

Owner: Tillex
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Issued: 12-02-2025
Revision: 09-04-2025
Valid to: 12-02-2030

3rd PARTY VERIFIED

EPD

VERIFIED ENVIRONMENTAL PRODUCT DECLARATION | ISO 14025 & EN 15804



Owner of declaration

Tillex
Tinvej 11
4100 Ringsted
Denmark
CVR: 18719371



Issued:
12-02-2025

Valid to:
12-02-2030

Programs

EPD Denmark
www.epddanmark.dk



- ☐ Industry EPD
☒ Product EPD

Declared product(s)

Fastening materials in the form of cable clips, plugs, brackets, Fixing band, screws and mandrels

Number of declared datasets/product variations: 41 datasets which cover 275 products.

Production site

Tinvej 11
4100 Ringsted
Denmark

Use of Guarantees of Origin

- ☒ No certificates used
☐ Electricity covered by GoO
☐ Biogas covered by GoO

Declared/ functional unit

1 kg

Year of production site data (A3)

2023

EPD version

Revision nr. 1: Corrected the enclosed quantities

Basis of calculation

This EPD is developed and verified in accordance with the European standard EN 15804+A2.

Comparability

EPDs of construction products may not be comparable if they do not comply with the requirements in EN 15804. EPD data may not be comparable if the datasets used are not developed in accordance with EN 15804 and if the background systems are not based on the same database.

Validity

This EPD has been verified in accordance with ISO 14025 and is valid for 5 years from the date of issue.

Use

The intended use of an EPD is to communicate scientifically based environmental information for construction products, for the purpose of assessing the environmental performance of buildings.

EPD type

- ☐ Cradle-to-gate with modules C1-C4 and D
☒ Cradle-to-gate with options, modules C1-C4 and D
☐ Cradle-to-grave and module D
☐ Cradle-to-gate
☐ Cradle-to-gate with options

CEN standard EN 15804 serves as the core PCR

Independent verification of the declaration and data, according to EN ISO 14025

☐ internal ☒ eksternal

Third party verifier:

Guangli Du Aalborg University

Martha Katrine Sørensen
EPD Danmark

Life cycle stages and modules (MND = module not declared)

Product			Construction process		Use							End of life				Beyond the system boundary
Raw material supply	Transport	Manufacturing	Transport	Installation process	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Re-use, recovery and recycling potential
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
X	X	X	X	X	ND	ND	ND	ND	ND	ND	ND	X	X	X	X	X

Product information

Product description

This EPD comprises 275 individual products, which have been divided into 41 groups. The grouping has been carried out in accordance with EPD Denmark's guidelines and aims to gather products that can be grouped together because they share similar characteristics. This includes similar production processes, identical material composition and a maximum variation of +/-10% in the LCIA results.

Table 1– Overview of number of declared products and number of average declared products.

Product category	Number of individual products	Number of average products declared
Cable clips	164	12 (groups 1-12)
Plugs	68	23 (groups 16-39)
Clamps	36	2 (group 13-14)
Fixing band	4	1 (group 41)
Screws	2	1 (group 40)
Mandrel	1	1 (group 15)

Error! Not a valid bookmark self-reference. shows an overview of all declared products in this EPD as well as the group number each product is assigned to and the product category to which they belong. In addition, the table also shows the weight (kg) per product as well as the density (g/cm3).

Table 2 – Overview of the declared products, what group no. they have, which product category they belong to and what the weight (g) is per product.

Group no.	Product Category	Product description	Weight per unit (kg)	Density (g/cm3)
1	Screw clips	Screw clips SC-C4 7-10 white 5x33 TX20	3,44E-03	3,36E+00
1	Screw clips	Screw clips SC-C4 7-10 grey 5x33 TX20	3,44E-03	3,36E+00
1	Screw clips	Screw clips SC-C4 7-10 grey 5x33 PH2	3,44E-03	3,36E+00
1	Screw clips	Screw clips SC-C4 7-10 white 5x33 PH2	3,44E-03	3,36E+00
1	Screw clips	Screw clips SC-C4 7-10 black 5x33 PH2	3,44E-03	3,36E+00
1	Screw clips	Screw clips SC-C4 7-10 black 5x33 TX20	3,44E-03	3,36E+00
2	Screw clips	Screw clips SC-C4 8-12 grey 5x33 PH2	3,60E-03	3,00E+00
2	Screw clips	Screw clips SC-C4 8-12 white 5x33 TX20	3,60E-03	3,00E+00
2	Screw clips	Screw clips SC-C4 8-12 white 5x33 PH2	3,60E-03	3,00E+00
2	Screw clips	Screw clips SC-C4 8-12 black 5x33 PH2	3,60E-03	3,00E+00
2	Screw clips	Screw clips SC-C4 8-12 black 5x33 TX20	3,60E-03	3,00E+00
2	Screw clips	Screw clips SC-C4 8-12 grey 5x33 TX20	3,60E-03	3,00E+00
3	Round clips	Clips C 4-6 nature 1,4x20	3,70E-04	2,68E+00
3	Screw clips	Screw clips SC-C4 10-14 black 5x40 TX20	4,60E-03	2,65E+00
3	Screw clips	Screw clips SC-C4 10-14 grey 5x40 TX20	4,60E-03	2,65E+00
3	Screw clips	Screw clips SC-C4 10-14 white 5x40 TX20	4,60E-03	2,65E+00
3	Screw clips	Screw clips SC-C4 10-14 white 5x40 PH2	4,60E-03	2,65E+00
3	Screw clips	Screw clips SC-C4 10-14 grey 5x40 PH2	4,60E-03	2,65E+00
3	Screw clips	Screw clips SC-C4 10-14 black 5x40 PH2	4,60E-03	2,65E+00
4	Oval clips	Clips C 2x4 nature 1,2x16	2,23E-04	2,31E+00
5	Drill clips	Drill clips DC-C4 14-18 white 4,8x40 PH2 XXL	5,78E-03	2,16E+00
5	Drill clips	Drill clips DC-C4 14-18 grey 4,8x40 PH2	5,78E-03	2,16E+00
5	Drill clips	Drill clips DC-C4 14-18 white 4,8x40 PH2	5,78E-03	2,16E+00
5	Drill clips	Drill clips DC-C4 14-18 grey 4,8x40 TX20 XXL	5,78E-03	2,16E+00
5	Drill clips	Drill clips DC-C4 14-18 grey 4,8x40 TX20	5,78E-03	2,16E+00
5	Drill clips	Drill clips DC-C4 14-18 white 4,8x40 TX20 XXL	5,78E-03	2,16E+00
5	Drill clips	Drill clips DC-C4 14-18 white 4,8x40 TX20	5,78E-03	2,16E+00
5	Drill clips	Drill clips DC-C4 14-18 grey 4,8x40 PH2 XXL	5,78E-03	2,16E+00
5	Oval clips	Clips C 5x8 grey 2.0x25	9,62E-04	2,15E+00
5	Oval clips	Clips C 5x8 brown 2.0x25	9,62E-04	2,15E+00
5	Oval clips	Clips C 5x8 white 2.0x25	9,62E-04	2,15E+00
5	Round clips	Clips C 3-5 nature 1.2x16	2,39E-04	2,09E+00
5	Round clips	Clips C 3-5 white 1.2x16	2,39E-04	2,13E+00
5	Round clips	Clips C 3-5 black 1.2x16	2,39E-04	2,13E+00
5	Round clips	Clips C 8-12 white 2.0x45	1,71E-03	2,10E+00
5	Screw clips	Screw clips SC-C4 14-18 black 5x40 PH2	5,37E-03	2,08E+00
5	Screw clips	Screw clips SC-C4 14-18 white 5x40 TX20	5,37E-03	2,08E+00
5	Screw clips	Screw clips SC-C4 14-18 grey 5x40 TX20	5,37E-03	2,08E+00
5	Screw clips	Screw clips SC-C4 14-18 black 5x40 TX20	5,37E-03	2,08E+00
5	Screw clips	Screw clips SC-C4 14-18 grey 5x40 PH2 XXL	5,37E-03	2,08E+00
5	Screw clips	Screw clips SC-C4 14-18 grey 5x40 PH2	5,37E-03	2,08E+00
5	Screw clips	Screw clips SC-C4 14-18 grey 5x40 TX20 XXL	5,37E-03	2,08E+00
5	Screw clips	Screw clips SC-C4 14-18 white 5x40 TX20 XXL	5,37E-03	2,08E+00

Group no.	Product Category	Product description	Weight per unit (kg)	Density (g/cm3)
5	Screw clips	Screw clips SC-C4 14-18 white 5x40 PH2 XXL	5.37E-03	2.08E+00
5	Screw clips	Screw clips SC-C4 14-18 white 5x40 PH2	5.37E-03	2.08E+00
5	Oval clips	Clips C 6x9 white 1.8x25	8.10E-04	2.07E+00
5	Oval clips	Clips C 6x9 grey 1.8x25	8.10E-04	2.07E+00
5	Oval clips	Clips C 3x5 white 1,2x20	2.96E-04	2.05E+00
5	Oval clips	Clips C 3x5 nature 1,2x20	2.96E-04	2.01E+00
5	Oval clips	Clips C 3x5 brown 1,2x20	2.96E-04	2.05E+00
5	Oval clips	Clips C 3x5 black 1,2x20	2.96E-04	2.05E+00
6	Screw clips	Screw clips SC-C4 18-22 grey 5x45 TX20 XXL	6.54E-03	1.91E+00
6	Screw clips	Screw clips SC-C4 18-22 grey 5x45 PH2 XXL	6.54E-03	1.91E+00
6	Screw clips	Screw clips SC-C4 18-22 white 5x45 PH2	6.54E-03	1.91E+00
6	Screw clips	Screw clips SC-C4 18-22 grey 5x45 PH2	6.54E-03	1.91E+00
6	Screw clips	Screw clips SC-C4 18-22 white 5x45 TX20 XXL	6.54E-03	1.91E+00
6	Screw clips	Screw clips SC-C4 18-22 black 5x45 TX20	6.54E-03	1.91E+00
6	Screw clips	Screw clips SC-C4 18-22 white 5x45 PH2 XXL	6.54E-03	1.91E+00
6	Screw clips	Screw clips SC-C4 18-22 white 5x45 TX20	6.54E-03	1.91E+00
6	Screw clips	Screw clips SC-C4 18-22 black 5x45 PH2	6.54E-03	1.91E+00
6	Screw clips	Screw clips SC-C4 18-22 grey 5x45 TX20	6.54E-03	1.91E+00
6	Runde clips	Clips C 8-12 black 2,0x35	1.46E-03	1.88E+00
6	Runde clips	Clips C 8-12 white 2,0x35	1.46E-03	1.88E+00
6	Round clips	Clips C 8-12 grey 2,0x35	1.46E-03	1.88E+00
6	Round clips	Clips C 7-10 grey 1.8x30	1.05E-03	1.87E+00
6	Round clips	Clips C 7-10 white 1.8x30	1.05E-03	1.87E+00
6	Round clips	Clips C 7-10 black 1.8x30	1.05E-03	1.87E+00
6	Round clips	Clips C 10-14 white 2,0x45	1.91E-03	1.85E+00
6	Drill clips	Drill clips DC-C4 18-22 white 4,8x40 TX20 XXL	6.67E-03	1.83E+00
6	Drill clips	Drill clips DC-C4 18-22 grey 4,8x40 PH2	6.67E-03	1.83E+00
6	Drill clips	Drill clips DC-C4 18-22 grey 4,8x40 TX20	6.67E-03	1.83E+00
6	Drill clips	Drill clips DC-C4 18-22 grey 4,8x40 TX20 XXL	6.67E-03	1.83E+00
6	Drill clips	Drill clips DC-C4 18-22 white 4,8x40 PH2 XXL	6.67E-03	1.83E+00
6	Drill clips	Drill clips DC-C4 18-22 white 4,8x40 TX20	6.67E-03	1.83E+00
6	Drill clips	Drill clips DC-C4 18-22 white 4,8x40 PH2	6.67E-03	1.83E+00
6	Drill clips	Drill clips DC-C4 18-22 grey 4,8x40 PH2 XXL	6.67E-03	1.83E+00
6	Oval clips	Clips C 4x6 nature 1,2x20	3.30E-04	1.79E+00
6	Oval clips	Clips C 6x10 white 2,0x25	1.14E-03	1.78E+00
6	Oval clips	Clips C 6x10 grey 2,0x25	1.14E-03	1.78E+00
6	Screw clips	Screw clips SC-C4 22-26 black 5x45 PH2	7.02E-03	1.78E+00
6	Screw clips	Screw clips SC-C4 22-26 grey 5x45 PH2	7.02E-03	1.78E+00
6	Screw clips	Screw clips SC-C4 22-26 black 5x45 TX20	7.02E-03	1.78E+00
6	Screw clips	Screw clips SC-C4 22-26 grey 5x45 TX20	7.02E-03	1.78E+00
6	Screw clips	Screw clip SC-C4 22-26 white 5x45 TX20	7.02E-03	1.78E+00
6	Screw clips	Screw clip SC-C4 22-26 white 5x45 PH2	7.02E-03	1.78E+00
6	Round clips	Clips C 7-10 white 1.8x25 XL	9.51E-04	1.75E+00
6	Round clips	Clips C 7-10 grey 1.8x25	9.51E-04	1.75E+00
6	Round clips	Clips C 7-10 black 1.8x25	9.51E-04	1.75E+00
6	Round clips	Clips C 7-10 red 1.8x25	9.51E-04	1.75E+00
6	Round clips	Clips C 7-10 white 1.8x25	9.51E-04	1.75E+00
6	Round clips	Clips C 8-12 white 2,0x30 XL	1.33E-03	1.73E+00
6	Round clips	Clips C 8-12 white, 2,0x30 XXL	1.33E-03	1.73E+00
6	Round clips	Clips C 8-12 black 2,0x30	1.33E-03	1.73E+00
6	Round clips	Clips C 8-12 grey 2,0x30 XL	1.33E-03	1.73E+00
6	Round clips	C clips 8-12 grey 2,0x30	1.33E-03	1.73E+00
6	Rune clips	C clips 8-12 white 2,0x30	1.33E-03	1.73E+00
6	Round clips	C clips 12-16 grey 2,0x40	2.02E-03	1.71E+00
6	Round clips	C clips 12-16 white 2,0x40	2.02E-03	1.71E+00
6	Round clips	C clips 12-16 black 2,0x40	2.02E-03	1.71E+00
6	Oval clips	Clips C 11x22 white 2,5x35	2.85E-03	1.71E+00
6	Round clips	Clips C 10-14 white 2,0x35	1.66E-03	1.68E+00
6	Round clips	Clips C 10-14 grey 2,0x35	1.66E-03	1.68E+00
6	Round clips	Clips C 10-14 black 2,0x35	1.66E-03	1.68E+00
7	Oval clips	Clips C 14x28 white 2,5x40	3.17E-03	1.61E+00
7	Round clips	Clips C 7-10 grey 1.8x25 XL	1.05E-03	1.61E+00
7	Round clips	Clips C 5-7 nature 1,2x20	3.86E-04	1.56E+00
7	Round clips	Clips C 5-7 nature 1,2x20 XL	3.86E-04	1.56E+00
7	Oval clips	Clips C 7x14 white 2,0x25	1.32E-03	1.58E+00
7	Oval clips	Clips C 7x14 grey 2,0x25	1.32E-03	1.58E+00
7	Round clips	Clips C 5-7 brown 1,2x20	3.94E-04	1.57E+00
7	Round clips	Clips C 5-7 grey 1,2x20	3.94E-04	1.57E+00
7	Round clips	Clips C 5-7 black 1,2x20	3.94E-04	1.57E+00
7	Round clips	Clips C 5-7 white 1,2x20 XL	3.94E-04	1.57E+00
7	Round clips	Clips C 5-7 white 1,2x20	3.94E-04	1.57E+00
7	Round clips	Clips C 10-14 white, 2,0x30 XXL	1.53E-03	1.55E+00
7	Round clips	Clips C 10-14 grey 2,0x30	1.53E-03	1.55E+00
7	Round clips	Clips C 10-14 white 2,0x30	1.53E-03	1.55E+00
7	Round clips	Clips C 10-14 black 2,0x30	1.53E-03	1.55E+00
7	Plug clips, PC	Plug clips PC 8-12 white 2,0x35	1.93E-03	1.50E+00
7	Plug clips, PC	Plug clips PC 8-12 grey 2,0x35	1.93E-03	1.50E+00
7	Round clips	Clips C 12-16 grey 2,0x35	1.94E-03	1.50E+00
7	Round clips	Clips C 12-16 black 2,0x35	1.94E-03	1.50E+00
7	Round clips	Clips C 12-16 white 2,0x35	1.94E-03	1.50E+00
7	Round clips	Clips C 18-22 white 2,0x55	3.14E-03	1.48E+00
7	Round clips	Clips C 18-22 black 2,0x55	3.14E-03	1.48E+00
7	Round clips	Clips C 18-22 grey 2,0x55	3.14E-03	1.48E+00
8	Round clips	Clips C 14-20 white 2,0x45	2.63E-03	1.45E+00
8	Round clips	Clips C 14-20 black 2,0x45	2.63E-03	1.45E+00

