exclusion of inputs and outputs was conducted in accordance with the cut-off rules defined in the standard EN 15804:

- All inputs and outputs to the studied system were included in the calculation, for which data are available;
- In the case of insufficient input data or data gaps for a unit process, the cut-off criteria was 1% of the renewable and non-renewable primary energy usage and 1% of the total mass input of that unit process. The total of the neglected input flows per module was a maximum of 5% of the energy usage and the mass.

## 2.7 Background data

The LCA analysis was conducted with the GaBi ts (ver. 10.0.0.71) and Ecoinvent 3.5 modelling software. All processes were modelled based on the inventory data given in the GaBi Professional database and the Ecoinvent 3.5.

## 2.8 Data quality

The quality of the data used for calculations in the LCA analysis correspond to the requirements of EN 15804:

- Generic data were checked for plausibility;

- Data sets were complete according to the system boundary within the limits set by the criteria for the exclusion of inputs and outputs;
- Data were as current as possible. Data sets used for the calculations were valid for the current year and represent a reference year within 10 years for generic data and 5 years for producer specific data;
- The reference year refers to the year which the overall inventory best represents, considering the age/representativeness of the various specific and background data included, i.e. not automatically the year of modelling, calculation or publication year. Validity refers to the date to which the inventory is still judged sufficiently valid with the documented technological and geographical representativeness;
- All datasets were based on 1 year averaged data;
- The time period over which the inputs to and the outputs from the system has been accounted for is 100 years from the year for which the data set is deemed representative.

The data collection was based on a questionnaire prepared by the Slovenian National Building and Civil Engineering Institute (ZAG). Before of collection of the data, it was explained to the manufacturer that the LCA analysis will be as valid as the provided data.

The technological representativeness of any generic data was checked in the literature. The geographical representativeness and the reference period of all considered datasets were also checked. The final mass balance was also checked.

## 2.9 Period under review

The reference year for the data collected for this LCA analysis is 2020.

## 2.10 Allocation

For the product stage (i.e., modules A1–A3), the total consumption of energy and water for the production of 1m<sup>3</sup> of mineral wool was provided by the manufacturer. The values of energy and water consumption in the production of 1m<sup>3</sup> of mineral wool were obtained by proportionally distributing the total consumption of energy and water based on the overall quantity of insulation products.

## 2.11 Comparability

EPD of mineral wool insulation products may not be comparable, if they do not comply with EN 15804.

## 2.12 List of substances

The product does not contain any SVHCs (*Substances of Very High Concern*) /REACH/.



### 3 LCA: Scenarios and additional technical information

#### 3.1 Characteristic product properties Biogenic Carbon

The content and quantities of biogenic carbon depend on products built from wood and biomass. In accordance with standard EN 16449 – Wood and wood-based products – Calculation of biogenic carbon content conversion of wood to carbon dioxide. When products are predominantly made of wood, they may contain large amounts of biogenic carbon (C), which are converted to carbon dioxide (CO<sub>2</sub>) during natural decomposition processes.

#### Information on describing the biogenic Carbon

##### Content at factory gate

Commercial name of the product	Biogenic carbon content of input materials and raw materials [kg C]	Biogenic Carbon Content in accompanying packaging [kg C]
76 R	<5%	1,04E+00
64 R (SUPER 76)	<5%	2,72E+00
76 Ph	<5%	2,19E+00
PLUS 70/70 SPRING	<5%	2,52E+00
PLUS 68 Ph	<5%	2,68E+00
66 Ph	<5%	5,17E+00
66 P/Nb	<5%	4,58E+00
62 Ph	<5%	3,59E+00
62 Ph/Vr	<5%	7,19E+00

### 4 LCA: Results

Table 4: Selected phases of the LCA

SYSTEM BOUNDARY																	
PRODUCT STAGE			CONSTRUCTION PROCESS STAGE		USE STAGE								END OF LIFE STAGE				BENEFITS AND LOADS BEYOND THE SYSTEM BOUNDARIES
Raw material supply	Transport	Production	Transport from the gate to the site	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction / demolition	Transport	Waste processing	Disposal	Reuse-Recovery-Recycling potential	
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D	
☒	☒	☒	MNA	MNA	MNA	MNA	MNA	MNA	MNA	MNA	MNA	☒	☒	☒	☒	☒	☒
The modules of the product lifecycle, which are included in EPD are marked by "X", modules not included are marked with a "MNA" = module not assessed, "MND" = module of indicator nor declared, "MNR" = module not relevant																	

#### 4.1 Indicators of environmental impacts

The environmental impact assessment was calculated according to the standard EN 15804 impact assessment method. The environmental impacts are presented with thirteen indicators (see Table 5).

The tabular representation of all the environmental impact indicators for different versions of the URSA TERRA and URSA TECTONIC mineral wool are summarised from Table 6 to Table 14.

Table 5: Abbreviations and units of indicators of environmental impacts

Indicators of environmental impacts	Abbreviation	Unit
global warming potential total	GWP-total	kg CO <sub>2</sub> equiv
global warming potential fossil fuels	GWP-fossil	kg CO <sub>2</sub> equiv
global warming potential biogenic	GWP-biogenic	kg CO <sub>2</sub> equiv
global warming potential land use and land use change	GWP-luluc	kg CO <sub>2</sub> equiv
depletion potential of the stratospheric ozone layer	ODP	kg CFC 11 equiv
acidification potential, accumulated exceedance	AP	mol H <sup>+</sup> equiv
eutrophication potential, fraction of nutrients reaching freshwater end compartment	EP-freshwater	kg PO <sub>4</sub> <sup>-</sup> equiv
eutrophication potential, fraction of nutrients reaching marine end compartment	EP-marine	kg N equiv
eutrophication potential, accumulated exceedance	EP-terrestrial	kg N equiv
formation potential of tropospheric ozone	POCP	kg NMVOC equiv
abiotic depletion potential for non-fossil resources	APD-minerals&metals	kg Sb equiv
abiotic depletion for fossil resources potential	APD-fossil	MJ, net calorific value
water (user)m deprivation potential, deprivation-weighted water consumption	WDP	m <sup>3</sup> world equiv deprived

Table 6: Indicators of the environmental impacts per 1 m<sup>3</sup> of mineral wool URSA TERRA and URSA TECTONIC 76 R

		76 R								
Abbreviation	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D	
GWP-total	[kg CO <sub>2</sub> eq.]	1.85E+01	4.30E-01	0.00E+00	0.00E+00	1.54E-02	7.71E-04	2.20E-01	-5.60E+00	
GWP-fossil	[kg CO <sub>2</sub> eq.]	1.95E+01	4.28E-01	0.00E+00	0.00E+00	1.54E-02	7.66E-04	2.39E-01	-5.58E+00	
GWP-biogenic	[kg CO <sub>2</sub> eq.]	-1.02E+00	1.97E-04	0.00E+00	0.00E+00	7.07E-06	1.46E-06	-1.89E-02	-1.06E-02	
GWP-luluc	[kg CO <sub>2</sub> eq.]	1.87E-02	1.78E-03	0.00E+00	0.00E+00	6.41E-05	2.82E-06	6.87E-04	-3.85E-04	
ODP	[kg CFC-11 eq.]	2.74E-06	1.45E-16	0.00E+00	0.00E+00	5.21E-18	3.27E-18	8.83E-16	-1.97E-13	
AP	[Mole of H <sup>+</sup> eq.]	8.36E-02	1.35E-03	0.00E+00	0.00E+00	4.86E-05	7.21E-06	1.71E-03	-2.31E-03	
EP-freshwater	[kg P eq.]	2.78E-03	9.31E-07	0.00E+00	0.00E+00	3.35E-08	1.84E-09	4.10E-07	-7.06E-07	
EP-marine	[kg N eq.]	1.44E-02	6.21E-04	0.00E+00	0.00E+00	2.23E-05	3.55E-06	4.40E-04	-8.20E-04	
EP-terrestrial	[Mole of N eq.]	1.72E-01	6.95E-03	0.00E+00	0.00E+00	2.50E-04	3.91E-05	4.84E-03	-8.92E-03	
POCP	[kg NMVOC eq.]	5.54E-02	1.21E-03	0.00E+00	0.00E+00	4.34E-05	1.03E-05	1.33E-03	-2.98E-03	
ADP-m&m	[kg Sb eq.]	2.56E-05	3.68E-08	0.00E+00	0.00E+00	1.32E-09	8.44E-10	2.14E-08	-1.51E-06	
ADP-fossil	[MJ]	4.73E+02	5.65E+00	0.00E+00	0.00E+00	2.03E-01	1.45E-02	3.13E+00	-9.53E+01	
WDP	[m <sup>3</sup> world equiv.]	5.13E+00	1.84E-03	0.00E+00	0.00E+00	6.60E-05	1.30E-04	2.50E-02	6.22E-02	

Table 7: Indicators of the environmental impacts per 1 m<sup>3</sup> of mineral wool URSA TERRA and URSA TECTONIC 64 R (SUPER 76)

		64R (SUPER 76)								
Abbreviation	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D	
GWP-total	[kg CO <sub>2</sub> eq.]	3.67E+01	8.97E-01	0.00E+00	0.00E+00	3.14E-02	1.73E-03	4.48E-01	-6.19E+00	
GWP-fossil	[kg CO <sub>2</sub> eq.]	3.93E+01	8.92E-01	0.00E+00	0.00E+00	3.13E-02	1.72E-03	4.86E-01	-6.16E+00	
GWP-biogenic	[kg CO <sub>2</sub> eq.]	-2.69E+00	4.11E-04	0.00E+00	0.00E+00	1.44E-05	3.29E-06	-3.84E-02	-1.45E-02	
GWP-luluc	[kg CO <sub>2</sub> eq.]	3.81E-02	3.72E-03	0.00E+00	0.00E+00	1.31E-04	6.34E-06	1.40E-03	-9.37E-04	
ODP	[kg CFC-11 eq.]	3.13E-06	3.02E-16	0.00E+00	0.00E+00	1.06E-17	7.35E-18	1.80E-15	-2.03E-13	
AP	[Mole of H <sup>+</sup> eq.]	1.69E-01	2.82E-03	0.00E+00	0.00E+00	9.90E-05	1.62E-05	3.49E-03	-3.15E-03	
EP-freshwater	[kg P eq.]	5.59E-03	1.94E-06	0.00E+00	0.00E+00	6.81E-08	4.12E-09	8.35E-07	-1.87E-06	
EP-marine	[kg N eq.]	2.93E-02	1.30E-03	0.00E+00	0.00E+00	4.55E-05	7.97E-06	8.96E-04	-1.04E-03	
EP-terrestrial	[Mole of N eq.]	3.49E-01	1.45E-02	0.00E+00	0.00E+00	5.09E-04	8.79E-05	9.85E-03	-1.12E-02	
POCP	[kg NMVOC eq.]	1.12E-01	2.52E-03	0.00E+00	0.00E+00	8.84E-05	2.31E-05	2.71E-03	-3.68E-03	
ADP-m&m	[kg Sb eq.]	5.14E-05	7.68E-08	0.00E+00	0.00E+00	2.69E-09	1.90E-09	4.35E-08	-1.63E-06	
ADP-fossil	[MJ]	9.56E+02	1.18E+01	0.00E+00	0.00E+00	4.14E-01	3.25E-02	6.37E+00	-1.14E+02	
WDP	[m <sup>3</sup> world equiv.]	1.03E+01	3.83E-03	0.00E+00	0.00E+00	1.34E-04	2.91E-04	5.09E-02	5.92E-02	

Table 8: Indicators of the environmental impacts per 1 m<sup>3</sup> of mineral wool URSA TERRA and URSA TECTONIC 76 Ph

		76 Ph								
Abbreviation	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D	
GWP-total	[kg CO2 eq.]	1,88E+01	2,15E-01	0,00E+00	0,00E+00	1,57E-02	2,06E-03	2,23E-01	-6,49E+00	
GWP-fossil	[kg CO2 eq.]	2,09E+01	2,14E-01	0,00E+00	0,00E+00	1,56E-02	2,04E-03	2,43E-01	-6,46E+00	
GWP-biogenic	[kg CO2 eq.]	-2,17E+00	9,86E-05	0,00E+00	0,00E+00	7,18E-06	3,91E-06	-1,92E-02	-1,65E-02	
GWP-luluc	[kg CO2 eq.]	2,09E-02	8,94E-04	0,00E+00	0,00E+00	6,51E-05	7,53E-06	6,98E-04	-1,22E-03	
ODP	[kg CFC-11 eq.]	1,20E-05	7,27E-17	0,00E+00	0,00E+00	5,29E-18	8,73E-18	8,97E-16	-2,06E-13	
AP	[Mole of H+ eq.]	8,71E-02	6,78E-04	0,00E+00	0,00E+00	4,94E-05	1,92E-05	1,74E-03	-3,58E-03	
EP-freshwater	[kg P eq.]	2,81E-03	4,67E-07	0,00E+00	0,00E+00	3,40E-08	4,90E-09	4,17E-07	-2,47E-06	
EP-marine	[kg N eq.]	1,56E-02	3,12E-04	0,00E+00	0,00E+00	2,27E-05	9,47E-06	4,47E-04	-1,15E-03	
EP-terrestrial	[Mole of N eq.]	1,84E-01	3,49E-03	0,00E+00	0,00E+00	2,54E-04	1,04E-04	4,92E-03	-1,24E-02	
POCP	[kg NMVOC eq.]	5,83E-02	6,06E-04	0,00E+00	0,00E+00	4,41E-05	2,74E-05	1,35E-03	-4,04E-03	
ADP-m&m	[kg Sb eq.]	2,59E-05	1,84E-08	0,00E+00	0,00E+00	1,34E-09	2,25E-09	2,17E-08	-1,70E-06	
ADP-fossil	[MJ]	5,13E+02	2,83E+00	0,00E+00	0,00E+00	2,06E-01	3,86E-02	3,18E+00	-1,24E+02	
WDP	[m <sup>3</sup> world equiv.]	5,14E+00	9,21E-04	0,00E+00	0,00E+00	6,70E-05	3,46E-04	2,54E-02	5,76E-02	

Table 9: Indicators of the environmental impacts per 1 m<sup>3</sup> of mineral wool URSA TERRA and URSA TECTONIC PLUS 70/70 SPRING

		PLUS 70/70 SPRING								
Abbreviation	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D	
GWP-total	[kg CO2 eq.]	2,77E+01	3,05E-01	0,00E+00	0,00E+00	2,23E-02	2,41E-03	3,18E-01	-6,87E+00	
GWP-fossil	[kg CO2 eq.]	3,02E+01	3,04E-01	0,00E+00	0,00E+00	2,22E-02	2,39E-03	3,45E-01	-6,84E+00	
GWP-biogenic	[kg CO2 eq.]	-2,49E+00	1,40E-04	0,00E+00	0,00E+00	1,02E-05	4,57E-06	-2,73E-02	-1,91E-02	
GWP-luluc	[kg CO2 eq.]	2,97E-02	1,27E-03	0,00E+00	0,00E+00	9,27E-05	8,82E-06	9,93E-04	-1,58E-03	
ODP	[kg CFC-11 eq.]	4,92E-05	1,03E-16	0,00E+00	0,00E+00	7,53E-18	1,02E-17	1,28E-15	-2,10E-13	
AP	[Mole of H+ eq.]	1,27E-01	9,61E-04	0,00E+00	0,00E+00	7,03E-05	2,25E-05	2,48E-03	-4,13E-03	
EP-freshwater	[kg P eq.]	4,24E-03	6,61E-07	0,00E+00	0,00E+00	4,84E-08	5,73E-09	5,93E-07	-3,22E-06	
EP-marine	[kg N eq.]	2,26E-02	4,41E-04	0,00E+00	0,00E+00	3,23E-05	1,11E-05	6,36E-04	-1,29E-03	
EP-terrestrial	[Mole of N eq.]	2,67E-01	4,94E-03	0,00E+00	0,00E+00	3,61E-04	1,22E-04	7,00E-03	-1,39E-02	
POCP	[kg NMVOC eq.]	8,51E-02	8,58E-04	0,00E+00	0,00E+00	6,28E-05	3,21E-05	1,93E-03	-4,49E-03	
ADP-m&m	[kg Sb eq.]	3,89E-05	2,61E-08	0,00E+00	0,00E+00	1,91E-09	2,64E-09	3,09E-08	-1,78E-06	
ADP-fossil	[MJ]	7,32E+02	4,02E+00	0,00E+00	0,00E+00	2,94E-01	4,52E-02	4,52E+00	-1,37E+02	
WDP	[m <sup>3</sup> world equiv.]	7,64E+00	1,30E-03	0,00E+00	0,00E+00	9,54E-05	4,05E-04	3,61E-02	5,56E-02	

Table 10: Indicators of the environmental impacts per 1 m<sup>3</sup> of mineral wool URSA TERRA and URSA TECTONIC PLUS 68 Ph

		PLUS 68 Ph								
Abbreviation	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D	
GWP-total	[kg CO2 eq.]	3,03E+01	5,25E-01	0,00E+00	0,00E+00	2,48E-02	2,41E-03	3,53E-01	-6,87E+00	
GWP-fossil	[kg CO2 eq.]	3,29E+01	5,22E-01	0,00E+00	0,00E+00	2,46E-02	2,40E-03	3,83E-01	-6,85E+00	
GWP-biogenic	[kg CO2 eq.]	-2,64E+00	2,40E-04	0,00E+00	0,00E+00	1,13E-05	4,58E-06	-3,02E-02	-1,91E-02	
GWP-luluc	[kg CO2 eq.]	3,21E-02	2,18E-03	0,00E+00	0,00E+00	1,03E-04	8,83E-06	1,10E-03	-1,58E-03	
ODP	[kg CFC-11 eq.]	5,31E-05	1,77E-16	0,00E+00	0,00E+00	8,35E-18	1,02E-17	1,42E-15	-2,11E-13	
AP	[Mole of H+ eq.]	1,39E-01	1,65E-03	0,00E+00	0,00E+00	7,80E-05	2,26E-05	2,75E-03	-4,14E-03	
EP-freshwater	[kg P eq.]	4,60E-03	1,14E-06	0,00E+00	0,00E+00	5,37E-08	5,74E-09	6,58E-07	-3,23E-06	
EP-marine	[kg N eq.]	2,46E-02	7,59E-04	0,00E+00	0,00E+00	3,58E-05	1,11E-05	7,06E-04	-1,29E-03	
EP-terrestrial	[Mole of N eq.]	2,90E-01	8,49E-03	0,00E+00	0,00E+00	4,01E-04	1,22E-04	7,76E-03	-1,39E-02	
POCP	[kg NMVOC eq.]	9,26E-02	1,48E-03	0,00E+00	0,00E+00	6,96E-05	3,22E-05	2,14E-03	-4,50E-03	
ADP-m&m	[kg Sb eq.]	4,22E-05	4,49E-08	0,00E+00	0,00E+00	2,12E-09	2,64E-09	3,43E-08	-1,78E-06	
ADP-fossil	[MJ]	7,98E+02	6,90E+00	0,00E+00	0,00E+00	3,26E-01	4,53E-02	5,02E+00	-1,37E+02	
WDP	[m <sup>3</sup> world equiv.]	8,35E+00	2,24E-03	0,00E+00	0,00E+00	1,06E-04	4,05E-04	4,01E-02	5,56E-02	