Group no.	Product Category	Product description	Weight per unit (kg)	Density (g/cm3)
8	Round clips	Clips C 14-20 grey 2.0x45	2.63E-03	1.45E+00
8	Plugs clips double	Plug clip double PC-D 14-18 white 2.5x40 XXL	4.67E-03	1.41E+00
8	Plugs clips double	Plug clip double PC-D 14-18 grey 2.5x40 XXL	4.67E-03	1.41E+00
8	Plug clips, PC	Plug clip PC 10-14 white 2.0x35	2.19E-03	1.39E+00
8	Plug clips, PC	Plug clip PC 10-14 grey 2.0x35	2.19E-03	1.39E+00
8	Round clips	Clips C 18-22 black 2.0x45	2.89E-03	1.38E+00
8	Round clips	Clips C 18-22 white 2.0x45	2.89E-03	1.38E+00
8	Round clips	Clips C 18-22 grey 2.0x45	2.89E-03	1.38E+00
8	Round clips	Clips C 22-26 white 2.0x55	3.66E-03	1.36E+00
8	Round clips	Clips C 22-26 grey 2.0x55	3.66E-03	1.36E+00
8	Round clips	Clips C 22-26 black 2.0x55	3.66E-03	1.36E+00
8	Oval clips	Clips C 9x18 grey 2.0x30	1.93E-03	1.36E+00
8	Oval clips	Clips C 9x18 white 2.0x30	1.93E-03	1.36E+00
8	Round clips	Clips C 14-20 white 2.0x35	2.39E-03	1.34E+00
8	Round clips	Clips C 14-20 black 2.0x35	2.39E-03	1.34E+00
8	Round clips	Clips C 14-20 white, 2.0x35 XXL	2.39E-03	1.34E+00
9	Round clips	Clips C 14-20 grey 2.0x35	2.63E-03	1.28E+00
9	Plugs clips double	Plug clip double PC-D 18-22 white 2.5x45 XXL	5.84E-03	1.27E+00
9	Plugs clips double	Plug clip double PC-D 18-22 grey 2.5x45 XXL	5.84E-03	1.27E+00
9	Plugs clips double	Plug clip double PC-D 18-22 grey 2.5x45	5.84E-03	1.27E+00
9	Plugs clips double	Plug clip double PC-D 18-22 white 2.5x45	5.84E-03	1.27E+00
9	Round clips	Clips C 22-26 black 2.0x45	3.49E-03	1.27E+00
9	Round clips	Clips C 22-26 grey 2.0x45	3.49E-03	1.27E+00
9	Round clips	Clips C 22-26 white 2.0x45	3.49E-03	1.27E+00
10	Plug clips, PC	Plug clip PC 14-18 white 2.5x40 XXL	4.17E-03	1.18E+00
10	Plug clips, PC	Plug clip PC 14-18 white 2.5x40	4.17E-03	1.18E+00
10	Plug clips, PC	Plug clip PC 14-18 grey 2.5x40	4.17E-03	1.18E+00
10	Plug clips, PC	Plug clips PC 14-18 grey 2.5x40 XXL	4.17E-03	1.18E+00
10	Plug clips, PC	Plug clip PC 18-22 grey 2.5x40 XXL	4.47E-03	1.16E+00
10	Plug clips, PC	Plug clip PC 18-22 white 2.5x40	4.47E-03	1.16E+00
10	Plug clips, PC	Plug clip PC 18-22 grey 2.5x40	4.47E-03	1.16E+00
10	Plug clips, PC	Plug clip PC 18-22 white 2.5x40 XXL	4.47E-03	1.16E+00
10	Plugs clips double	Plug clip double PC-D 14-18 grey 2.5x40	4.67E-03	1.15E+00
10	Plugs clips double	Plug clip double PC-D 14-18 white 2.5x40	4.67E-03	1.15E+00
11	Drill clip, DP2	Drill plugs DP2 white 40mm	1.76E-03	1.16E+00
12	Drill clip, DP6	Drill plugs DP6 zinc 37mm	1.05E-02	7.48E+00
13	Metal Clamps	Metal Clamps MB 1-7	3.06E-03	7.85E+00
13	Metal Clamps	Metal Clamps MB 1-7.5	3.15E-03	7.85E+00
13	Metal Clamps	Metal Clamps MB 1-8	3.22E-03	7.85E+00
13	Metal Clamps	Metal Clamps MB 1-8.5	3.41E-03	7.85E+00
13	Metal Clamps	Metal Clamps MB 1-9	3.54E-03	7.85E+00
13	Metal Clamps	Metal Clamps MB 1-9.5	3.67E-03	7.85E+00
13	Metal Clamps	Metal Clamps MB 1-10	3.85E-03	7.85E+00
13	Metal Clamps	Metal Clamps MB 1-11	4.04E-03	7.85E+00
13	Metal Clamps	Metal Clamps MB 1-12	4.29E-03	7.85E+00
13	Metal Clamps	Metal Clamps MB 1-14	4.70E-03	7.85E+00
13	Metal Clamps	Metal Clamps MB 1-16	5.03E-03	7.85E+00
13	Metal Clamps	Metal Clamps MB 1-18	5.67E-03	7.85E+00
13	Metal Clamps	Metal Clamps MB 1-20	5.86E-03	7.85E+00
13	Metal Clamps	Metal Clamps MB 1-22	6.32E-03	7.85E+00
13	Metal Clamps	Metal Clamps B 2-16	6.47E-03	7.85E+00
13	Metal Clamps	Metal Clamps B 2-18	7.19E-03	7.85E+00
13	Metal Clamps	Metal Clamps MB 2-20	7.91E-03	7.85E+00
13	Metal Clamps	Metal Clamps MB 2-22	8.40E-03	7.85E+00
13	Metal Clamps	Metal Clamps MB 2-25	9.13E-03	7.85E+00
13	Metal Clamps	Metal Clamps MB 2-30	1.09E-02	7.85E+00
13	Metal Clamps	Metal Clamps MB 2-35	1.20E-02	7.85E+00
13	Metal Clamps	Metal Clamps MB 2-42	1.38E-02	7.85E+00
13	Metal Clamps	Metal Clamps MB 2-46	1.44E-02	7.85E+00
13	Metal Clamps	Metal Clamps MB 2-50	1.58E-02	7.85E+00
14	Grooved clips	Grooved clips GR-C 2x10 grey	2.22E-03	9.18E-01
14	Grooved clips	Grooved clips GR-C 16 grey	1.67E-03	9.18E-01
14	Grooved clips	Grooved clips GR-C 20 grey	1.81E-03	9.18E-01
14	Grooved clips	Grooved clips GR-C 2x10 grey XXL	2.22E-03	9.18E-01
14	Grooved clips	Grooved clips GR-C 16 grey XXL	1.67E-03	9.18E-01
14	Grooved clips	Grooved clips GR-C 20 grey XXL	1.81E-03	9.18E-01
14	Clamps	Clamps B 3-5 white	2.50E-04	9.18E-01
14	Clamps	Clamps B 5-7 white	3.30E-04	9.18E-01
14	Clamps	Clamps B 7-10 white	4.30E-04	9.18E-01
14	Clamps	Clamps B 10-14 white	9.60E-04	9.18E-01
14	Clamps	Clamps B 14-20 white	1.64E-03	9.18E-01
14	Clamps	Clamps B 20-26 white	2.76E-03	9.18E-01
15	Mandrel	Mandrel for Collar plugs + 97x13	1.53E-02	1.16E+00
16	Speedex plugs, SD	Speedex plugs SD steel	1.94E-03	7.85E+00
17	Stella plugs	Plugs ST red UHJ TX25 5x80	1.18E-02	6.67E+00
18	Stella plugs	Plugs ST red Pan PZ2 5x80	1.54E-02	4.62E+00
19	Stella plugs	Plugs ST black Pan TX25 5x90	1.70E-02	4.35E+00
19	Stella plugs	Plugs ST red Pan TX25 5x80	1.57E-02	4.31E+00
20	Stella plugs	Plugs ST red Eye 5x55	1.89E-02	4.12E+00
20	Stella plugs	Plugs ST red Pan PZ2 5x55	1.26E-02	4.10E+00
20	Stella plugs	Plugs ST black Pan PZ2 5x90	1.72E-02	4.08E+00
20	Stella plugs	Plugs ST black UHJ TX25 5x90	1.52E-02	4.03E+00
20	Stella plugs	Plugs ST red Hook 5x55	1.81E-02	3.99E+00
20	Stella plugs	Plugs ST black Eye 5x55	1.97E-02	3.99E+00
20	Stella universal plugs	Plugs ST Universal PAN PZ2 5x65	1.43E-02	3.94E+00

Group no.	Product Category	Product description	Weight per unit (kg)	Density (g/cm3)
20	Stella plugs	Plugs ST black Pan PZ2 5x65	1,43E-02	3,94E+00
20	Stella plugs	Plugs ST black Pan TX25 5x65	1,42E-02	3,91E+00
20	Stella universal plugs	Plugs ST universal PAN TX25 5x65	1,42E-02	3,91E+00
20	Stella plugs	Plugs ST red Pan TX25 5x55	1,28E-02	3,91E+00
20	Stella universal plugs	Plugs ST Universal HOOK 5x55	1,85E-02	3,82E+00
20	Stella plugs	Plugs ST black Hook 5x55	1,85E-02	3,82E+00
20	Stella plugs	Plugs ST red Collum TX25 5x65	1,16E-02	3,82E+00
20	Stella plugs	Plugs ST red UHJ TX25 5x65	1,16E-02	3,81E+00
21	Stella universal plugs	Plugs ST Universal EYE 5x55	1,97E-02	3,74E+00
21	Stella plugs	Plugs ST red Angle 5x55	1,50E-02	3,69E+00
21	Stella plugs	Plugs ST black UHJ TX25 5x75	1,29E-02	3,66E+00
21	Stella universal plugs	Plugs ST Universal UHJ PZ2 5x75	1,29E-02	3,66E+00
21	Stella universal plugs	Plugs ST Universal UHJ TX25 5x75	1,29E-02	3,66E+00
21	Stella plugs	Plugs ST black Collum TX25 5x75	1,29E-02	3,65E+00
22	Stella plugs	Plugs ST black Angle 5x55	1,54E-02	3,42E+00
22	Stella universal plugs	Plugs ST Universal ANGLE 5x55	1,54E-02	3,42E+00
23	Stella plugs	Plugs ST red 10x49 no screw	3,21E-03	1,61E+00
24	Stella plugs	Plugs ST black 10x59 no screw	3,63E-03	1,54E+00
25	Clips plugs	Clips plugs CP yellow 5,5x25	3,75E-04	9,18E-01
26	Clips plugs	Clips plugs CP white 5,5x20	4,96E-04	9,18E-01
27	Swip plugs	Swip plugs SP	4,39E-03	1,16E+00
27	Flex plugs, FP	Flex plugs FP 6x30	3,94E-03	1,14E+00
27	Attack plugs, AP	Attack plugs AP 10x55 grey	2,59E-03	1,14E+00
27	Flex plugs, FP	Flex plugs FP 14x75	1,65E-03	1,14E+00
27	Flex plugs, FP	Flex plugs FP 12x60	6,69E-04	1,14E+00
27	Flex plugs, FP	Flex plugs FP 10x50	3,54E-04	1,14E+00
28	Flex plugs, FP	Flex plugs FP 8x40	1,12E-02	1,14E+00
28	Attack plugs, AP	Attack plugs AP 12x60 grey	6,82E-03	1,14E+00
28	Flex plugs, FP	Flex plugs FP 5x25	7,01E-03	1,14E+00
29	Attack plugs, AP	Attack plugs AP 14x75 grey	2,13E-03	1,14E+00
30	Universal plugs, UP	Universal plugs without collar UP8	4,75E-04	9,69E-01
30	Universal plugs, UP	Universal plugs without collar UP10	4,79E-04	9,69E-01
30	Collar plugs	Collar plugs KP yellow 5,5x25	4,75E-04	9,69E-01
30	Collar plugs	Collar plugs KP red 5,5x35 XL	4,75E-04	9,69E-01
31	Universal plugs, UPK	Universal plugs with collar UPK 5x30	4,75E-04	9,69E-01
32	Collar plugs	Collar plugs KP green 12x60	2,74E-03	9,69E-01
32	Collar plugs	Collar plugs KP grey 14x70	1,55E-03	9,69E-01
32	Collar plugs	Collar plugs KP orange 16x80	6,20E-04	9,69E-01
32	Universal plugs, UPK	Universal plugs with collar UPK 10x60	3,56E-04	9,69E-01
32	Collar plugs	Collar plugs KP yellow 5,5x25 XL	2,86E-03	9,69E-01
32	Collar plugs	Collar plugs KP red 5,5x35 XXL	1,61E-03	9,69E-01
32	Collar plugs	Collar plugs KP yellow 5,5x25 XXL	7,09E-04	9,69E-01
32	Collar plugs plus	Collar plugs KP red + 5,5x35	3,78E-04	9,69E-01
33	Fastex plugs	Fastex plugs P green X	4,83E-04	9,69E-01
33	Collar plugs	Collar plugs KP purple 5,5x30	4,81E-04	9,69E-01
34	Fastex plugs	Fastex plugs P yellow X	3,80E-04	9,69E-01
34	Fastex plugs	Fastex plugs P red X	3,94E-04	9,69E-01
34	Collar plugs	Collar plugs KP white 5,5x20	3,94E-04	9,69E-01
34	Universal plugs, UPK	Universal plugs with collar UPK 6x35	3,94E-04	9,69E-01
35	Fastex plugs	Fastex plugs P purple X	2,97E-04	9,69E-01
35	Universal plugs, UP	Universal plugs without collar UP6	7,32E-04	9,69E-01
35	Collar plugs	Collar plugs KP red 5,5x35	3,58E-03	9,69E-01
36	Universal plugs, UP	Universal plugs without collar UP5	1,42E-03	9,69E-01
37	Universal plugs, UPK	Universal plugs with collar UPK 8x50	2,28E-03	9,69E-01
38	Collar plugs	Collar plugs KP brown 8,0x40	5,87E-03	9,69E-01
39	Collar plugs	Collar plugs KP blue 10x45	9,06E-03	9,69E-01
40	Screws	Screws EI 5x33 PH2	3,61E-03	7,85E+00
40	Screws	Screws EI 5x33 Torx 20	3,46E-03	7,85E+00
41	Fixing band	Fixing band GL1 0.7x12 10m	6,01E-01	7,85E+00
41	Fixing band	Fixing band GL1 0.7x17 10m	7,65E-01	7,85E+00
41	Fixing band	Fixing band GL5 0.7x17 10m	7,33E-01	7,85E+00
41	Fixing band	Fixing band GB1 0.7x17 10m	7,53E-01	7,85E+00

Table 3 shows the average material composition (kg/kg) for all declared groups.

Table 3– Average material composition (kg/kg) for all declared groups.

Group no.	Weight per piece (kg)	Density (g/cm3)	Steel	Zinc	HDPE	Nylon	PP	Masterbatch
1	3,44E-03	3,36E+00	82,3%	0,0%	0,0%	0,0%	17,3%	0,2%
2	3,60E-03	3,00E+00	78,6%	0,0%	0,0%	0,0%	21,0%	1,0%
3	3,99E-03	2,65E+00	74,1%	0,0%	0,0%	0,0%	25,4%	0,9%
4	2,23E-04	2,31E+00	68,9%	0,0%	0,0%	0,0%	31,1%	0,9%
5	3,49E-03	2,11E+00	63,9%	0,0%	0,0%	0,0%	35,4%	1,0%
6	3,84E-03	1,81E+00	55,6%	0,0%	0,0%	0,0%	43,6%	1,1%
7	1,51E-03	1,54E+00	45,9%	0,0%	0,0%	0,0%	53,1%	0,6%
8	2,91E-03	1,38E+00	38,0%	0,0%	0,0%	0,0%	60,8%	0,8%
9	4,56E-03	1,27E+00	31,6%	0,0%	0,0%	0,0%	67,1%	0,8%
10	4,39E-03	1,17E+00	24,2%	0,0%	0,0%	0,0%	74,3%	0,8%

Group no.	Weight per piece (kg)	Density (g/cm ³)	Steel	Zinc	HDPE	Nylon	PP	Masterbatch
11	1,76E-03	1,16E+00	0,0%	0,0%	0,0%	98,0%	0,0%	0,0%
12	1,05E-02	7,48E+00	49,9%	50,1%	0,0%	0,0%	0,0%	0,0%
13	6,91E-03	7,85E+00	100,0%	0,0%	0,0%	0,0%	0,0%	0,0%
14	1,48E-03	9,18E-01	0,0%	0,0%	0,0%	0,0%	98,0%	2,0%
15	1,53E-02	1,16E+00	0,0%	0,0%	0,0%	98,0%	0,0%	2,0%
16	1,94E-03	7,85E+00	100,0%	0,0%	0,0%	0,0%	0,0%	2,0%
17	1,18E-02	6,67E+00	96,9%	0,0%	0,0%	3,0%	0,0%	0,4%
18	1,54E-02	4,62E+00	87,8%	0,0%	0,0%	11,9%	0,0%	0,3%
19	1,64E-02	4,33E+00	85,9%	0,0%	0,0%	13,9%	0,0%	0,3%
20	1,54E-02	3,95E+00	82,8%	0,0%	0,0%	16,9%	0,0%	0,4%
21	1,44E-02	3,68E+00	80,2%	0,0%	0,0%	19,4%	0,0%	0,6%
22	1,54E-02	3,42E+00	77,5%	0,0%	0,0%	22,0%	0,0%	0,4%
23	3,21E-03	1,61E+00	32,7%	0,0%	0,0%	66,0%	0,0%	0,4%
24	3,63E-03	1,54E+00	28,9%	0,0%	0,0%	69,7%	0,0%	0,4%
25	4,96E-04	9,18E-01	0,0%	0,0%	0,0%	0,0%	98,0%	2,0%
26	3,75E-04	9,18E-01	0,0%	0,0%	0,0%	0,0%	98,0%	2,0%
27	3,46E-03	1,14E+00	0,0%	0,0%	0,0%	99,7%	0,0%	2,0%
28	2,94E-03	1,14E+00	0,0%	0,0%	0,0%	100,0%	0,0%	2,0%
29	1,12E-02	1,14E+00	0,0%	0,0%	0,0%	100,0%	0,0%	2,0%
30	1,29E-03	9,69E-01	0,0%	0,0%	98,0%	0,0%	0,0%	2,0%
31	3,78E-04	9,69E-01	0,0%	0,0%	98,0%	0,0%	0,0%	0,0%
32	2,89E-03	9,69E-01	0,0%	0,0%	98,0%	0,0%	0,0%	1,8%
33	6,07E-04	9,69E-01	0,0%	0,0%	98,0%	0,0%	0,0%	1,0%
34	4,66E-04	9,69E-01	0,0%	0,0%	98,0%	0,0%	0,0%	0,0%
35	5,26E-04	9,69E-01	0,0%	0,0%	98,0%	0,0%	0,0%	0,0%
36	3,56E-04	9,69E-01	0,0%	0,0%	98,0%	0,0%	0,0%	0,0%
37	1,61E-03	9,69E-01	0,0%	0,0%	98,0%	0,0%	0,0%	0,0%
38	1,42E-03	9,69E-01	0,0%	0,0%	98,0%	0,0%	0,0%	0,0%
39	2,28E-03	9,69E-01	0,0%	0,0%	98,0%	0,0%	0,0%	0,0%
40	3,53E-03	7,85E+00	100,0%	0,0%	0,0%	0,0%	0,0%	1,0%
41	7,13E-01	7,85E+00	100,0%	0,0%	0,0%	0,0%	0,0%	2,0%

The product's sales and transport packaging (composition) is listed in Table 4.

Table 4– Average material composition of packaging for all declared groups.

Group no.	Euro pallet (pcs/kg)	Foil (kg/kg)	Label (kg/kg)	Cardboard box (kg/kg)	Bucket (kg/kg)
1	2,09E-03	2,91E-03	4,36E-03	8,48E-02	0,00E+00
2	2,01E-03	2,78E-03	4,17E-03	8,13E-02	0,00E+00
3	2,65E-03	4,01E-03	6,04E-03	9,68E-02	0,00E+00
4	6,13E-03	2,02E-02	2,69E-02	3,04E-01	0,00E+00
5	3,41E-03	6,05E-03	8,62E-03	1,18E-01	1,95E-02
6	3,17E-03	4,14E-03	6,35E-03	1,05E-01	1,66E-02
7	3,98E-03	6,70E-03	9,72E-03	1,56E-01	5,69E-03
8	4,15E-03	4,51E-03	7,38E-03	1,25E-01	2,60E-02
9	4,79E-03	4,80E-03	7,98E-03	1,31E-01	4,50E-02
10	3,91E-03	2,88E-03	4,85E-03	8,53E-02	5,57E-02
11	5,19E-03	6,93E-03	8,52E-03	1,53E-01	0,00E+00
12	1,56E-03	2,55E-03	3,81E-03	5,72E-02	0,00E+00
13	1,83E-03	2,18E-03	3,47E-03	6,34E-02	0,00E+00
14	5,74E-03	8,04E-03	1,23E-02	1,76E-01	6,48E-02
15	0,00E+00	0,00E+00	4,59E-02	2,39E-01	0,00E+00
16	2,09E-03	4,63E-03	6,17E-03	9,27E-02	0,00E+00
17	3,40E-03	4,13E-03	6,78E-03	1,16E-01	0,00E+00
18	2,73E-03	3,17E-03	5,20E-03	9,16E-02	0,00E+00
19	2,60E-03	2,73E-03	4,90E-03	8,68E-02	0,00E+00
20	2,46E-03	3,03E-03	5,34E-03	8,89E-02	0,00E+00
21	2,63E-03	3,25E-03	5,70E-03	9,35E-02	0,00E+00
22	2,73E-03	3,16E-03	5,18E-03	9,13E-02	0,00E+00
23	3,87E-03	6,23E-03	1,25E-02	1,64E-01	0,00E+00
24	4,92E-03	6,72E-03	1,10E-02	1,75E-01	0,00E+00
25	3,60E-03	9,07E-03	1,21E-02	1,66E-01	0,00E+00
26	4,40E-03	1,20E-02	1,60E-02	2,08E-01	0,00E+00
27	4,75E-03	8,33E-03	1,26E-02	1,99E-01	0,00E+00
28	4,00E-03	7,74E-03	1,11E-02	1,68E-01	0,00E+00
29	4,23E-03	5,46E-03	8,95E-03	1,48E-01	0,00E+00
30	4,94E-03	8,33E-03	1,28E-02	1,89E-01	0,00E+00
31	5,57E-03	1,38E-02	2,12E-02	2,52E-01	0,00E+00

Group no.	Euro pallet (pcs/kg)	Foil (kg/kg)	Label (kg/kg)	Cardboard box (kg/kg)	Bucket (kg/kg)
32	4,99E-03	6,39E-03	1,02E-02	1,53E-01	4,18E-02
33	4,15E-03	9,03E-03	1,39E-02	1,81E-01	0,00E+00
34	4,74E-03	1,19E-02	1,69E-02	2,13E-01	0,00E+00
35	4,87E-03	1,09E-02	1,66E-02	2,09E-01	0,00E+00
36	5,78E-03	1,46E-02	2,25E-02	2,63E-01	0,00E+00
37	5,35E-03	7,56E-03	1,24E-02	1,93E-01	0,00E+00
38	4,23E-03	7,02E-03	1,05E-02	1,82E-01	0,00E+00
39	4,17E-03	5,36E-03	8,79E-03	1,45E-01	0,00E+00
40	8,88E-04	1,47E-03	2,26E-03	3,54E-02	0,00E+00
41	1,17E-04	0,00E+00	1,42E-04	0,00E+00	0,00E+00

Representativeness

The declared unit is 1 kg. Data covers production of injection-molded plastic elements such as cable clips and plugs at the factory in Ringsted.