Table 11: Indicators of the environmental impacts per 1 m<sup>3</sup> of mineral wool URSA TERRA and URSA TECTONIC 66 Ph

		66 Ph								
Abbreviation	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D	
GWP-total	[kg CO2 eq.]	5,15E+01	1,08E+00	0,00E+00	0,00E+00	3,66E-02	2,56E-03	5,45E-01	-7,05E+00	
GWP-fossil	[kg CO2 eq.]	5,50E+01	1,08E+00	0,00E+00	0,00E+00	3,63E-02	2,54E-03	5,59E-01	-7,02E+00	
GWP-biogenic	[kg CO2 eq.]	-3,59E+00	6,42E-04	0,00E+00	0,00E+00	2,17E-05	4,86E-06	-1,62E-02	-2,03E-02	
GWP-luluc	[kg CO2 eq.]	4,98E-02	6,88E-03	0,00E+00	0,00E+00	2,32E-04	9,37E-06	1,64E-03	-1,75E-03	
ODP	[kg CFC-11 eq.]	9,56E-05	3,81E-16	0,00E+00	0,00E+00	1,29E-17	1,09E-17	2,17E-15	-2,13E-13	
AP	[Mole of H+ eq.]	2,40E-01	3,35E-03	0,00E+00	0,00E+00	1,13E-04	2,39E-05	3,98E-03	-4,39E-03	
EP-freshwater	[kg P eq.]	9,26E-03	2,23E-06	0,00E+00	0,00E+00	7,54E-08	6,10E-09	9,39E-07	-3,59E-06	
EP-marine	[kg N eq.]	4,22E-02	1,56E-03	0,00E+00	0,00E+00	5,27E-05	1,18E-05	1,04E-03	-1,36E-03	
EP-terrestrial	[Mole of N eq.]	5,00E-01	1,74E-02	0,00E+00	0,00E+00	5,88E-04	1,30E-04	1,14E-02	-1,46E-02	
POCP	[kg NMVOC eq.]	1,67E-01	3,04E-03	0,00E+00	0,00E+00	1,03E-04	3,42E-05	3,13E-03	-4,71E-03	
ADP-m&m	[kg Sb eq.]	8,40E-05	9,87E-08	0,00E+00	0,00E+00	3,33E-09	2,80E-09	5,29E-08	-1,82E-06	
ADP-fossil	[MJ]	1,32E+03	1,42E+01	0,00E+00	0,00E+00	4,81E-01	4,80E-02	7,43E+00	-1,43E+02	
WDP	[m <sup>3</sup> world equiv.]	1,57E+01	4,20E-03	0,00E+00	0,00E+00	1,42E-04	4,30E-04	5,99E-02	5,47E-02	



**Table 12: Indicators of the environmental impacts per 1 m<sup>3</sup> of mineral wool URSA TERRA and URSA TECTONIC 66 P/Nb**

66 P/Nb									
Abbreviation	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
GWP-total	[kg CO2 eq.]	4,17E+01	3,96E-01	0,00E+00	0,00E+00	3,70E-02	2,55E-03	5,51E-01	-7,04E+00
GWP-fossil	[kg CO2 eq.]	4,62E+01	3,93E-01	0,00E+00	0,00E+00	3,67E-02	2,53E-03	5,66E-01	-7,01E+00
GWP-biogenic	[kg CO2 eq.]	-4,56E+00	2,35E-04	0,00E+00	0,00E+00	2,20E-05	4,84E-06	-1,64E-02	-2,03E-02
GWP-luluc	[kg CO2 eq.]	4,39E-02	2,52E-03	0,00E+00	0,00E+00	2,35E-04	9,34E-06	1,66E-03	-1,74E-03
ODP	[kg CFC-11 eq.]	4,66E-06	1,39E-16	0,00E+00	0,00E+00	1,30E-17	1,08E-17	2,20E-15	-2,12E-13
AP	[Mole of H+ eq.]	1,99E-01	1,22E-03	0,00E+00	0,00E+00	1,14E-04	2,39E-05	4,03E-03	-4,38E-03
EP-freshwater	[kg P eq.]	7,53E-03	8,16E-07	0,00E+00	0,00E+00	7,63E-08	6,07E-09	9,50E-07	-3,56E-06
EP-marine	[kg N eq.]	3,59E-02	5,70E-04	0,00E+00	0,00E+00	5,33E-05	1,17E-05	1,05E-03	-1,36E-03
EP-terrestrial	[Mole of N eq.]	4,24E-01	6,36E-03	0,00E+00	0,00E+00	5,95E-04	1,29E-04	1,15E-02	-1,45E-02
POCP	[kg NMVOC eq.]	1,41E-01	1,11E-03	0,00E+00	0,00E+00	1,04E-04	3,40E-05	3,17E-03	-4,70E-03
ADP-m&m	[kg Sb eq.]	6,88E-05	3,61E-08	0,00E+00	0,00E+00	3,37E-09	2,79E-09	5,35E-08	-1,82E-06
ADP-fossil	[MJ]	1,13E+03	5,20E+00	0,00E+00	0,00E+00	4,86E-01	4,79E-02	7,52E+00	-1,42E+02
WDP	[m <sup>3</sup> world equiv.]	1,30E+01	1,54E-03	0,00E+00	0,00E+00	1,44E-04	4,29E-04	6,06E-02	5,47E-02

**Table 13: Indicators of the environmental impacts per 1 m<sup>3</sup> of mineral wool URSA TERRA and URSA TECTONIC 62 Ph**

62 Ph									
Abbreviation	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
GWP-total	[kg CO2 eq.]	5,47E+01	5,62E-01	0,00E+00	0,00E+00	4,46E-02	2,49E-03	6,64E-01	-6,96E+00
GWP-fossil	[kg CO2 eq.]	5,82E+01	5,58E-01	0,00E+00	0,00E+00	4,43E-02	2,47E-03	6,82E-01	-6,93E+00
GWP-biogenic	[kg CO2 eq.]	-3,60E+00	3,33E-04	0,00E+00	0,00E+00	2,64E-05	4,72E-06	-1,98E-02	-1,97E-02
GWP-luluc	[kg CO2 eq.]	5,23E-02	3,57E-03	0,00E+00	0,00E+00	2,83E-04	9,10E-06	2,00E-03	-1,67E-03
ODP	[kg CFC-11 eq.]	1,05E-04	1,98E-16	0,00E+00	0,00E+00	1,57E-17	1,05E-17	2,65E-15	-2,11E-13
AP	[Mole of H+ eq.]	2,56E-01	1,74E-03	0,00E+00	0,00E+00	1,38E-04	2,32E-05	4,85E-03	-4,26E-03
EP-freshwater	[kg P eq.]	1,02E-02	1,16E-06	0,00E+00	0,00E+00	9,19E-08	5,92E-09	1,14E-06	-3,40E-06
EP-marine	[kg N eq.]	4,54E-02	8,10E-04	0,00E+00	0,00E+00	6,42E-05	1,14E-05	1,26E-03	-1,33E-03
EP-terrestrial	[Mole of N eq.]	5,40E-01	9,03E-03	0,00E+00	0,00E+00	7,17E-04	1,26E-04	1,38E-02	-1,42E-02
POCP	[kg NMVOC eq.]	1,81E-01	1,58E-03	0,00E+00	0,00E+00	1,25E-04	3,31E-05	3,82E-03	-4,60E-03
ADP-m&m	[kg Sb eq.]	9,19E-05	5,12E-08	0,00E+00	0,00E+00	4,06E-09	2,72E-09	6,44E-08	-1,80E-06
ADP-fossil	[MJ]	1,40E+03	7,39E+00	0,00E+00	0,00E+00	5,86E-01	4,66E-02	9,06E+00	-1,40E+02
WDP	[m <sup>3</sup> world equiv.]	1,69E+01	2,18E-03	0,00E+00	0,00E+00	1,73E-04	4,17E-04	7,30E-02	5,52E-02

**Table 14: Indicators of the environmental impacts per 1 m<sup>3</sup> of mineral wool URSA TERRA and URSA TECTONIC 62 Ph/Vr**

62 Ph/Vr									
Abbreviation	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
GWP-total	[kg CO2 eq.]	5,47E+01	1,44E+00	0,00E+00	0,00E+00	5,57E-02	8,72E-04	8,30E-01	-5,64E+00
GWP-fossil	[kg CO2 eq.]	6,19E+01	1,43E+00	0,00E+00	0,00E+00	5,53E-02	8,66E-04	8,52E-01	-5,62E+00
GWP-biogenic	[kg CO2 eq.]	-7,21E+00	8,55E-04	0,00E+00	0,00E+00	3,31E-05	1,66E-06	-2,48E-02	-1,08E-02
GWP-luluc	[kg CO2 eq.]	5,66E-02	9,16E-03	0,00E+00	0,00E+00	3,54E-04	3,19E-06	2,50E-03	-4,23E-04
ODP	[kg CFC-11 eq.]	4,62E-05	5,07E-16	0,00E+00	0,00E+00	1,96E-17	3,70E-18	3,31E-15	-1,97E-13
AP	[Mole of H+ eq.]	2,81E-01	4,46E-03	0,00E+00	0,00E+00	1,72E-04	8,16E-06	6,07E-03	-2,37E-03
EP-freshwater	[kg P eq.]	1,18E-02	2,97E-06	0,00E+00	0,00E+00	1,15E-07	2,08E-09	1,43E-06	-7,87E-07
EP-marine	[kg N eq.]	5,12E-02	2,08E-03	0,00E+00	0,00E+00	8,03E-05	4,01E-06	1,58E-03	-8,35E-04
EP-terrestrial	[Mole of N eq.]	6,12E-01	2,32E-02	0,00E+00	0,00E+00	8,96E-04	4,43E-05	1,73E-02	-9,07E-03
POCP	[kg NMVOC eq.]	2,05E-01	4,04E-03	0,00E+00	0,00E+00	1,56E-04	1,16E-05	4,77E-03	-3,03E-03
ADP-m&m	[kg Sb eq.]	1,05E-04	1,31E-07	0,00E+00	0,00E+00	5,08E-09	9,55E-10	8,06E-08	-1,52E-06
ADP-fossil	[MJ]	1,47E+03	1,89E+01	0,00E+00	0,00E+00	7,33E-01	1,64E-02	1,13E+01	-9,66E+01
WDP	[m <sup>3</sup> world equiv.]	1,91E+01	5,59E-03	0,00E+00	0,00E+00	2,16E-04	1,46E-04	9,13E-02	6,20E-02



## 4.2 Indicators of raw material use

The results of raw materials use are presented with ten indicators in accordance with the standard EN 15804 (see Table 15). Indicators include the use of renewable and non-renewable energy, the use of renewable and non-renewable material resources and the use of water.