Data for the underlying LCA is based on annual averages for 2023. Background data is based on the ecoinvent v. 3.10 database.

The data used is less than 10 years old in accordance with EN15804:2012+A2:2019.

Content of hazardous substances

The product does not contain substances from the REACH Candidate List, "Candidate List of Substances of Very High Concern for authorisation", whose content exceeds 0.1% by weight (<http://echa.europa.eu/candidate-list-table>).

Use of the product(s)

Cable clips

Cable management systems are components used to organize and secure wires and cables, keeping them in place and preventing tangling. They are often used in electrical and electronic installations, ensuring that the wires remain stable and protected from mechanical stress and wear. Cable management systems can also improve aesthetics and safety by keeping wires away from areas where they could interfere or be damaged.

Total number of products in this category: 164

Plugs

Tillex wall plugs are specially designed anchors to ensure stable installation in various wall materials such as brick, concrete and plaster. Their range includes plugs with different expansion mechanisms and sizes to suit different load requirements and installation purposes.

Total number of products in this category: 68

Clamps

Tillex's clamps are designed to secure cables and wires in a stable and orderly manner in both private and professional installations. They come in different types and sizes to suit different cables and mounting needs, and they are made to hold cables firmly without damaging them.

Total number of products in this category: 36

Fixing band

Tillex's patented strap is a versatile, perforated metal strap used for the stable fastening of pipes, cables and other installation elements. The strap can be easily adjusted in length and shape to suit different tasks and installation needs, ensuring a strong and secure solution that can withstand high loads.

Total number of products in this category: 4

Screws

Tillex's metal bracket screws are designed for easy and secure mounting of metal brackets in various installation environments. These screws ensure durable fastening and are adapted to withstand vibrations and loads, making them ideal for reliable installations in construction and electrical work.

Total number of products in this category: 2

Mandrel

Tillex' mandrel for collar plugs is made of high-quality recycled nylon (Polyamide 6) and can withstand temperatures from -40 °C to +80 °C. This tool is halogen-free and designed for safe installation of collar plugs. The product has dimensions of 97x13 mm and comes in black.

Total number of products in this category: 1

Product images



Figure 1- Cable clips from Tillex (selection)



Figure 2- Plugs from Tillex (selection)



Figure 3- Clamps from Tillex (selection)



Figure 4- Fixing band from Tillex (selection)



Figure 5- Screws from Tillex (selection)



Figure 6- Mandrel from Tillex

Essential characteristics

For information about essential properties and performance of Tillex' products, please refer to their website: <https://tillex.dk/> and their brochure that can be downloaded online, which among other things describes the use and properties of the products.

Lifespan (RSL)

A reference service life (RSL) has not been defined for the product, as the use phase (B1-B7) has not been declared.

LCA background

Declared unit

LCI and LCIA results in this EPD relate to 1 kg with an indication of average density and a conversion factor to kg in Table 1.

Functional unit

Not defined

PCR

This environmental product declaration is based on the requirements of EN 15804:2012+A2:2019 .

Energy modeling

Foreground system:

Tillex does not use green electricity in their production and therefore a Danish residual mix has been chosen in module A3. In addition, Tillex also uses natural gas to heat their premises.

Information about energy mix in the foreground system:

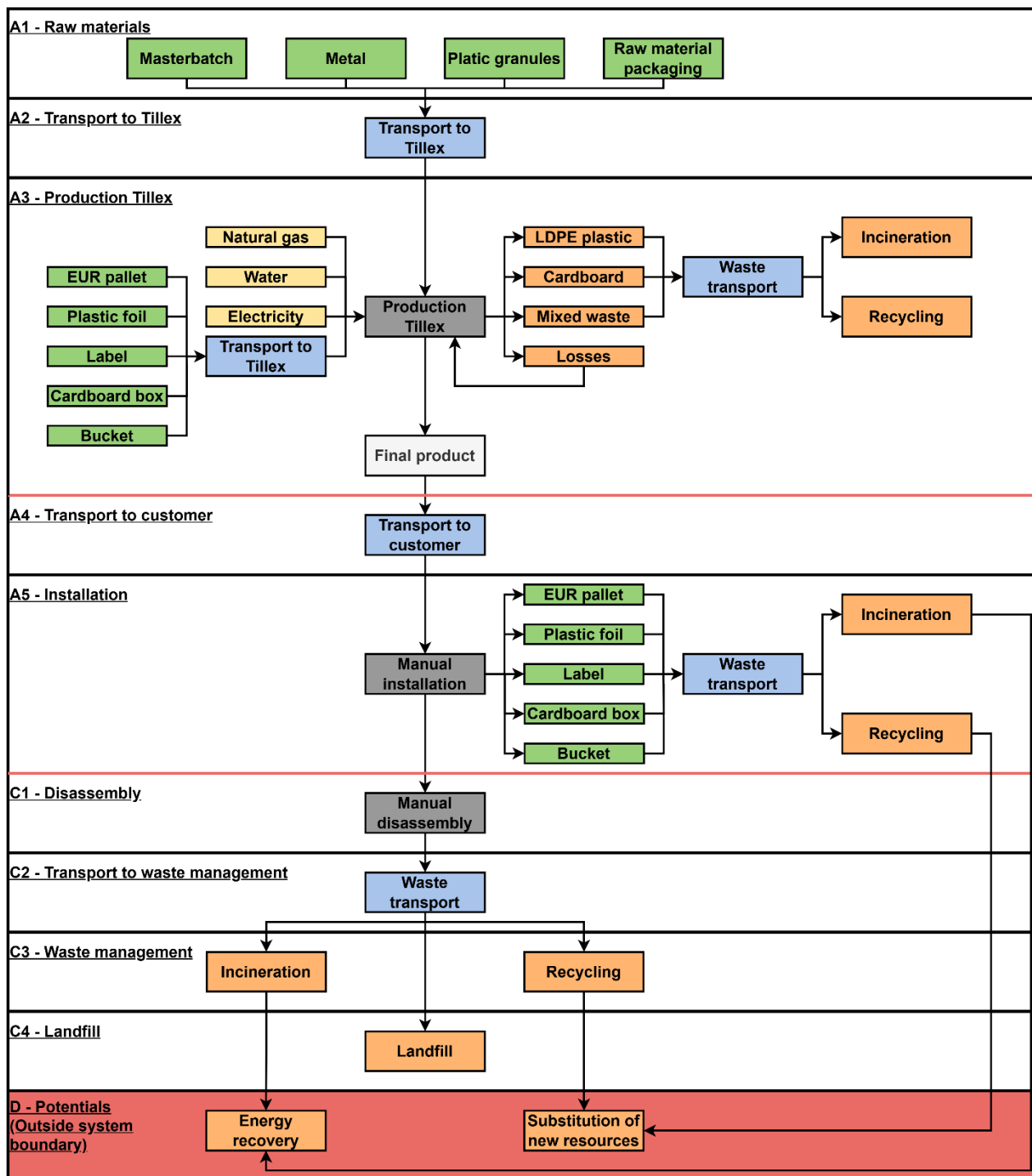
Background dataset	Emission (fossil)
Electricity, medium voltage {DK} electricity, medium voltage, residual mix Cut-off, U	0.18 kg CO ₂ e / MJ
Heat, central or small-scale, nature gas {Europe without Switzerland} market for heat, central or small-scale, nature gas Cut-off, U	0.08 kg CO ₂ e / MJ

Background system:

Upstream processes are modeled with the average European electricity mix.

Downstream processes are also modeled with the average European electricity mix from the ecoinvent v. 3.10 database.

Flowchart



System limit

The EPD is based on a cradle-to-grave LCA, where all relevant and crucial processes are included.

The general rules for omitting inputs and outputs in the LCA follow the provisions of EN 15804:2012+A2:2019, 6.3.6, where the total omission of input flow per module may not exceed 5% of energy consumption and mass and max 1% per unit process.

A1 – Raw materials

Tillex purchases raw materials from external manufacturers who are responsible for the production of materials such as masterbatch (MB), various metals, plastic granules and packaging for the raw materials. The masterbatch consists primarily of virgin polyethylene, which provides a robust plastic base. Pigments are added to give the desired color. In addition, fillers, such as calcium carbonate, and UV stabilizers are added in white, black and grey masterbatches to protect against sunlight.

The metals used by Tillex include galvanized steel and zinc. The plastic granules, which are also part of the raw materials, include various types such as HDPE (high density polyethylene), nylon and PP (polypropylene). Cardboard boxes and LDPE plastic are used for packaging the raw materials to ensure safe transportation and storage.

A2 – Transport to Tillex

Module A2 covers the transport of purchased raw materials from producers within the EU to Tillex. All transport is assumed to be by trucks (>32 tons, EURO4).

A3 – Production at Tillex

At Tillex, the actual production takes place. The purchased plastic granules are injection molded into products such as cable clips and plugs. The injection molding machines use electricity to shape the plastic. Once the plastic is molded, it cools down without any additional energy consumption. Some products require extra steps, such as cable clips, where nails and screws are installed on an assembly machine.

After the production process, the products are packed in cardboard boxes, labeled, shrink-wrapped and palletized. For some products, large buckets are used that can hold many pieces at a time.

Some products are purchased ready-made (Clamps, fixing band, screws and mandrels) and go directly to the

packaging stage without going through production at Tillex. Tillex uses natural gas for heating premises and water for, for example, sinks and toilets.

The waste consists primarily of LDPE plastic, cardboard boxes and residual waste. Cardboard and plastic are sent for recycling, while residual waste is incinerated. Waste fractions such as biowaste, metal and paper are excluded due to cut-off rules, which means that their environmental impact is not included in the assessment.

At Tillex, electricity consumption is measured separately for each machine, so that energy consumption can be linked directly to the respective products. Natural gas and water are allocated according to total volume in 2023, and weight (kg) is used as the allocation parameter, as resource consumption and waste volume follow the total production volumes. Since Tillex's plastic products are not interdependent, there is no co-production, and the economic 25% rule does not apply.

A4 – Transport to customer

After production, the finished products are transported to Tillex's customers, who are mainly in Europe. The transport is done by trucks, and the average distance to the customers is set at 100 km. This is a standard distance in the EPD (Environmental Product Declaration), but the user of the EPD can adjust the results in A4 if they have a more precise transport distance.

A5 – Installation

Module A5 includes installation of the products. All Tillex products can be installed manually without the need for additional resources or energy. The packaging in which the products are delivered is disposed of and the waste is sorted and then either recycled or incinerated. Module A5 includes the environmental impact of the disposal of the packaging, while any avoided energy production from waste incineration and avoided production of new materials through recycling are calculated separately in Module D.

C1 – Disassembly

When the building has reached its end of life, the products must be dismantled. Cable clips can typically be removed manually and taken for disposal in module C3, while plugs that are stuck in the wall remain in the wall and are included in module C4.

C2 – Transport for disposal

After dismantling, the products are transported for disposal. Metals such as steel and zinc are sent for recycling, where they are remelted and given a new life as materials. Plastic which is not fixed in the wall is incinerated in module C3. Plugs that are incorporated into the walls and cannot be removed are landfilled in module C4. The transport distance for disposal is set at 100 km in the EPD, but the results in C2 can be adjusted by the user as needed if the exact distance is known.

C3 – Waste management

In module C3, the waste is handled. Products consisting of both plastic and metal are treated so that the metal is recycled, and the plastic is incinerated. This incineration contributes to the production of electricity and heat, which is calculated in module D. For pure plastic products, all the plastic is incinerated. Recycling of metal substitutes cast steel and cast zinc in module D.