Table 15: Abbreviations and units of indicators of raw material use

Indicators of raw material use	Abbreviation	Unit
use of renewable primary energy excluding renewable primary energy resources used as raw materials	PERE	MJ, net calorific value
use of renewable primary energy resources used as raw materials	PERM	MJ, net calorific value
total use of renewable primary energy resources (primary energy and primary energy resources used as raw materials)	PERT	MJ, net calorific value
use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials	PENRE	MJ, net calorific value
use of non-renewable primary energy sources used as raw materials	PENRM	MJ, net calorific value
total use of non-renewable primary energy resources (primary energy and primary energy resources used as raw materials)	PENRT	MJ, net calorific value
use of secondary materials	SM	kg
use of renewable secondary fuels	RSF	MJ, net calorific value
use of non-renewable secondary fuels	NRSF	MJ, net calorific value
net use fresh water	FW	m <sup>3</sup>

The tabular representation of all raw materials for different versions of the URSA mineral wool are summarised from Table 16 to Table 24.

Table 16: Indicators of raw material use per 1m<sup>3</sup> of mineral wool URSA TERRA and URSA TECTONIC 76 R

		76 R								
Abbreviation	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D	
PERE	[MJ]	6,68E+01	3,38E-01	0,00E+00	0,00E+00	1,21E-02	1,22E-03	4,10E-01	-9,54E-01	
PERM	[MJ]	1,14E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	
PERT	[MJ]	6,68E+01	3,38E-01	0,00E+00	0,00E+00	1,21E-02	1,22E-03	4,10E-01	-9,54E-01	
PENRE	[MJ]	4,73E+02	5,65E+00	0,00E+00	0,00E+00	2,03E-01	1,45E-02	3,13E+00	-9,53E+01	
PENRM	[MJ]	1,31E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	
PENRT	[MJ]	4,73E+02	5,65E+00	0,00E+00	0,00E+00	2,03E-01	1,45E-02	3,13E+00	-9,53E+01	
SM	[kg]	6,48E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	
RSF	[MJ]	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	
NRSF	[MJ]	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	
FW	[m <sup>3</sup> ]	1,70E-01	2,99E-04	0,00E+00	0,00E+00	1,07E-05	3,79E-06	7,89E-04	3,40E-04	

Table 17: Indicators of raw material use per 1m<sup>3</sup> of mineral wool URSA TERRA and URSA TECTONIC 64 R (SUPER 76)

		64 R (SUPER 76)								
Abbreviation	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D	
PERE	[MJ]	1,41E+02	7,05E-01	0,00E+00	0,00E+00	2,47E-02	2,73E-03	8,34E-01	-2,46E+00	
PERM	[MJ]	2,98E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	
PERT	[MJ]	1,41E+02	7,05E-01	0,00E+00	0,00E+00	2,47E-02	2,73E-03	8,34E-01	-2,46E+00	
PENRE	[MJ]	9,56E+02	1,18E+01	0,00E+00	0,00E+00	4,14E-01	3,25E-02	6,37E+00	-1,14E+02	
PENRM	[MJ]	2,95E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	
PENRT	[MJ]	9,56E+02	1,18E+01	0,00E+00	0,00E+00	4,14E-01	3,25E-02	6,37E+00	-1,14E+02	
SM	[kg]	3,35E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	
RSF	[MJ]	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	
NRSF	[MJ]	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	
FW	[m <sup>3</sup> ]	3,42E-01	6,24E-04	0,00E+00	0,00E+00	2,19E-05	8,50E-06	1,61E-03	-2,13E-03	

Table 18: Indicators of raw material use per 1m<sup>3</sup> of mineral wool URSA TERRA and URSA TECTONIC 76 Ph

76 Ph									
Abbreviation	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
PERE	[MJ]	8,28E+01	1,69E-01	0,00E+00	0,00E+00	1,23E-02	3,25E-03	4,16E-01	-3,23E+00
PERM	[MJ]	2,39E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PERT	[MJ]	8,28E+01	1,69E-01	0,00E+00	0,00E+00	1,23E-02	3,25E-03	4,16E-01	-3,23E+00
PENRE	[MJ]	5,13E+02	2,83E+00	0,00E+00	0,00E+00	2,06E-01	3,86E-02	3,18E+00	-1,24E+02
PENRM	[MJ]	3,51E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PENRT	[MJ]	5,13E+02	2,83E+00	0,00E+00	0,00E+00	2,06E-01	3,86E-02	3,18E+00	-1,24E+02
SM	[kg]	2,29E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
RSF	[MJ]	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
NRSF	[MJ]	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
FW	[m <sup>3</sup> ]	1,75E-01	1,50E-04	0,00E+00	0,00E+00	1,09E-05	1,01E-05	8,01E-04	-3,41E-03

Table 19: Indicators of raw material use per 1m<sup>3</sup> of mineral wool URSA TERRA and URSA TECTONIC PLUS 70/70 SPRING

PLUS 70/70 SPRING									
Abbreviation	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
PERE	[MJ]	1,11E+02	2,40E-01	0,00E+00	0,00E+00	1,76E-02	3,80E-03	5,92E-01	-4,21E+00
PERM	[MJ]	2,75E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PERT	[MJ]	1,11E+02	2,40E-01	0,00E+00	0,00E+00	1,76E-02	3,80E-03	5,92E-01	-4,21E+00
PENRE	[MJ]	7,32E+02	4,02E+00	0,00E+00	0,00E+00	2,94E-01	4,52E-02	4,52E+00	-1,37E+02
PENRM	[MJ]	4,10E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PENRT	[MJ]	7,32E+02	4,02E+00	0,00E+00	0,00E+00	2,94E-01	4,52E-02	4,52E+00	-1,37E+02
SM	[kg]	1,14E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
RSF	[MJ]	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
NRSF	[MJ]	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
FW	[m <sup>3</sup> ]	2,55E-01	2,12E-04	0,00E+00	0,00E+00	1,55E-05	1,18E-05	1,14E-03	-5,01E-03

Table 20: Indicators of raw material use per 1m<sup>3</sup> of mineral wool URSA TERRA and URSA TECTONIC PLUS 68 Ph

PLUS 68 Ph									
Abbreviation	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
PERE	[MJ]	1,22E+02	4,13E-01	0,00E+00	0,00E+00	1,95E-02	3,81E-03	6,57E-01	-4,22E+00
PERM	[MJ]	2,93E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PERT	[MJ]	1,22E+02	4,13E-01	0,00E+00	0,00E+00	1,95E-02	3,81E-03	6,57E-01	-4,22E+00
PENRE	[MJ]	7,98E+02	6,90E+00	0,00E+00	0,00E+00	3,26E-01	4,53E-02	5,02E+00	-1,37E+02
PENRM	[MJ]	4,11E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PENRT	[MJ]	7,98E+02	6,90E+00	0,00E+00	0,00E+00	3,26E-01	4,53E-02	5,02E+00	-1,37E+02
SM	[kg]	1,13E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
RSF	[MJ]	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
NRSF	[MJ]	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
FW	[m <sup>3</sup> ]	2,79E-01	3,65E-04	0,00E+00	0,00E+00	1,72E-05	1,18E-05	1,26E-03	-5,04E-03

Table 21: Indicators of raw material use per 1m<sup>3</sup> of mineral wool URSA TERRA and URSA TECTONIC 66 Ph

66 Ph									
Abbreviation	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
PERE	[MJ]	1,21E+02	8,51E-01	0,00E+00	0,00E+00	2,87E-02	4,04E-03	9,98E-01	-4,68E+00
PERM	[MJ]	5,67E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PERT	[MJ]	1,78E+02	8,51E-01	0,00E+00	0,00E+00	2,87E-02	4,04E-03	9,98E-01	-4,68E+00
PENRE	[MJ]	1,28E+03	1,42E+01	0,00E+00	0,00E+00	4,81E-01	4,80E-02	7,43E+00	-1,43E+02
PENRM	[MJ]	4,36E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PENRT	[MJ]	1,32E+03	1,42E+01	0,00E+00	0,00E+00	4,81E-01	4,80E-02	7,43E+00	-1,43E+02
SM	[kg]	24,42	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	4,18E+00
RSF	[MJ]	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
NRSF	[MJ]	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
FW	[m <sup>3</sup> ]	4,94E-01	7,46E-04	0,00E+00	0,00E+00	2,52E-05	1,26E-05	1,83E-03	-5,79E-03

Table 22: Indicators of raw material use per 1m<sup>3</sup> of mineral wool URSA TERRA and URSA TECTONIC 66 P/Nb