Materials in module C3: masterbatch (incinerated), nylon (incinerated), polypropylene (incinerated), galvanized steel (recycled) and zinc (recycled).

C4 – Landfill

In module C4 it is assumed that all plugs are landfilled, as they are stuck in the wall and cannot be removed. Since only [10% of concrete is landfilled in Denmark](#), while the remaining 90% is crushed and reused in other construction projects, it is assumed that only 10% of the material in plugs actually ends up as landfilled waste. The remaining 90% is part of a new life cycle, where the crushed concrete is used for e.g. roads or buildings, and thus these materials are considered part of the fill material. This means that no avoided emissions from module C4 are included.

Materials in module C4: masterbatch (landfill), galvanized steel (landfill), HDPE (landfill) and nylon (landfill).

D – Potentials

The last module, D, should be seen as a separate life cycle phase that summarizes avoided emissions from recycling and incineration of waste in modules A5 and C3. This phase includes the potential environmental benefits of utilizing energy from waste incineration and avoiding the production of new materials through recycling.

LCA results

Results for group 1 according to EN15804:2012+A2:2019	16
Results for group 2 according to EN15804:2012+A2:2019	18
Results for group 3 according to EN15804:2012+A2:2019	20
Results for group 4 according to EN15804:2012+A2:2019	22
Results for group 5 according to EN15804:2012+A2:2019	24
Results for group 6 according to EN15804:2012+A2:2019	26
Results for group 7 according to EN15804:2012+A2:2019	28
Results for group 8 according to EN15804:2012+A2:2019	30
Results for group 9 according to EN15804:2012+A2:2019	32
Results for group 10 according to EN15804:2012+A2:2019	34
Results for group 11 according to EN15804:2012+A2:2019	36
Results for group 12 according to EN15804:2012+A2:2019	38
Results for group 13 according to EN15804:2012+A2:2019	40
Results for group 14 according to EN15804:2012+A2:2019	42
Results for group 15 according to EN15804:2012+A2:2019	44
Results for group 16 according to EN15804:2012+A2:2019	46
Results for group 17 according to EN15804:2012+A2:2019	48
Results for group 18 according to EN15804:2012+A2:2019	50
Results for group 19 according to EN15804:2012+A2:2019	52
Results for group 20 according to EN15804:2012+A2:2019	54
Results for group 21 according to EN15804:2012+A2:2019	56
Results for group 22 according to EN15804:2012+A2:2019	58
Results for group 23 according to EN15804:2012+A2:2019	60
Results for group 24 according to EN15804:2012+A2:2019	62
Results for group 25 according to EN15804:2012+A2:2019	64
Results for group 26 according to EN15804:2012+A2:2019	66
Results for group 27 according to EN15804:2012+A2:2019	68
Results for group 28 according to EN15804:2012+A2:2019	70
Results for group 29 according to EN15804:2012+A2:2019	72
Results for group 30 according to EN15804:2012+A2:2019	74
Results for group 31 according to EN15804:2012+A2:2019	76
Results for group 32 according to EN15804:2012+A2:2019	78
Results for group 33 according to EN15804:2012+A2:2019	80
Results for group 34 according to EN15804:2012+A2:2019	82
Results for group 35 according to EN15804:2012+A2:2019	84
Results for group 36 according to EN15804:2012+A2:2019	86
Results for group 37 according to EN15804:2012+A2:2019	88
Results for group 38 according to EN15804:2012+A2:2019	90
Results for group 39 according to EN15804:2012+A2:2019	92
Results for group 40 according to EN15804:2012+A2:2019	94
Results for group 41 according to EN15804:2012+A2:2019	96

RESULTS FOR GROUP 1 ACCORDING TO EN15804:2012+A2:2019

Tabel 5 – Potential environmental impacts, EN15804:2012+A2:2019 (LCIA)

ENVIRONMENTAL IMPACTS PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
GWP-total	[kg CO ₂ eq.]	3.77E+00	7.38E-02	2.25E+00	1.07E-02	2.57E-01	0.00E+00	1.07E-02	9.04E-01	0.00E+00	-1.87E+00
GWP-fossil	[kg CO ₂ eq.]	3.94E+00	7.38E-02	2.19E+00	1.07E-02	2.70E-02	0.00E+00	1.07E-02	9.03E-01	0.00E+00	-1.87E+00
GWP-biogenic	[kg CO ₂ eq.]	-1.77E-01	0.00E+00	5.48E-02	0.00E+00	2.30E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GWP-luluc	[kg CO ₂ eq.]	3.76E-03	2.54E-05	9.51E-04	3.67E-06	1.59E-05	0.00E+00	3.67E-06	6.13E-04	0.00E+00	-9.20E-04
ODP	[kg CFC 11 eq.]	6.96E-08	1.49E-09	3.41E-08	2.16E-10	3.46E-10	0.00E+00	2.16E-10	5.29E-09	0.00E+00	-1.12E-08
AP	[mol H ⁺ eq.]	3.30E-02	2.94E-04	6.71E-03	4.25E-05	1.49E-04	0.00E+00	4.25E-05	2.02E-03	0.00E+00	-7.64E-03
EP-freshwater	[kg P eq.]	1.66E-03	5.05E-06	7.98E-04	7.29E-07	5.54E-06	0.00E+00	7.29E-07	2.36E-04	0.00E+00	-8.49E-04
EP-marine	[kg N eq.]	4.11E-03	1.10E-04	1.46E-03	1.59E-05	5.68E-05	0.00E+00	1.59E-05	4.56E-04	0.00E+00	-1.71E-03
EP-terrestrial	[mol N eq.]	1.13E-01	1.20E-03	1.45E-02	1.73E-04	5.97E-04	0.00E+00	1.73E-04	4.72E-03	0.00E+00	-1.87E-02
POCP	[kg NMVOC eq.]	1.36E-02	4.64E-04	4.55E-03	6.70E-05	1.74E-04	0.00E+00	6.70E-05	1.49E-03	0.00E+00	-6.16E-03
ADPm ¹	[kg Sb eq.]	8.19E-05	2.00E-07	4.18E-06	2.89E-08	1.03E-07	0.00E+00	2.89E-08	2.53E-06	0.00E+00	-1.51E-05
ADPf ¹	[MJ]	5.79E+01	1.08E+00	3.03E+01	1.55E-01	2.63E-01	0.00E+00	1.55E-01	6.33E+00	0.00E+00	-1.96E+01
WDP ¹	[m ³ world eq. deprived]	1.03E+00	5.13E-03	2.94E-01	7.40E-04	2.37E-03	0.00E+00	7.40E-04	2.34E-01	0.00E+00	-3.58E-01
Abbreviation	GWP-total = Global warming, total; GWP-fossil = Global warming, fossil fuels; GWP-biogenic = Global warming, biogenic; GWP-luluc = Global warming, land use and land conversion; ODP = Ozone depletion; AP = Acidification; EP-freshwater = Eutrophication (nutrient loading) – freshwater; EP-marine = Eutrophication (nutrient loading) – marine; EP-terrestrial = Eutrophication (nutrient loading) – terrestrial; POCP = Photochemical ozone creation; ADPm = Depletion of abiotic resources – minerals and metals; ADPf = Depletion of abiotic fossil resources; WDP = Water consumption										
Remark	¹ The results for this environmental indicator should be used with caution, as the uncertainty surrounding the results is high or because there is limited experience with the indicator.										

Tabel 6 – Potential environmental impacts, EN15804:2012+A2:2019 (LCIA)

ENVIRONMENTAL IMPACTS PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
PM	[Disease incidence]	3.94E-07	7.51E-09	4.18E-08	1.08E-09	2.48E-09	0.00E+00	1.08E-09	4.65E-08	0.00E+00	-1.40E-07
IRP ²	[kBq U235 eq.]	3.77E-01	1.31E-03	2.70E-01	1.89E-04	2.45E-03	0.00E+00	1.89E-04	1.14E-01	0.00E+00	-7.50E-02
ETP-fw ¹	[CTUe]	1.48E+02	2.55E-01	5.09E+00	3.68E-02	2.09E-01	0.00E+00	3.68E-02	2.75E+00	0.00E+00	-1.10E+02
HTP-c ¹	[CTUh]	4.57E-07	4.59E-10	3.01E-09	6.63E-11	1.10E-10	0.00E+00	6.63E-11	5.44E-09	0.00E+00	-4.09E-07
HTP-nc ¹	[CTUh]	5.04E-08	6.94E-10	1.52E-08	1.00E-10	3.00E-10	0.00E+00	1.00E-10	7.87E-09	0.00E+00	-1.76E-08
SQP ¹	-	2.12E+01	1.08E+00	1.34E+01	1.56E-01	1.75E-01	0.00E+00	1.56E-01	2.22E+00	0.00E+00	-2.19E+01
Abbreviation	PM = Particulate matter; IRP = Ionizing radiation - human health; ETP-fw = Ecotoxicity - freshwater; HTP-c = Human toxicity - cancer effects; HTP-nc = Human toxicity - non-cancer effects; SQP = Soil quality (Dimensionless) consumption										
Remark	¹ The results for this environmental indicator should be used with caution, as the uncertainty surrounding the results is high or because there is limited experience with the indicator. ² This impact category primarily addresses the potential impact of low dose ionizing radiation on human health associated with nuclear fuel cycles. It does not take into account effects from possible nuclear accidents, occupational exposure or disposal of radioactive waste in underground facilities. Potential ionizing radiation from the soil, from radon and from certain building materials is also not measured by this indicator.										

Tabel 7 – Resource consumption, EN15804:2012+A2:2019 (LCI)

RESOURCE CONSUMPTION PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
PERE	[MJ]	4.63E+00	1.66E-02	2.67E+00	2.39E-03	1.02E-03	0.00E+00	2.39E-03	1.04E+00	0.00E+00	-5.08E+00
PERM	[MJ]	1.46E+00	0.00E+00	5.28E-01	0.00E+00	-1.90E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	[MJ]	6.09E+00	1.66E-02	3.20E+00	2.39E-03	-1.90E+00	0.00E+00	2.39E-03	1.04E+00	0.00E+00	-5.08E+00
PENRE	[MJ]	5.11E+01	1.08E+00	3.01E+01	1.55E-01	2.63E-01	0.00E+00	1.55E-01	6.33E+00	0.00E+00	-1.96E+01
PENRM	[MJ]	6.75E+00	0.00E+00	-2.37E-01	0.00E+00	-1.24E-01	0.00E+00	0.00E+00	-5.76E+00	0.00E+00	0.00E+00
PENRT	[MJ]	5.79E+01	1.08E+00	2.99E+01	1.55E-01	1.39E-01	0.00E+00	1.55E-01	5.66E-01	0.00E+00	-1.96E+01
SM	[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	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	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	0.00E+00	0.00E+00
FW	[m ³]	3.15E-02	1.61E-04	4.31E-02	2.33E-05	1.50E-04	0.00E+00	2.33E-05	7.89E-03	0.00E+00	-1.29E-02
Abbreviation	PERE = Consumption of renewable primary energy; PERM = Consumption of renewable primary energy resources used as raw materials; PERT = Total consumption of renewable primary energy resources; PENRE = Consumption of non-renewable primary energy; PENRM = Consumption of non-renewable primary energy resources used as raw materials; PENRT = Total consumption of non-renewable primary energy resources; SM = Consumption of secondary material; RSF = Consumption of renewable secondary fuel; NRSF = Consumption of non-renewable secondary fuel; FW = Net freshwater consumption										

Tabel 8 – End of life, EN15804:2012+A2:2019 (LCI)

WASTE CATEGORIES AND OUTPUT FLOWS PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
HWD	[kg]	8.92E-04	7.07E-06	7.09E-05	1.02E-06	2.42E-06	0.00E+00	1.02E-06	1.64E-05	0.00E+00	-1.62E-04
NHWD	[kg]	3.19E-01	9.21E-02	8.42E-02	1.33E-02	1.13E-02	0.00E+00	1.33E-02	5.43E-02	0.00E+00	-9.96E-02
RWD	[kg]	9.79E-05	3.23E-07	6.67E-05	4.67E-08	6.29E-07	0.00E+00	4.67E-08	2.91E-05	0.00E+00	-1.87E-05
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	0.00E+00	0.00E+00
MFR	[kg]	0.00E+00	0.00E+00	5.09E-02	0.00E+00	1.06E-01	0.00E+00	0.00E+00	8.23E-01	0.00E+00	0.00E+00
MER	[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	0.00E+00	0.00E+00
EEE	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.03E-02	0.00E+00	0.00E+00	7.27E-01	0.00E+00	0.00E+00
EET	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.60E-01	0.00E+00	0.00E+00	1.41E+00	0.00E+00	0.00E+00
Abbreviation	HWD = Hazardous Waste Disposed; NHWD = Non-Hazardous Waste Disposed; RWD = Radioactive Waste Disposed; CRU = Components for Recycling; MFR = Material for Recycling; MER = Material for Energy Recovery; EEE = Exported Electrical Energy; EET = Exported Thermal Energy										