66 P/Nb									
Abbreviation	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
PERE	[MJ]	1.18E+02	3.11E-01	0.00E+00	0.00E+00	2.91E-02	4.03E-03	1.01E+00	-4.65E+00
PERM	[MJ]	4.99E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	[MJ]	1.68E+02	3.11E-01	0.00E+00	0.00E+00	2.91E-02	4.03E-03	1.01E+00	-4.65E+00
PENRE	[MJ]	1.08E+03	5.20E+00	0.00E+00	0.00E+00	4.86E-01	4.79E-02	7.52E+00	-1.42E+02
PENRM	[MJ]	4.35E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	[MJ]	1.13E+03	5.20E+00	0.00E+00	0.00E+00	4.86E-01	4.79E-02	7.52E+00	-1.42E+02
SM	[kg]	24,70	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3,80
RSF	[MJ]	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
NRSF	[MJ]	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
FW	[m <sup>3</sup> ]	4,13E-01	2,73E-04	0,00E+00	0,00E+00	2,55E-05	1,25E-05	1,85E-03	-5,74E-03

Table 23: Indicators of raw material use per 1m<sup>3</sup> of mineral wool URSA TERRA and URSA TECTONIC 62 Ph

62 Ph									
Abbreviation	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
PERE	[MJ]	1.41E+02	4.42E-01	0.00E+00	0.00E+00	3.50E-02	3.92E-03	1.22E+00	-4.45E+00
PERM	[MJ]	3.92E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	[MJ]	1.80E+02	4.42E-01	0.00E+00	0.00E+00	3.50E-02	3.92E-03	1.22E+00	-4.45E+00
PENRE	[MJ]	1.35E+03	7.39E+00	0.00E+00	0.00E+00	5.86E-01	4.66E-02	9.06E+00	-1.40E+02
PENRM	[MJ]	4.23E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	[MJ]	1.40E+03	7.39E+00	0.00E+00	0.00E+00	5.86E-01	4.66E-02	9.06E+00	-1.40E+02
SM	[kg]	28,4E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3,20E+00
RSF	[MJ]	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
NRSF	[MJ]	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
FW	[m <sup>3</sup> ]	5,27E-01	3,87E-04	0,00E+00	0,00E+00	3,07E-05	1,22E-05	2,23E-03	-5,40E-03

Table 24: Indicators of raw material use per 1m<sup>3</sup> of mineral wool URSA TERRA and URSA TECTONIC 62 Ph/Vr

62 Ph/Vr									
Abbreviation	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
PERE	[MJ]	1.41E+02	1.13E+00	0.00E+00	0.00E+00	4.38E-02	1.38E-03	1.52E+00	-1.06E+00
PERM	[MJ]	7.85E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	[MJ]	2.20E+02	1.13E+00	0.00E+00	0.00E+00	4.38E-02	1.38E-03	1.52E+00	-1.06E+00
PENRE	[MJ]	1.46E+03	1.89E+01	0.00E+00	0.00E+00	7.33E-01	1.64E-02	1.13E+01	-9.66E+01
PENRM	[MJ]	1.49E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	[MJ]	1.47E+03	1.89E+01	0.00E+00	0.00E+00	7.33E-01	1.64E-02	1.13E+01	-9.66E+01
SM	[kg]	36,70	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4,82
RSF	[MJ]	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
NRSF	[MJ]	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
FW	[m <sup>3</sup> ]	5,77E-01	9,92E-04	0,00E+00	0,00E+00	3,84E-05	4,28E-06	2,79E-03	1,70E-04

### 4.3 Other indicators of environmental impacts

The results for other environmental information describing waste categories (i.e., waste disposal data) are presented with three indicators in accordance with the standard EN 15804. (see Table 25).

Table 25: Abbreviations and units of other indicators of environmental impacts

Indicators for other environmental information	Abbreviation	Units
hazardous waste disposal	HWD	kg
non-hazardous waste disposal	NHWD	kg
radioactive waste disposal	RWD	kg
Output flow indicators	Abbreviation	Units
components for re-use	CRU	kg
material for recycling	MFR	kg
materials for energy recovery	MER	kg
exported energy	EE	MJ on the energy carrier

The tabular representation of other environmental information for different versions of the URSA mineral wool are summarised from table 26 to Table 34.



Table 26: Other indicators of environmental impacts per 1m<sup>3</sup> of mineral wool URSA TERRA and URSA TECTONIC 76 R

		76 R								
Abbreviation	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D	
HWD	[kg]	5,15E-07	2,10E-07	0,00E+00	0,00E+00	7,54E-09	3,05E-10	4,77E-08	-1,98E-08	
NHWD	[kg]	1,97E-01	1,01E-03	0,00E+00	0,00E+00	3,63E-05	4,35E-06	1,57E+01	-1,53E-02	
RWD	[kg]	1,59E-02	7,48E-06	0,00E+00	0,00E+00	2,69E-07	1,16E-07	3,56E-05	-1,75E-04	
CRU	[kg]	0,00E+00	0,00E+00	0,00E+00	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	0,00E+00	2,52E-01	0,00E+00	2,52E-01	
MER	[kg]	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	6,33E-01	0,00E+00	6,33E-01	
EE	[MJ]	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	

Table 27: Other indicators of environmental impacts per 1m<sup>3</sup> of mineral wool URSA TERRA and URSA TECTONIC 64 R (SUPER 76)

		64 R (SUPER 76)								
Abbreviation	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D	
HWD	[kg]	1,08E-06	4,38E-07	0,00E+00	0,00E+00	1,54E-08	6,84E-10	9,71E-08	-2,55E-08	
NHWD	[kg]	3,98E-01	2,11E-03	0,00E+00	0,00E+00	7,39E-05	9,78E-06	3,20E+01	-2,01E-02	
RWD	[kg]	3,19E-02	1,56E-05	0,00E+00	0,00E+00	5,47E-07	2,61E-07	7,25E-05	-3,95E-04	
CRU	[kg]	0,00E+00	0,00E+00	0,00E+00	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	0,00E+00	5,65E-01	0,00E+00	5,65E-01	
MER	[kg]	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,66E+00	0,00E+00	1,66E+00	
EE	[MJ]	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	

Table 28: Other indicators of environmental impacts per 1m<sup>3</sup> of mineral wool URSA TERRA and URSA TECTONIC 76 Ph

		76 Ph								
Abbreviation	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D	
HWD	[kg]	6,28E-07	1,05E-07	0,00E+00	0,00E+00	7,66E-09	8,13E-10	4,84E-08	-2,84E-08	
NHWD	[kg]	2,08E-01	5,06E-04	0,00E+00	0,00E+00	3,69E-05	1,16E-05	1,60E+01	-2,26E-02	
RWD	[kg]	1,64E-02	3,75E-06	0,00E+00	0,00E+00	2,73E-07	3,10E-07	3,62E-05	-5,08E-04	
CRU	[kg]	0,00E+00	0,00E+00	0,00E+00	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	0,00E+00	6,71E-01	0,00E+00	6,71E-01	
MER	[kg]	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,33E+00	0,00E+00	1,33E+00	
EE	[MJ]	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	

Table 29: Other indicators of environmental impacts per 1m<sup>3</sup> of mineral wool URSA TERRA and URSA TECTONIC PLUS 70/70 SPRING

		PLUS 70/70 SPRING								
Abbreviation	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D	
HWD	[kg]	8,79E-07	1,49E-07	0,00E+00	0,00E+00	1,09E-08	9,51E-10	6,90E-08	-3,21E-08	
NHWD	[kg]	2,94E-01	7,17E-04	0,00E+00	0,00E+00	5,25E-05	1,36E-05	2,27E+01	-2,58E-02	
RWD	[kg]	2,33E-02	5,31E-06	0,00E+00	0,00E+00	3,89E-07	3,63E-07	5,15E-05	-6,51E-04	
CRU	[kg]	0,00E+00	0,00E+00	0,00E+00	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	0,00E+00	7,86E-01	0,00E+00	7,86E-01	
MER	[kg]	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,54E+00	0,00E+00	1,54E+00	
EE	[MJ]	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	

Table 30: Other indicators of environmental impacts per 1m<sup>3</sup> of mineral wool URSA TERRA and URSA TECTONIC PLUS 68 Ph

		PLUS 68 Ph								
Abbreviation	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D	
HWD	[kg]	9,17E-07	2,56E-07	0,00E+00	0,00E+00	1,21E-08	9,53E-10	7,65E-08	-3,22E-08	
NHWD	[kg]	3,22E-01	1,23E-03	0,00E+00	0,00E+00	5,82E-05	1,36E-05	2,52E+01	-2,58E-02	
RWD	[kg]	2,59E-02	9,13E-06	0,00E+00	0,00E+00	4,31E-07	3,63E-07	5,71E-05	-6,53E-04	
CRU	[kg]	0,00E+00	0,00E+00	0,00E+00	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	0,00E+00	7,87E-01	0,00E+00	7,87E-01	
MER	[kg]	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,63E+00	0,00E+00	1,63E+00	
EE	[MJ]	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	

Table 31: Other indicators of environmental impacts per 1m<sup>3</sup> of mineral wool URSA TERRA and URSA TECTONIC 66 Ph

		66 Ph								
Abbreviation	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D	
HWD	[kg]	1,31E-06	6,01E-10	0,00E+00	0,00E+00	2,03E-11	1,01E-09	7,88E-10	-3,39E-08	
NHWD	[kg]	5,12E-01	2,40E-03	0,00E+00	0,00E+00	8,10E-05	1,45E-05	3,70E+01	-2,73E-02	
RWD	[kg]	3,76E-02	1,74E-05	0,00E+00	0,00E+00	5,88E-07	3,86E-07	7,80E-05	-7,20E-04	
CRU	[kg]	0,00E+00	0,00E+00	0,00E+00	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	0,00E+00	8,35E-01	0,00E+00	8,35E-01	
MER	[kg]	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	3,15E+00	0,00E+00	3,15E+00	
EE	[MJ]	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	



Table 32: Other indicators of environmental impacts per 1m<sup>3</sup> of mineral wool URSA TERRA and URSA TECTONIC 66 P/Nb

		66 P/Nb								
Abbreviation	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D	
HWD	[kg]	1,30E-06	2,20E-10	0,00E+00	0,00E+00	2,05E-11	1,01E-09	7,97E-10	-3,38E-08	
NHWD	[kg]	4,42E-01	8,76E-04	0,00E+00	0,00E+00	8,19E-05	1,44E-05	3,74E+01	-2,72E-02	
RWD	[kg]	3,23E-02	6,36E-06	0,00E+00	0,00E+00	5,95E-07	3,84E-07	7,89E-05	-7,16E-04	
CRU	[kg]	0,00E+00	0,00E+00	0,00E+00	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	0,00E+00	8,32E-01	0,00E+00	8,32E-01	
MER	[kg]	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,78E+00	0,00E+00	2,78E+00	
EE	[MJ]	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	

Table 33: Other indicators of environmental impacts per 1m<sup>3</sup> of mineral wool URSA TERRA and URSA TECTONIC 62 Ph

		62 Ph								
Abbreviation	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D	
HWD	[kg]	1,40E-06	3,12E-10	0,00E+00	0,00E+00	2,47E-11	9,82E-10	9,60E-10	-3,30E-08	
NHWD	[kg]	5,46E-01	1,24E-03	0,00E+00	0,00E+00	9,87E-05	1,40E-05	4,51E+01	-2,65E-02	
RWD	[kg]	3,76E-02	9,03E-06	0,00E+00	0,00E+00	7,17E-07	3,74E-07	9,51E-05	-6,85E-04	
CRU	[kg]	0,00E+00	0,00E+00	0,00E+00	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	0,00E+00	8,11E-01	0,00E+00	8,11E-01	
MER	[kg]	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,19E+00	0,00E+00	2,19E+00	
EE	[MJ]	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	

Table 34: Other indicators of environmental impacts per 1m<sup>3</sup> of mineral wool URSA TERRA and URSA TECTONIC 62 Ph/Vr

		62 Ph/Vr								
Abbreviation	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D	
HWD	[kg]	1,66E-06	8,00E-10	0,00E+00	0,00E+00	3,09E-11	3,44E-10	1,20E-09	-2,02E-08	
NHWD	[kg]	6,06E-01	3,19E-03	0,00E+00	0,00E+00	1,23E-04	4,92E-06	5,84E+01	-1,56E-02	
RWD	[kg]	3,74E-02	2,32E-05	0,00E+00	0,00E+00	8,96E-07	1,31E-07	1,19E-04	-1,90E-04	
CRU	[kg]	0,00E+00	0,00E+00	0,00E+00	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	0,00E+00	2,84E-01	0,00E+00	2,84E-01	
MER	[kg]	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	4,37E+00	0,00E+00	4,37E+00	
EE	[MJ]	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	

#### 4.4 Additional impact categories and indicators

According to the standard EN 15804, the results for additional impact categories and indicators are presented with six indicators (table 35).

Table 35: Abbreviations and units of additional impact categories and indicators

Indicators for additional impact	Abbreviation	Unit
potential incidence of disease due to PM emissions	PM	disease incidence
potential human exposure efficiency relative to U235	IRP	kBq U235 equiv
potential comparative toxic unit for ecosystems	ETP-fw	CTUe
potential comparative toxic unit for humans-cancerogenic	HTP-c	CTUh
potential comparative toxic unit for humans-non-cancerogenic	HTP-nc	CTUh
potential soil quality index	SQP	-

The tabular representation of the additional environmental information for different versions of the URSA mineral wool are summarised from Table 36 to Table 44.

Table 36: Additional indicators of environmental impacts per 1m<sup>3</sup> of mineral wool URSA TERRA and URSA TECTONIC 76 R

		76 R								
Abbreviation	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D	
PM	incidenca bolezni	9,26E-07	9,52E-09	0,00E+00	0,00E+00	3,42E-10	1,66E-10	2,12E-08	-2,32E-08	
IRP	kBq <sup>235</sup> U eq.	1,78E+00	7,41E-04	0,00E+00	0,00E+00	2,66E-05	1,05E-05	3,66E-03	-2,37E-02	
ETP-fw	CTUe	5,06E+02	4,53E+00	0,00E+00	0,00E+00	1,63E-01	1,14E-02	1,79E+00	-3,46E+00	
HTP-c	CTUh	3,54E-08	1,10E-10	0,00E+00	0,00E+00	3,94E-12	2,71E-13	2,65E-10	-2,53E-09	
HTP-nc	CTUh	2,20E-07	5,54E-09	0,00E+00	0,00E+00	1,99E-10	1,46E-11	2,92E-08	-3,23E-08	
SQP	brez dimenzije	2,03E+02	1,77E+00	0,00E+00	0,00E+00	6,37E-02	3,20E-03	6,52E-01	-7,63E-01	

Table 37: Additional indicators of environmental impacts per 1m<sup>3</sup> of mineral wool URSA TERRA and URSA TECTONIC 64 R (SUPER 76)

		64 R (SUPER 76)								
Abbreviation	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D	
PM	incidenca bolezni	1,94E-06	1,99E-08	0,00E+00	0,00E+00	6,97E-10	3,73E-10	4,31E-08	-2,96E-08	
IRP	kBq <sup>235</sup> U eq.	3,58E+00	1,55E-03	0,00E+00	0,00E+00	5,42E-05	2,36E-05	7,46E-03	-4,35E-02	
ETP-fw	CTUe	1,01E+03	9,46E+00	0,00E+00	0,00E+00	3,32E-01	2,56E-02	3,64E+00	-1,29E+01	
HTP-c	CTUh	7,13E-08	2,29E-10	0,00E+00	0,00E+00	8,02E-12	6,10E-13	5,39E-10	-2,76E-09	
HTP-nc	CTUh	4,46E-07	1,16E-08	0,00E+00	0,00E+00	4,05E-10	3,29E-11	5,94E-08	-4,27E-08	
SQP	brez dimenzije	5,00E+02	3,69E+00	0,00E+00	0,00E+00	1,30E-01	7,19E-03	1,33E+00	-2,10E+00	

Table 38: Additional indicators of environmental impacts per 1m<sup>3</sup> of mineral wool URSA TERRA and URSA TECTONIC 76 Ph

		76 Ph								
Abbreviation	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D	
PM	incidenca bolezni	1,10E-06	4,77E-09	0,00E+00	0,00E+00	3,48E-10	4,43E-10	2,15E-08	-3,29E-08	
IRP	kBq <sup>235</sup> U eq.	1,84E+00	3,72E-04	0,00E+00	0,00E+00	2,71E-05	2,80E-05	3,72E-03	-5,37E-02	
ETP-fw	CTUe	5,51E+02	2,27E+00	0,00E+00	0,00E+00	1,65E-01	3,04E-02	1,82E+00	-1,78E+01	
HTP-c	CTUh	3,55E-08	5,49E-11	0,00E+00	0,00E+00	4,00E-12	7,24E-13	2,69E-10	-2,88E-09	
HTP-nc	CTUh	2,45E-07	2,78E-09	0,00E+00	0,00E+00	2,02E-10	3,91E-11	2,96E-08	-4,81E-08	
SQP	brez dimenzije	3,75E+02	8,88E-01	0,00E+00	0,00E+00	6,46E-02	8,54E-03	6,62E-01	-2,78E+00	

Table 39: Additional indicators of environmental impacts per 1m<sup>3</sup> of mineral wool URSA TERRA and URSA TECTONIC PLUS 70/70 SPRING

		PLUS 70/70 SPRING								
Abbreviation	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D	
PM	incidenca bolezni	1,53E-06	6,76E-09	0,00E+00	0,00E+00	4,95E-10	5,18E-10	3,06E-08	-3,71E-08	
IRP	kBq <sup>235</sup> U eq.	2,65E+00	5,26E-04	0,00E+00	0,00E+00	3,85E-05	3,28E-05	5,30E-03	-6,66E-02	
ETP-fw	CTUe	8,78E+02	3,22E+00	0,00E+00	0,00E+00	2,36E-01	3,56E-02	2,58E+00	-2,39E+01	
HTP-c	CTUh	5,25E-08	7,78E-11	0,00E+00	0,00E+00	5,69E-12	8,48E-13	3,83E-10	-3,03E-09	
HTP-nc	CTUh	3,54E-07	3,94E-09	0,00E+00	0,00E+00	2,88E-10	4,57E-11	4,22E-08	-5,49E-08	
SQP	brez dimenzije	4,48E+02	1,26E+00	0,00E+00	0,00E+00	9,20E-02	1,00E-02	9,43E-01	-3,65E+00	

Table 40: Additional indicators of environmental impacts per 1m<sup>3</sup> of mineral wool URSA TERRA and URSA TECTONIC PLUS 68 Ph

		PLUS 68 Ph								
Abbreviation	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D	
PM	incidenca bolezni	1,66E-06	1,16E-08	0,00E+00	0,00E+00	5,49E-10	5,19E-10	3,39E-08	-3,72E-08	
IRP	kBq <sup>235</sup> U eq.	2,93E+00	9,05E-04	0,00E+00	0,00E+00	4,27E-05	3,28E-05	5,87E-03	-6,67E-02	
ETP-fw	CTUe	9,57E+02	5,54E+00	0,00E+00	0,00E+00	2,61E-01	3,56E-02	2,87E+00	-2,40E+01	
HTP-c	CTUh	5,67E-08	1,34E-10	0,00E+00	0,00E+00	6,32E-12	8,49E-13	4,25E-10	-3,03E-09	
HTP-nc	CTUh	3,85E-07	6,77E-09	0,00E+00	0,00E+00	3,19E-10	4,58E-11	4,68E-08	-5,50E-08	
SQP	brez dimenzije	4,79E+02	2,16E+00	0,00E+00	0,00E+00	1,02E-01	1,00E-02	1,05E+00	-3,66E+00	