Tabel 9 - Biogenic carbon at the factory gate

BIOGENIC CARBON PER KG		
Parameter	Unit	At the factory gate
Biogenic carbon content in the product	[kg C]	0.00E+00
Biogenic carbon content in the accompanying packaging	[kg C]	5.27E-02
Note	1 kg of biogenic carbon is equivalent to 44/12 kg of CO ₂	

RESULTS FOR GROUP 2 ACCORDING TO EN15804:2012+A2:2019

Tabel 10 – Potential environmental impacts, EN15804:2012+A2:2019 (LCIA)

ENVIRONMENTAL IMPACTS PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
GWP-total	[kg CO ₂ eq.]	3.70E+00	7.13E-02	2.25E+00	1.07E-02	2.46E-01	0.00E+00	1.07E-02	9.82E-01	0.00E+00	-1.80E+00
GWP-fossil	[kg CO ₂ eq.]	3.88E+00	7.13E-02	2.19E+00	1.07E-02	2.59E-02	0.00E+00	1.07E-02	9.81E-01	0.00E+00	-1.79E+00
GWP-biogenic	[kg CO ₂ eq.]	-1.77E-01	0.00E+00	5.99E-02	0.00E+00	2.20E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GWP-luluc	[kg CO ₂ eq.]	3.70E-03	2.46E-05	9.21E-04	3.67E-06	1.52E-05	0.00E+00	3.67E-06	5.85E-04	0.00E+00	-9.19E-04
ODP	[kg CFC 11 eq.]	7.20E-08	1.44E-09	3.39E-08	2.16E-10	3.31E-10	0.00E+00	2.16E-10	5.07E-09	0.00E+00	-1.10E-08
AP	[mol H ⁺ eq.]	3.19E-02	2.84E-04	6.68E-03	4.25E-05	1.43E-04	0.00E+00	4.25E-05	1.94E-03	0.00E+00	-7.36E-03
EP-freshwater	[kg P eq.]	1.61E-03	4.88E-06	7.96E-04	7.29E-07	5.31E-06	0.00E+00	7.29E-07	2.25E-04	0.00E+00	-8.15E-04
EP-marine	[kg N eq.]	4.00E-03	1.06E-04	1.45E-03	1.59E-05	5.45E-05	0.00E+00	1.59E-05	4.43E-04	0.00E+00	-1.65E-03
EP-terrestrial	[mol N eq.]	1.08E-01	1.16E-03	1.44E-02	1.73E-04	5.72E-04	0.00E+00	1.73E-04	4.58E-03	0.00E+00	-1.80E-02
POCP	[kg NMVOC eq.]	1.36E-02	4.48E-04	4.52E-03	6.70E-05	1.67E-04	0.00E+00	6.70E-05	1.44E-03	0.00E+00	-5.93E-03
ADPm ¹	[kg Sb eq.]	7.92E-05	1.94E-07	4.15E-06	2.89E-08	9.87E-08	0.00E+00	2.89E-08	2.41E-06	0.00E+00	-1.45E-05
ADPf ¹	[MJ]	5.89E+01	1.04E+00	3.02E+01	1.55E-01	2.52E-01	0.00E+00	1.55E-01	6.05E+00	0.00E+00	-1.88E+01
WDP ¹	[m ³ world eq. deprived]	1.04E+00	4.95E-03	2.91E-01	7.40E-04	2.27E-03	0.00E+00	7.40E-04	2.24E-01	0.00E+00	-3.43E-01
Abbreviation	GWP-total = Global warming, total; GWP-fossil = Global warming, fossil fuels; GWP-biogenic = Global warming, biogenic; GWP-luluc = Global warming, land use and land conversion; ODP = Ozone depletion; AP = Acidification; EP-freshwater = Eutrophication (nutrient loading) – freshwater; EP-marine = Eutrophication (nutrient loading) – marine; EP-terrestrial = Eutrophication (nutrient loading) – terrestrial; POCP = Photochemical ozone creation; ADPm = Depletion of abiotic resources – minerals and metals; ADPf = Depletion of abiotic fossil resources; WDP = Water consumption										
Remark	¹ The results for this environmental indicator should be used with caution, as the uncertainty surrounding the results is high or because there is limited experience with the indicator.										

Tabel 11 – Potential environmental impacts, EN15804:2012+A2:2019 (LCIA)

ENVIRONMENTAL IMPACTS PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
PM	[Disease incidence]	3.79E-07	7.25E-09	4.10E-08	1.08E-09	2.38E-09	0.00E+00	1.08E-09	4.44E-08	0.00E+00	-1.34E-07
IRP ²	[kBq U235 eq.]	3.68E-01	1.26E-03	2.68E-01	1.89E-04	2.35E-03	0.00E+00	1.89E-04	1.08E-01	0.00E+00	-7.46E-02
ETP-fw ¹	[CTUe]	1.41E+02	2.46E-01	5.05E+00	3.68E-02	2.01E-01	0.00E+00	3.68E-02	2.65E+00	0.00E+00	-1.05E+02
HTP-c ¹	[CTUh]	4.37E-07	4.43E-10	2.99E-09	6.63E-11	1.05E-10	0.00E+00	6.63E-11	5.21E-09	0.00E+00	-3.91E-07
HTP-nc ¹	[CTUh]	4.91E-08	6.70E-10	1.51E-08	1.00E-10	2.87E-10	0.00E+00	1.00E-10	7.62E-09	0.00E+00	-1.70E-08
SQP ¹	-	2.08E+01	1.05E+00	1.29E+01	1.56E-01	1.68E-01	0.00E+00	1.56E-01	2.12E+00	0.00E+00	-2.17E+01
Abbreviation	PM = Particulate matter; IRP = Ionizing radiation - human health; ETP-fw = Ecotoxicity - freshwater; HTP-c = Human toxicity - cancer effects; HTP-nc = Human toxicity - non-cancer effects; SQP = Soil quality (Dimensionless)r consumption										
Remark	¹ The results for this environmental indicator should be used with caution, as the uncertainty surrounding the results is high or because there is limited experience with the indicator. ² This impact category primarily addresses the potential impact of low dose ionizing radiation on human health associated with nuclear fuel cycles. It does not take into account effects from possible nuclear accidents, occupational exposure or disposal of radioactive waste in underground facilities. Potential ionizing radiation from the soil, from radon and from certain building materials is also not measured by this indicator.										

Tabel 12 – Resource consumption, EN15804:2012+A2:2019 (LCI)

RESOURCE CONSUMPTION PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
PERE	[MJ]	4.48E+00	1.60E-02	2.63E+00	2.39E-03	9.70E-04	0.00E+00	2.39E-03	9.96E-01	0.00E+00	-5.14E+00
PERM	[MJ]	1.46E+00	0.00E+00	4.83E-01	0.00E+00	-1.82E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	[MJ]	5.94E+00	1.60E-02	3.12E+00	2.39E-03	-1.82E+00	0.00E+00	2.39E-03	9.96E-01	0.00E+00	-5.14E+00
PENRE	[MJ]	5.09E+01	1.04E+00	3.00E+01	1.55E-01	2.52E-01	0.00E+00	1.55E-01	6.05E+00	0.00E+00	-1.88E+01
PENRM	[MJ]	7.97E+00	0.00E+00	-2.43E-01	0.00E+00	-1.18E-01	0.00E+00	0.00E+00	-6.98E+00	0.00E+00	0.00E+00
PENRT	[MJ]	5.89E+01	1.04E+00	2.98E+01	1.55E-01	1.34E-01	0.00E+00	1.55E-01	-9.28E-01	0.00E+00	-1.88E+01
SM	[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	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	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	0.00E+00	0.00E+00
FW	[m ³]	3.09E-02	1.56E-04	4.30E-02	2.33E-05	1.44E-04	0.00E+00	2.33E-05	7.56E-03	0.00E+00	-1.29E-02
Abbreviation	PERE = Consumption of renewable primary energy; PERM = Consumption of renewable primary energy resources used as raw materials; PERT = Total consumption of renewable primary energy resources; PENRE = Consumption of non-renewable primary energy; PENRM = Consumption of non-renewable primary energy resources used as raw materials; PENRT = Total consumption of non-renewable primary energy resources; SM = Consumption of secondary material; RSF = Consumption of renewable secondary fuel; NRSF = Consumption of non-renewable secondary fuel; FW = Net freshwater consumption										

Tabel 13 – End of life, EN15804:2012+A2:2019 (LCI)

WASTE CATEGORIES AND OUTPUT FLOWS PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
HWD	[kg]	9.21E-04	6.82E-06	7.02E-05	1.02E-06	2.32E-06	0.00E+00	1.02E-06	1.58E-05	0.00E+00	-1.55E-04
NHWD	[kg]	3.12E-01	8.89E-02	8.36E-02	1.33E-02	1.08E-02	0.00E+00	1.33E-02	5.34E-02	0.00E+00	-9.62E-02
RWD	[kg]	9.57E-05	3.12E-07	6.63E-05	4.67E-08	6.03E-07	0.00E+00	4.67E-08	2.78E-05	0.00E+00	-1.85E-05
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	0.00E+00	0.00E+00
MFR	[kg]	0.00E+00	0.00E+00	5.09E-02	0.00E+00	1.02E-01	0.00E+00	0.00E+00	7.86E-01	0.00E+00	0.00E+00
MER	[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	0.00E+00	0.00E+00
EEE	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.69E-02	0.00E+00	0.00E+00	8.81E-01	0.00E+00	0.00E+00
EET	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.54E-01	0.00E+00	0.00E+00	1.71E+00	0.00E+00	0.00E+00
Abbreviation	HWD = Hazardous Waste Disposed; NHWD = Non-Hazardous Waste Disposed; RWD = Radioactive Waste Disposed; CRU = Components for Recycling; MFR = Material for Recycling; MER = Material for Energy Recovery; EEE = Exported Electrical Energy; EET = Exported Thermal Energy										

Tabel 14 - Biogenic carbon at the factory gate

BIOGENIC CARBON PER KG		
Parameter	Unit	At the factory gate
Biogenic carbon content in the product	[kg C]	0.00E+00
Biogenic carbon content in the accompanying packaging	[kg C]	5.06E-02
Note	1 kg of biogenic carbon is equivalent to 44/12 kg of CO ₂	

RESULTS FOR GROUP 3 ACCORDING TO EN15804:2012+A2:2019

Tabel 15 – Potential environmental impacts, EN15804:2012+A2:2019 (LCIA)

ENVIRONMENTAL IMPACTS PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
GWP-total	[kg CO ₂ eq.]	3.63E+00	6.90E-02	2.26E+00	1.07E-02	3.09E-01	0.00E+00	1.07E-02	1.08E+00	0.00E+00	-1.71E+00
GWP-fossil	[kg CO ₂ eq.]	3.80E+00	6.90E-02	2.22E+00	1.07E-02	3.29E-02	0.00E+00	1.07E-02	1.07E+00	0.00E+00	-1.71E+00
GWP-biogenic	[kg CO ₂ eq.]	-1.77E-01	0.00E+00	3.61E-02	0.00E+00	2.77E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GWP-luluc	[kg CO ₂ eq.]	3.62E-03	2.38E-05	1.06E-03	3.67E-06	1.84E-05	0.00E+00	3.67E-06	5.52E-04	0.00E+00	-9.47E-04
ODP	[kg CFC 11 eq.]	7.49E-08	1.40E-09	3.47E-08	2.16E-10	4.00E-10	0.00E+00	2.16E-10	4.80E-09	0.00E+00	-1.09E-08
AP	[mol H ⁺ eq.]	3.06E-02	2.75E-04	6.85E-03	4.25E-05	1.72E-04	0.00E+00	4.25E-05	1.85E-03	0.00E+00	-7.06E-03
EP-freshwater	[kg P eq.]	1.55E-03	4.72E-06	8.10E-04	7.29E-07	6.41E-06	0.00E+00	7.29E-07	2.12E-04	0.00E+00	-7.78E-04
EP-marine	[kg N eq.]	3.87E-03	1.03E-04	1.49E-03	1.59E-05	6.56E-05	0.00E+00	1.59E-05	4.27E-04	0.00E+00	-1.59E-03
EP-terrestrial	[mol N eq.]	1.03E-01	1.12E-03	1.48E-02	1.73E-04	6.88E-04	0.00E+00	1.73E-04	4.41E-03	0.00E+00	-1.74E-02
POCP	[kg NMVOC eq.]	1.36E-02	4.34E-04	4.65E-03	6.70E-05	2.01E-04	0.00E+00	6.70E-05	1.38E-03	0.00E+00	-5.70E-03
ADPm ¹	[kg Sb eq.]	7.59E-05	1.87E-07	4.29E-06	2.89E-08	1.19E-07	0.00E+00	2.89E-08	2.28E-06	0.00E+00	-1.38E-05
ADPf ¹	[MJ]	6.00E+01	1.01E+00	3.08E+01	1.55E-01	3.05E-01	0.00E+00	1.55E-01	5.72E+00	0.00E+00	-1.80E+01
WDP ¹	[m ³ world eq. deprived]	1.04E+00	4.79E-03	3.05E-01	7.40E-04	2.74E-03	0.00E+00	7.40E-04	2.11E-01	0.00E+00	-3.27E-01
Abbreviation	GWP-total = Global warming, total; GWP-fossil = Global warming, fossil fuels; GWP-biogenic = Global warming, biogenic; GWP-luluc = Global warming, land use and land conversion; ODP = Ozone depletion; AP = Acidification; EP-freshwater = Eutrophication (nutrient loading) – freshwater; EP-marine = Eutrophication (nutrient loading) – marine; EP-terrestrial = Eutrophication (nutrient loading) – terrestrial; POCP = Photochemical ozone creation; ADPm = Depletion of abiotic resources – minerals and metals; ADPf = Depletion of abiotic fossil resources; WDP = Water consumption										
Remark	¹ The results for this environmental indicator should be used with caution, as the uncertainty surrounding the results is high or because there is limited experience with the indicator.										

Tabel 16 – Potential environmental impacts, EN15804:2012+A2:2019 (LCIA)

ENVIRONMENTAL IMPACTS PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
PM	[Disease incidence]	3.61E-07	7.02E-09	4.47E-08	1.08E-09	2.86E-09	0.00E+00	1.08E-09	4.20E-08	0.00E+00	-1.28E-07
IRP ²	[kBq U235 eq.]	3.58E-01	1.22E-03	2.76E-01	1.89E-04	2.85E-03	0.00E+00	1.89E-04	1.02E-01	0.00E+00	-7.51E-02
ETP-fw ¹	[CTUe]	1.34E+02	2.38E-01	5.22E+00	3.68E-02	2.41E-01	0.00E+00	3.68E-02	2.53E+00	0.00E+00	-9.91E+01
HTP-c ¹	[CTUh]	4.12E-07	4.29E-10	3.09E-09	6.63E-11	1.28E-10	0.00E+00	6.63E-11	4.93E-09	0.00E+00	-3.68E-07
HTP-nc ¹	[CTUh]	4.75E-08	6.49E-10	1.55E-08	1.00E-10	3.51E-10	0.00E+00	1.00E-10	7.33E-09	0.00E+00	-1.64E-08
SQP ¹	-	2.02E+01	1.01E+00	1.49E+01	1.56E-01	2.03E-01	0.00E+00	1.56E-01	2.00E+00	0.00E+00	-2.48E+01
Abbreviation	PM = Particulate matter; IRP = Ionizing radiation - human health; ETP-fw = Ecotoxicity - freshwater; HTP-c = Human toxicity - cancer effects; HTP-nc = Human toxicity - non-cancer effects; SQP = Soil quality (Dimensionless)r consumption										
Remark	¹ The results for this environmental indicator should be used with caution, as the uncertainty surrounding the results is high or because there is limited experience with the indicator. ² This impact category primarily addresses the potential impact of low dose ionizing radiation on human health associated with nuclear fuel cycles. It does not take into account effects from possible nuclear accidents, occupational exposure or disposal of radioactive waste in underground facilities. Potential ionizing radiation from the soil, from radon and from certain building materials is also not measured by this indicator.										

Tabel 17 – Resource consumption, EN15804:2012+A2:2019 (LCI)

RESOURCE CONSUMPTION PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
PERE	[MJ]	4.29E+00	1.55E-02	2.81E+00	2.39E-03	1.37E-03	0.00E+00	2.39E-03	9.39E-01	0.00E+00	-5.78E+00
PERM	[MJ]	1.46E+00	0.00E+00	6.97E-01	0.00E+00	-2.27E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	[MJ]	5.76E+00	1.55E-02	3.51E+00	2.39E-03	-2.26E+00	0.00E+00	2.39E-03	9.39E-01	0.00E+00	-5.78E+00
PENRE	[MJ]	5.06E+01	1.01E+00	3.05E+01	1.55E-01	3.05E-01	0.00E+00	1.55E-01	5.72E+00	0.00E+00	-1.80E+01
PENRM	[MJ]	9.45E+00	0.00E+00	-1.90E-01	0.00E+00	-1.70E-01	0.00E+00	0.00E+00	-8.46E+00	0.00E+00	0.00E+00
PENRT	[MJ]	6.00E+01	1.01E+00	3.04E+01	1.55E-01	1.35E-01	0.00E+00	1.55E-01	-2.74E+00	0.00E+00	-1.80E+01
SM	[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	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	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	0.00E+00	0.00E+00
FW	[m ³]	3.00E-02	1.51E-04	4.35E-02	2.33E-05	1.74E-04	0.00E+00	2.33E-05	7.15E-03	0.00E+00	-1.28E-02
Abbreviation	PERE = Consumption of renewable primary energy; PERM = Consumption of renewable primary energy resources used as raw materials; PERT = Total consumption of renewable primary energy resources; PENRE = Consumption of non-renewable primary energy; PENRM = Consumption of non-renewable primary energy resources used as raw materials; PENRT = Total consumption of non-renewable primary energy resources; SM = Consumption of secondary material; RSF = Consumption of renewable secondary fuel; NRSF = Consumption of non-renewable secondary fuel; FW = Net freshwater consumption										

Tabel 18 – End of life, EN15804:2012+A2:2019 (LCI)

WASTE CATEGORIES AND OUTPUT FLOWS PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
HWD	[kg]	9.57E-04	6.60E-06	7.47E-05	1.02E-06	2.79E-06	0.00E+00	1.02E-06	1.51E-05	0.00E+00	-1.48E-04
NHWD	[kg]	3.02E-01	8.60E-02	8.66E-02	1.33E-02	1.32E-02	0.00E+00	1.33E-02	5.22E-02	0.00E+00	-9.41E-02
RWD	[kg]	9.31E-05	3.02E-07	6.82E-05	4.67E-08	7.30E-07	0.00E+00	4.67E-08	2.62E-05	0.00E+00	-1.85E-05
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	0.00E+00	0.00E+00
MFR	[kg]	0.00E+00	0.00E+00	5.09E-02	0.00E+00	1.27E-01	0.00E+00	0.00E+00	7.41E-01	0.00E+00	0.00E+00
MER	[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	0.00E+00	0.00E+00
EEE	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.75E-02	0.00E+00	0.00E+00	1.07E+00	0.00E+00	0.00E+00
EET	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.95E-01	0.00E+00	0.00E+00	2.07E+00	0.00E+00	0.00E+00
Abbreviation	HWD = Hazardous Waste Disposed; NHWD = Non-Hazardous Waste Disposed; RWD = Radioactive Waste Disposed; CRU = Components for Recycling; MFR = Material for Recycling; MER = Material for Energy Recovery; EEE = Exported Electrical Energy; EET = Exported Thermal Energy										

Tabel 19 - Biogenic carbon at the factory gate

BIOGENIC CARBON PER KG		
Parameter	Unit	At the factory gate
Biogenic carbon content in the product	[kg C]	0.00E+00
Biogenic carbon content in the accompanying packaging	[kg C]	6.29E-02
Note	1 kg of biogenic carbon is equivalent to 44/12 kg of CO ₂	

RESULTS FOR GROUP 4 ACCORDING TO EN15804:2012+A2:2019

Tabel 20 – Potential environmental impacts, EN15804:2012+A2:2019 (LCIA)

ENVIRONMENTAL IMPACTS PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
GWP-total	[kg CO ₂ eq.]	3.54E+00	6.99E-02	2.38E+00	1.07E-02	8.80E-01	0.00E+00	1.07E-02	1.18E+00	0.00E+00	-1.66E+00
GWP-fossil	[kg CO ₂ eq.]	3.71E+00	6.98E-02	2.65E+00	1.07E-02	1.21E-01	0.00E+00	1.07E-02	1.18E+00	0.00E+00	-1.66E+00
GWP-biogenic	[kg CO ₂ eq.]	-1.77E-01	0.00E+00	-2.68E-01	0.00E+00	7.59E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GWP-luluc	[kg CO ₂ eq.]	3.52E-03	2.41E-05	2.89E-03	3.67E-06	5.78E-05	0.00E+00	3.67E-06	5.14E-04	0.00E+00	-1.21E-03
ODP	[kg CFC 11 eq.]	7.81E-08	1.41E-09	4.48E-08	2.16E-10	1.25E-09	0.00E+00	2.16E-10	4.49E-09	0.00E+00	-1.21E-08
AP	[mol H ⁺ eq.]	2.89E-02	2.79E-04	9.12E-03	4.25E-05	5.42E-04	0.00E+00	4.25E-05	1.74E-03	0.00E+00	-7.06E-03
EP-freshwater	[kg P eq.]	1.47E-03	4.78E-06	9.93E-04	7.29E-07	2.02E-05	0.00E+00	7.29E-07	1.98E-04	0.00E+00	-7.54E-04
EP-marine	[kg N eq.]	3.71E-03	1.04E-04	2.00E-03	1.59E-05	2.07E-04	0.00E+00	1.59E-05	4.08E-04	0.00E+00	-1.63E-03
EP-terrestrial	[mol N eq.]	9.70E-02	1.14E-03	1.97E-02	1.73E-04	2.17E-03	0.00E+00	1.73E-04	4.22E-03	0.00E+00	-1.81E-02
POCP	[kg NMVOC eq.]	1.36E-02	4.40E-04	6.32E-03	6.70E-05	6.31E-04	0.00E+00	6.70E-05	1.32E-03	0.00E+00	-5.85E-03
ADPm ¹	[kg Sb eq.]	7.22E-05	1.90E-07	6.02E-06	2.89E-08	3.77E-07	0.00E+00	2.89E-08	2.12E-06	0.00E+00	-1.33E-05
ADPf ¹	[MJ]	6.13E+01	1.02E+00	3.84E+01	1.55E-01	9.51E-01	0.00E+00	1.55E-01	5.33E+00	0.00E+00	-1.80E+01
WDP ¹	[m ³ world eq. deprived]	1.05E+00	4.85E-03	4.89E-01	7.40E-04	8.80E-03	0.00E+00	7.40E-04	1.97E-01	0.00E+00	-3.19E-01
Abbreviation	GWP-total = Global warming, total; GWP-fossil = Global warming, fossil fuels; GWP-biogenic = Global warming, biogenic; GWP-luluc = Global warming, land use and land conversion; ODP = Ozone depletion; AP = Acidification; EP-freshwater = Eutrophication (nutrient loading) – freshwater; EP-marine = Eutrophication (nutrient loading) – marine; EP-terrestrial = Eutrophication (nutrient loading) – terrestrial; POCP = Photochemical ozone creation; ADPm = Depletion of abiotic resources – minerals and metals; ADPf = Depletion of abiotic fossil resources; WDP = Water consumption										
Remark	¹ The results for this environmental indicator should be used with caution, as the uncertainty surrounding the results is high or because there is limited experience with the indicator.										

Tabel 21 – Potential environmental impacts, EN15804:2012+A2:2019 (LCIA)

ENVIRONMENTAL IMPACTS PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
PM	[Disease incidence]	3.40E-07	7.10E-09	9.32E-08	1.08E-09	8.93E-09	0.00E+00	1.08E-09	3.92E-08	0.00E+00	-1.26E-07
IRP ²	[kBq U235 eq.]	3.44E-01	1.24E-03	3.70E-01	1.89E-04	8.93E-03	0.00E+00	1.89E-04	9.52E-02	0.00E+00	-8.45E-02
ETP-fw ¹	[CTUe]	1.25E+02	2.41E-01	7.45E+00	3.68E-02	7.66E-01	0.00E+00	3.68E-02	2.39E+00	0.00E+00	-9.27E+01
HTP-c ¹	[CTUh]	3.84E-07	4.34E-10	4.37E-09	6.63E-11	4.03E-10	0.00E+00	6.63E-11	4.60E-09	0.00E+00	-3.43E-07
HTP-nc ¹	[CTUh]	4.57E-08	6.57E-10	2.04E-08	1.00E-10	1.13E-09	0.00E+00	1.00E-10	6.98E-09	0.00E+00	-1.62E-08
SQP ¹	-	1.96E+01	1.03E+00	4.05E+01	1.56E-01	6.32E-01	0.00E+00	1.56E-01	1.86E+00	0.00E+00	-5.61E+01
Abbreviation	PM = Particulate matter; IRP = Ionizing radiation - human health; ETP-fw = Ecotoxicity - freshwater; HTP-c = Human toxicity - cancer effects; HTP-nc = Human toxicity - non-cancer effects; SQP = Soil quality (Dimensionless)r consumption										
Remark	¹ The results for this environmental indicator should be used with caution, as the uncertainty surrounding the results is high or because there is limited experience with the indicator. ² This impact category primarily addresses the potential impact of low dose ionizing radiation on human health associated with nuclear fuel cycles. It does not take into account effects from possible nuclear accidents, occupational exposure or disposal of radioactive waste in underground facilities. Potential ionizing radiation from the soil, from radon and from certain building materials is also not measured by this indicator.										