Table 41: Additional indicators of environmental impacts per 1m<sup>3</sup> of mineral wool URSA TERRA and URSA TECTONIC 66 Ph

		66 Ph								
Abbreviation	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D	
PM	incidenca bolezni	2,81E-06	1,94E-08	0,00E+00	0,00E+00	6,54E-10	5,51E-10	4,95E-08	-3,91E-08	
IRP	kBq <sup>235</sup> U eq.	4,80E+00	1,72E-03	0,00E+00	0,00E+00	5,80E-05	3,49E-05	8,21E-03	-7,28E-02	
ETP-fw	CTUe	1,72E+03	1,15E+01	0,00E+00	0,00E+00	3,88E-01	3,78E-02	4,21E+00	-2,69E+01	
HTP-c	CTUh	1,16E-07	2,31E-10	0,00E+00	0,00E+00	7,79E-12	9,01E-13	6,23E-10	-3,10E-09	
HTP-nc	CTUh	6,41E-07	1,32E-08	0,00E+00	0,00E+00	4,46E-10	4,86E-11	6,88E-08	-5,81E-08	
SQP	brez dimenzije	6,65E+02	4,46E+00	0,00E+00	0,00E+00	1,51E-01	1,06E-02	1,50E+00	-4,07E+00	

**Table 42: Additional indicators of environmental impacts per 1m<sup>3</sup> of mineral wool URSA TERRA and URSA TECTONIC 66 P/Nb**

		66 P/Nb							
Abbreviation	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
PM	incidenca bolezni	2,49E-06	7,08E-09	0,00E+00	0,00E+00	6,62E-10	5,49E-10	5,01E-08	-3,90E-08
IRP	kBq <sup>235</sup> U eq.	4,03E+00	6,28E-04	0,00E+00	0,00E+00	5,87E-05	3,47E-05	8,30E-03	-7,24E-02
ETP-fw	CTUe	1,25E+03	4,20E+00	0,00E+00	0,00E+00	3,93E-01	3,77E-02	4,26E+00	-2,67E+01
HTP-c	CTUh	9,76E-08	8,43E-11	0,00E+00	0,00E+00	7,88E-12	8,98E-13	6,31E-10	-3,10E-09
HTP-nc	CTUh	5,29E-07	4,83E-09	0,00E+00	0,00E+00	4,51E-10	4,84E-11	6,96E-08	-5,79E-08
SQP	brez dimenzije	7,84E+02	1,63E+00	0,00E+00	0,00E+00	1,53E-01	1,06E-02	1,52E+00	-4,05E+00

**Table 43: Additional indicators of environmental impacts per 1m<sup>3</sup> of mineral wool URSA TERRA and URSA TECTONIC 62 Ph**

		62 Ph							
Abbreviation	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
PM	incidenca bolezni	2,99E-06	1,01E-08	0,00E+00	0,00E+00	7,98E-10	5,35E-10	6,04E-08	-3,81E-08
IRP	kBq <sup>235</sup> U eq.	5,03E+00	8,92E-04	0,00E+00	0,00E+00	7,07E-05	3,38E-05	1,00E-02	-6,97E-02
ETP-fw	CTUe	1,89E+03	5,97E+00	0,00E+00	0,00E+00	4,73E-01	3,67E-02	5,14E+00	-2,54E+01
HTP-c	CTUh	1,27E-07	1,20E-10	0,00E+00	0,00E+00	9,50E-12	8,75E-13	7,60E-10	-3,07E-09
HTP-nc	CTUh	6,82E-07	6,85E-09	0,00E+00	0,00E+00	5,43E-10	4,72E-11	8,39E-08	-5,65E-08
SQP	brez dimenzije	6,72E+02	2,32E+00	0,00E+00	0,00E+00	1,84E-01	1,03E-02	1,83E+00	-3,86E+00

**Table 44: Additional indicators of environmental impacts per 1m<sup>3</sup> of mineral wool URSA TERRA and URSA TECTONIC 62 Ph/Vr**

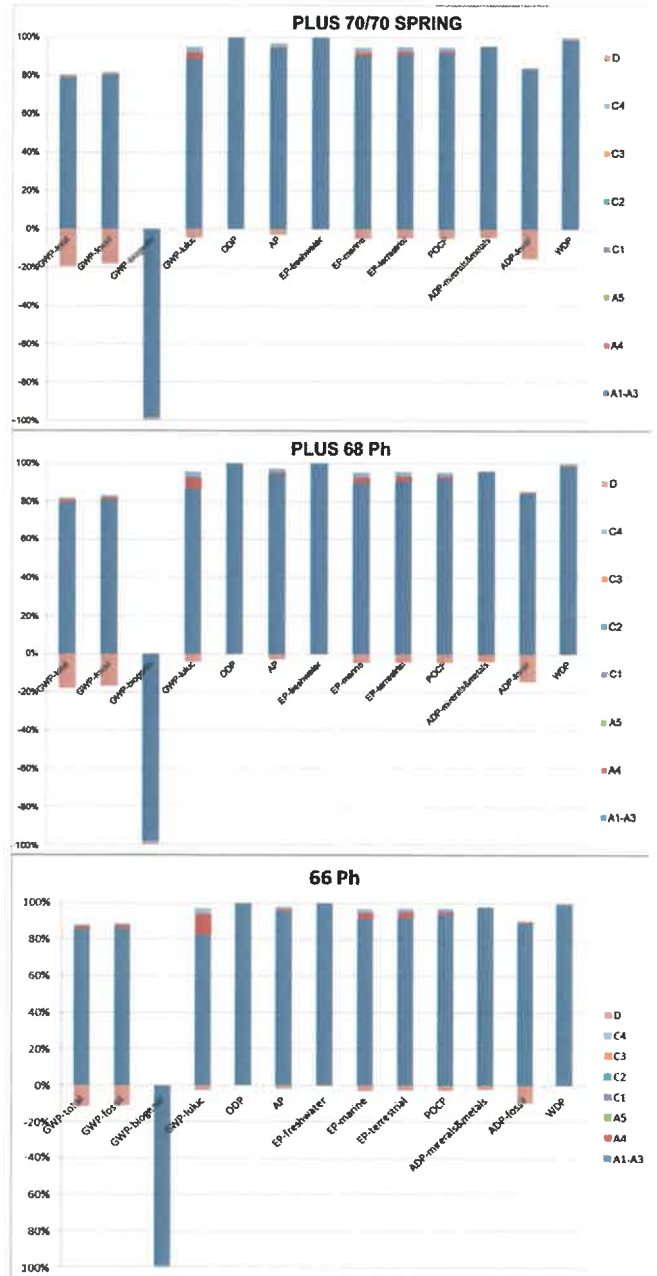
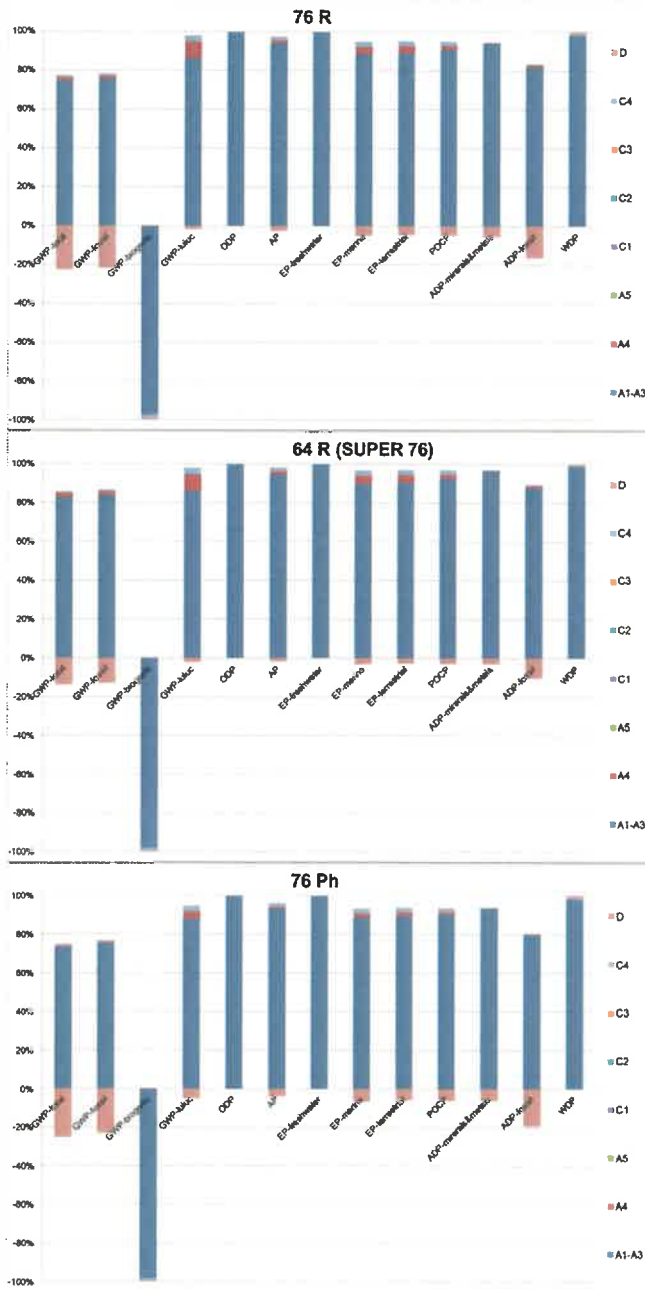
		62 Ph/Vr							
Abbreviation	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
PM	incidenca bolezni	3,67E-06	2,58E-08	0,00E+00	0,00E+00	9,98E-10	1,88E-10	7,55E-08	-2,37E-08
IRP	kBq <sup>235</sup> U eq.	5,38E+00	2,29E-03	0,00E+00	0,00E+00	8,85E-05	1,19E-05	1,25E-02	-2,51E-02
ETP-fw	CTUe	1,94E+03	1,53E+01	0,00E+00	0,00E+00	5,92E-01	1,29E-02	6,43E+00	-4,12E+00
HTP-c	CTUh	1,49E-07	3,07E-10	0,00E+00	0,00E+00	1,19E-11	3,07E-13	9,50E-10	-2,55E-09
HTP-nc	CTUh	7,08E-07	1,76E-08	0,00E+00	0,00E+00	6,80E-10	1,66E-11	1,05E-07	-3,30E-08
SQP	brez dimenzije	1,20E+03	5,94E+00	0,00E+00	0,00E+00	2,30E-01	3,82E-03	2,28E+00	-8,55E-01

**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** – for the indicators ADPE, ADPF, WDP, ETP-fw, HTP-c, HTP-nc, SQP  
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.

## 5 Interpretation of results

### URSA mineral wool





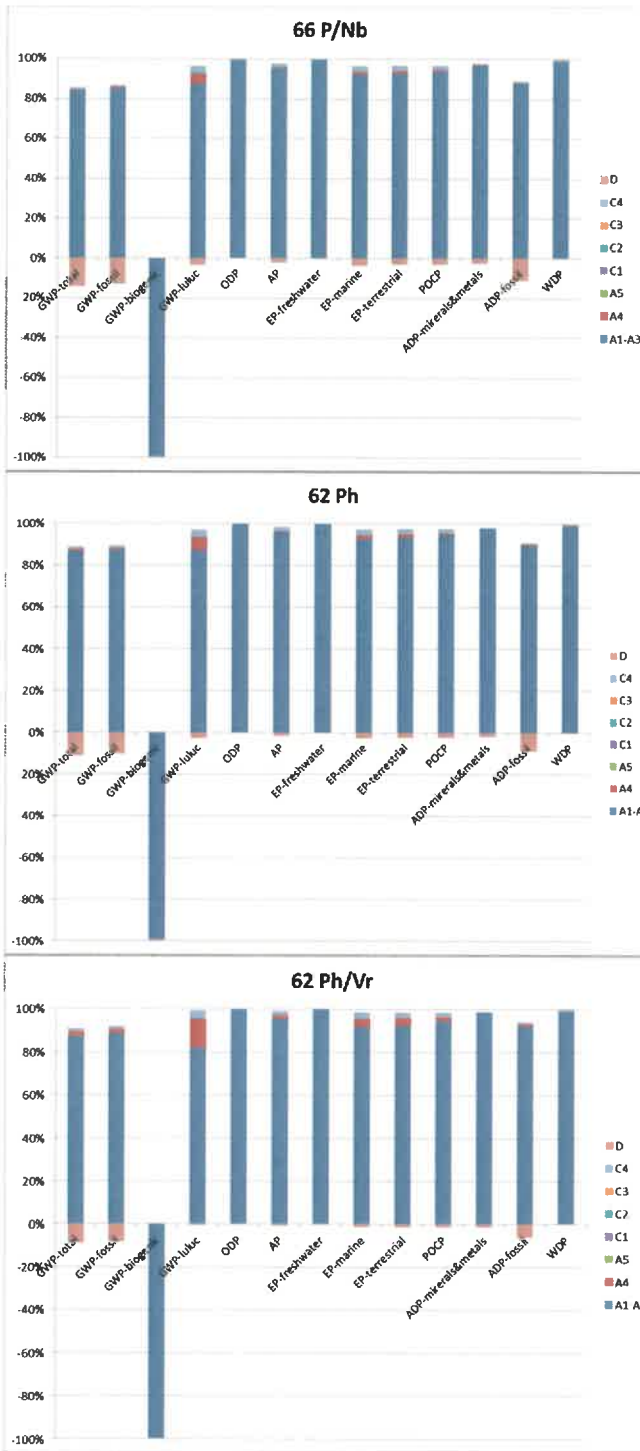


Figure 3: Relative contributions of the different life cycle stages (i.e. modules A1–A3, A4, A5, C1, C2, C3 C4 and D) to the environmental impact per 1m<sup>3</sup> of the URSA TERRA and URSA TECTONIC insulation products

It is clear from Figure 3: Relative contributions of the different life cycle stages (i.e. modules A1–A3, A4, A5, C1, C2, C3 C4 and D) to the environmental impact per 1m<sup>3</sup> of the URSA

TERRA and URSA TECTONIC insulation products that the product stage (i.e. modules A1-A3) contributes the most to the environmental impact of the URSA TERRA and URSA TECTONIC mineral wool products. For example, the product stage represents on average more than 80% of the total environmental impact in terms of GWP–total (sum of GWP–fossil, GWP–biogenic and GWP–luluc), 100% of the total environmental impact in terms of ODP, more than 94% of the total environmental impact in terms of AP, almost 100% of the total environmental impact in terms of EP–freshwater, more than 90% of the total environmental impact in terms of EP–marine and more than 91% of the total environmental impact in terms of EP–terrestrial, on average 92% of the total environmental impact in terms of POCP, more than 96% of the total environmental impact in terms of ADP–minerals & metals, 85% of the total environmental impact in terms of ADP–fos., and almost 100% of the total environmental impact in terms of WDP.

The other life cycle stage that has a more significant impact on the environmental burden associated with the life cycle of the URSA TERRA and URSA TECTONIC mineral wool products is the construction stage (i.e. module A4).

For example, module A4 represents on average less than 3% of the total environmental impact in terms of GWP–total AP and EP.

Figure 3: Relative contributions of the different life cycle stages (i.e. modules A1–A3, A4, A5, C1, C2, C3 C4 and D) to the environmental impact per 1m<sup>3</sup> of the URSA TERRA and URSA TECTONIC insulation products also shows that module A4 has a positive environmental impact in terms of POCP, where it presents 1,40% of the total impact in terms of the photochemical ozone creation potential (POCP).

The photochemical ozone (i.e., POCP) is generated by the sunlight-initiated oxidation of volatile organic compounds (VOCs) and carbon monoxide (CO) in the presence of nitrogen oxides (NO<sub>x</sub>). The VOCs react differently with different oxidants (e.g. ozone, NO<sub>2</sub>) and therefore can either have negative or positive effects on the ozone formation. The value of the transport (i.e., A4 and C2) in terms of the POCP is related to the separation of the NO<sub>x</sub> emissions into the NO<sub>2</sub> and NO emissions, with NO and O<sub>3</sub> (ozone) reacting to form NO<sub>2</sub> and O<sub>2</sub> during the night time and thus leading to a reduction of the POCP.

Furthermore, module A4 represents on average less than 1 % of the total environmental impact in terms of ADP–minerals & metals, ADP–fos. and WDP (see Figure 3: Relative contributions of the different life cycle stages (i.e. modules A1–A3, A4, A5, C1, C2, C3 C4 and D) to the environmental impact per 1m<sup>3</sup> of the URSA TERRA and URSA TECTONIC insulation products).

On the other hand, it clear from Figure 3: Relative contributions of the different life cycle stages (i.e. modules A1–A3, A4, A5, C1, C2, C3 C4 and D) to the environmental impact per 1m<sup>3</sup> of the URSA TERRA and URSA TECTONIC insulation products that modules C2, C3 and C4 exert a negligible low or no (i.e. modules A5 and C1) environmental burden in terms of the considered environmental impact categories. Moreover, the installation of the URSA TERRA and URSA TECTONIC mineral wool products into the building (i.e. module A5) and the de–construction or demolition of the products (i.e. module C1) are conducted manually.

A potential environmental benefit was calculated for benefits and loads beyond the system boundary stage (i.e. module D) for all

the considered environmental impact categories. It is clear from Figure 3: Relative contributions of the different life cycle stages (i.e. modules A1–A3, A4, A5, C1, C2, C3 C4 and D) to the environmental impact per 1m<sup>3</sup> of the URSA TERRA and URSA TECTONIC insulation products that there is a potential benefit from the:

- Incineration processes of wooden pallets, labels and mineral oils for heat recovery after use,
- PE foils used for recycling.

A potential environmental benefit can be seen in terms of the following impact categories: negligibly low in terms of GWP–biogenic and 17% of the total impact in terms of GWP–total, 2% of the total impact in terms of AP, 0,05% of the total environmental impact in terms of EP–freshwater, 4% of the total environmental impact in terms of EP–marine and 3% of the total environmental impact in terms of EP–terrestrial, 3% of the total environmental impact in terms of POCP and 13% of the total environmental impact in terms of ADP–fos. (see Figure 3: Relative contributions of the different life cycle stages (i.e. modules A1–A3, A4, A5, C1, C2, C3 C4 and D) to the environmental impact per 1m<sup>3</sup> of the URSA TERRA and URSA TECTONIC insulation products).

*\*The results of relative contributions for different life cycle stages are given according to the average values in terms of the total considered parameters.*

## 6 References

1. GaBi ts (version 10.0.0.71) modelling software
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5. EN ISO 14044:2006 Environmental management - Life cycle assessment - Requirements and guidelines
6. EN ISO 14025:2010 Environmental labels and declarations - Type III environmental
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8. Report No. 198/22-520-1, issued 31. 3. 2022

*The data specified in the EPD are calculated on the basis of the data provided by the manufacturer. In the event that the manufacturer's information is incorrect, calculations do not apply.*