Tabel 22 – Resource consumption, EN15804:2012+A2:2019 (LCI)

RESOURCE CONSUMPTION PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
PERE	[MJ]	4.06E+00	1.57E-02	5.19E+00	2.39E-03	6.55E-03	0.00E+00	2.39E-03	8.74E-01	0.00E+00	-1.09E+01
PERM	[MJ]	1.46E+00	0.00E+00	3.44E+00	0.00E+00	-6.49E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	[MJ]	5.53E+00	1.57E-02	8.63E+00	2.39E-03	-6.48E+00	0.00E+00	2.39E-03	8.74E-01	0.00E+00	-1.09E+01
PENRE	[MJ]	5.02E+01	1.02E+00	3.75E+01	1.55E-01	9.51E-01	0.00E+00	1.55E-01	5.33E+00	0.00E+00	-1.80E+01
PENRM	[MJ]	1.12E+01	0.00E+00	4.96E-01	0.00E+00	-8.56E-01	0.00E+00	0.00E+00	-1.02E+01	0.00E+00	0.00E+00
PENRT	[MJ]	6.14E+01	1.02E+00	3.80E+01	1.55E-01	9.52E-02	0.00E+00	1.55E-01	-4.86E+00	0.00E+00	-1.80E+01
SM	[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	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	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	0.00E+00	0.00E+00
FW	[m ³]	2.88E-02	1.53E-04	5.01E-02	2.33E-05	5.53E-04	0.00E+00	2.33E-05	6.68E-03	0.00E+00	-1.37E-02
Abbreviation	PERE = Consumption of renewable primary energy; PERM = Consumption of renewable primary energy resources used as raw materials; PERT = Total consumption of renewable primary energy resources; PENRE = Consumption of non-renewable primary energy; PENRM = Consumption of non-renewable primary energy resources used as raw materials; PENRT = Total consumption of non-renewable primary energy resources; SM = Consumption of secondary material; RSF = Consumption of renewable secondary fuel; NRSF = Consumption of non-renewable secondary fuel; FW = Net freshwater consumption										

Tabel 23 – End of life, EN15804:2012+A2:2019 (LCI)

WASTE CATEGORIES AND OUTPUT FLOWS PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
HWD	[kg]	1.00E-03	6.69E-06	1.32E-04	1.02E-06	8.77E-06	0.00E+00	1.02E-06	1.42E-05	0.00E+00	-1.49E-04
NHWD	[kg]	2.88E-01	8.71E-02	1.25E-01	1.33E-02	4.20E-02	0.00E+00	1.33E-02	5.08E-02	0.00E+00	-1.09E-01
RWD	[kg]	8.95E-05	3.06E-07	9.23E-05	4.67E-08	2.29E-06	0.00E+00	4.67E-08	2.44E-05	0.00E+00	-2.08E-05
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	0.00E+00	0.00E+00
MFR	[kg]	0.00E+00	0.00E+00	5.09E-02	0.00E+00	3.52E-01	0.00E+00	0.00E+00	6.89E-01	0.00E+00	0.00E+00
MER	[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	0.00E+00	0.00E+00
EEE	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.37E-01	0.00E+00	0.00E+00	1.28E+00	0.00E+00	0.00E+00
EET	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.71E-01	0.00E+00	0.00E+00	2.49E+00	0.00E+00	0.00E+00
Abbreviation	HWD = Hazardous Waste Disposed; NHWD = Non-Hazardous Waste Disposed; RWD = Radioactive Waste Disposed; CRU = Components for Recycling; MFR = Material for Recycling; MER = Material for Energy Recovery; EEE = Exported Electrical Energy; EET = Exported Thermal Energy										

Tabel 24 - Biogenic carbon at the factory gate

BIOGENIC CARBON PER KG		
Parameter	Unit	At the factory gate
Biogenic carbon content in the product	[kg C]	0.00E+00
Biogenic carbon content in the accompanying packaging	[kg C]	1.78E-01
Note	1 kg of biogenic carbon is equivalent to 44/12 kg of CO ₂	

RESULTS FOR GROUP 5 ACCORDING TO EN15804:2012+A2:2019

Tabel 25 – Potential environmental impacts, EN15804:2012+A2:2019 (LCIA)

ENVIRONMENTAL IMPACTS PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
GWP-total	[kg CO ₂ eq.]	3.46E+00	6.47E-02	2.29E+00	1.07E-02	4.35E-01	0.00E+00	1.07E-02	1.29E+00	0.00E+00	-1.52E+00
GWP-fossil	[kg CO ₂ eq.]	3.64E+00	6.47E-02	2.28E+00	1.07E-02	8.58E-02	0.00E+00	1.07E-02	1.29E+00	0.00E+00	-1.52E+00
GWP-biogenic	[kg CO ₂ eq.]	-1.77E-01	0.00E+00	2.96E-03	0.00E+00	3.49E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GWP-luluc	[kg CO ₂ eq.]	3.44E-03	2.23E-05	1.30E-03	3.67E-06	2.65E-05	0.00E+00	3.67E-06	4.77E-04	0.00E+00	-1.00E-03
ODP	[kg CFC 11 eq.]	8.14E-08	1.31E-09	3.69E-08	2.16E-10	5.50E-10	0.00E+00	2.16E-10	4.19E-09	0.00E+00	-1.07E-08
AP	[mol H ⁺ eq.]	2.76E-02	2.58E-04	7.17E-03	4.25E-05	2.30E-04	0.00E+00	4.25E-05	1.64E-03	0.00E+00	-6.37E-03
EP-freshwater	[kg P eq.]	1.40E-03	4.43E-06	8.35E-04	7.29E-07	8.99E-06	0.00E+00	7.29E-07	1.83E-04	0.00E+00	-6.93E-04
EP-marine	[kg N eq.]	3.58E-03	9.66E-05	1.56E-03	1.59E-05	8.73E-05	0.00E+00	1.59E-05	3.90E-04	0.00E+00	-1.44E-03
EP-terrestrial	[mol N eq.]	9.13E-02	1.05E-03	1.55E-02	1.73E-04	9.08E-04	0.00E+00	1.73E-04	4.04E-03	0.00E+00	-1.60E-02
POCP	[kg NMVOC eq.]	1.36E-02	4.07E-04	4.95E-03	6.70E-05	2.67E-04	0.00E+00	6.70E-05	1.25E-03	0.00E+00	-5.16E-03
ADPm ¹	[kg Sb eq.]	6.85E-05	1.76E-07	4.66E-06	2.89E-08	1.69E-07	0.00E+00	2.89E-08	1.97E-06	0.00E+00	-1.23E-05
ADPf ¹	[MJ]	6.27E+01	9.42E-01	3.23E+01	1.55E-01	4.25E-01	0.00E+00	1.55E-01	4.96E+00	0.00E+00	-1.63E+01
WDP ¹	[m ³ world eq. deprived]	1.07E+00	4.49E-03	3.39E-01	7.40E-04	4.04E-03	0.00E+00	7.40E-04	1.83E-01	0.00E+00	-2.92E-01
Abbreviation	GWP-total = Global warming, total; GWP-fossil = Global warming, fossil fuels; GWP-biogenic = Global warming, biogenic; GWP-luluc = Global warming, land use and land conversion; ODP = Ozone depletion; AP = Acidification; EP-freshwater = Eutrophication (nutrient loading) – freshwater; EP-marine = Eutrophication (nutrient loading) – marine; EP-terrestrial = Eutrophication (nutrient loading) – terrestrial; POCP = Photochemical ozone creation; ADPm = Depletion of abiotic resources – minerals and metals; ADPf = Depletion of abiotic fossil resources; WDP = Water consumption										
Remark	¹ The results for this environmental indicator should be used with caution, as the uncertainty surrounding the results is high or because there is limited experience with the indicator.										

Tabel 26 – Potential environmental impacts, EN15804:2012+A2:2019 (LCIA)

ENVIRONMENTAL IMPACTS PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
PM	[Disease incidence]	3.21E-07	6.58E-09	5.09E-08	1.08E-09	3.73E-09	0.00E+00	1.08E-09	3.64E-08	0.00E+00	-1.13E-07
IRP ²	[kBq U235 eq.]	3.35E-01	1.15E-03	2.92E-01	1.89E-04	4.09E-03	0.00E+00	1.89E-04	8.83E-02	0.00E+00	-7.67E-02
ETP-fw ¹	[CTUe]	1.17E+02	2.23E-01	5.58E+00	3.68E-02	3.25E-01	0.00E+00	3.68E-02	2.26E+00	0.00E+00	-8.57E+01
HTP-c ¹	[CTUh]	3.57E-07	4.02E-10	3.38E-09	6.63E-11	1.89E-10	0.00E+00	6.63E-11	4.29E-09	0.00E+00	-3.18E-07
HTP-nc ¹	[CTUh]	4.40E-08	6.08E-10	1.62E-08	1.00E-10	5.11E-10	0.00E+00	1.00E-10	6.66E-09	0.00E+00	-1.49E-08
SQP ¹	-	1.91E+01	9.49E-01	1.79E+01	1.56E-01	2.79E-01	0.00E+00	1.56E-01	1.73E+00	0.00E+00	-2.97E+01
Abbreviation	PM = Particulate matter; IRP = Ionizing radiation - human health; ETP-fw = Ecotoxicity - freshwater; HTP-c = Human toxicity - cancer effects; HTP-nc = Human toxicity - non-cancer effects; SQP = Soil quality (Dimensionless)r consumption										
Remark	¹ The results for this environmental indicator should be used with caution, as the uncertainty surrounding the results is high or because there is limited experience with the indicator. ² This impact category primarily addresses the potential impact of low dose ionizing radiation on human health associated with nuclear fuel cycles. It does not take into account effects from possible nuclear accidents, occupational exposure or disposal of radioactive waste in underground facilities. Potential ionizing radiation from the soil, from radon and from certain building materials is also not measured by this indicator.										

Tabel 27 – Resource consumption, EN15804:2012+A2:2019 (LCI)

RESOURCE CONSUMPTION PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
PERE	[MJ]	3.89E+00	1.45E-02	3.14E+00	2.39E-03	2.15E-03	0.00E+00	2.39E-03	8.11E-01	0.00E+00	-6.91E+00
PERM	[MJ]	1.46E+00	0.00E+00	9.95E-01	0.00E+00	-2.90E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	[MJ]	5.35E+00	1.45E-02	4.14E+00	2.39E-03	-2.90E+00	0.00E+00	2.39E-03	8.11E-01	0.00E+00	-6.91E+00
PENRE	[MJ]	4.99E+01	9.42E-01	3.13E+01	1.55E-01	4.25E-01	0.00E+00	1.55E-01	4.96E+00	0.00E+00	-1.63E+01
PENRM	[MJ]	1.28E+01	0.00E+00	5.35E-01	0.00E+00	-8.95E-01	0.00E+00	0.00E+00	-1.18E+01	0.00E+00	0.00E+00
PENRT	[MJ]	6.27E+01	9.42E-01	3.18E+01	1.55E-01	-4.70E-01	0.00E+00	1.55E-01	-6.82E+00	0.00E+00	-1.63E+01
SM	[kg]	0.00E+00	0.00E+00	5.45E-03	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	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	0.00E+00	0.00E+00
FW	[m ³]	2.82E-02	1.41E-04	4.41E-02	2.33E-05	2.49E-04	0.00E+00	2.33E-05	6.23E-03	0.00E+00	-1.29E-02
Abbreviation	PERE = Consumption of renewable primary energy; PERM = Consumption of renewable primary energy resources used as raw materials; PERT = Total consumption of renewable primary energy resources; PENRE = Consumption of non-renewable primary energy; PENRM = Consumption of non-renewable primary energy resources used as raw materials; PENRT = Total consumption of non-renewable primary energy resources; SM = Consumption of secondary material; RSF = Consumption of renewable secondary fuel; NRSF = Consumption of non-renewable secondary fuel; FW = Net freshwater consumption										

Tabel 28 – End of life, EN15804:2012+A2:2019 (LCI)

WASTE CATEGORIES AND OUTPUT FLOWS PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
HWD	[kg]	1.04E-03	6.19E-06	9.20E-05	1.02E-06	3.79E-06	0.00E+00	1.02E-06	1.34E-05	0.00E+00	-1.32E-04
NHWD	[kg]	2.82E-01	8.07E-02	9.65E-02	1.33E-02	1.85E-02	0.00E+00	1.33E-02	4.96E-02	0.00E+00	-8.84E-02
RWD	[kg]	8.72E-05	2.83E-07	7.23E-05	4.67E-08	1.05E-06	0.00E+00	4.67E-08	2.26E-05	0.00E+00	-1.88E-05
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	0.00E+00	0.00E+00
MFR	[kg]	0.00E+00	0.00E+00	5.09E-02	0.00E+00	1.64E-01	0.00E+00	0.00E+00	6.39E-01	0.00E+00	0.00E+00
MER	[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	0.00E+00	0.00E+00
EEE	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.89E-01	0.00E+00	0.00E+00	1.49E+00	0.00E+00	0.00E+00
EET	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.73E-01	0.00E+00	0.00E+00	2.89E+00	0.00E+00	0.00E+00
Abbreviation	HWD = Hazardous Waste Disposed; NHWD = Non-Hazardous Waste Disposed; RWD = Radioactive Waste Disposed; CRU = Components for Recycling; MFR = Material for Recycling; MER = Material for Energy Recovery; EEE = Exported Electrical Energy; EET = Exported Thermal Energy										

Tabel 29 - Biogenic carbon at the factory gate

BIOGENIC CARBON PER KG		
Parameter	Unit	At the factory gate
Biogenic carbon content in the product	[kg C]	0.00E+00
Biogenic carbon content in the accompanying packaging	[kg C]	7.90E-02
Note	1 kg of biogenic carbon is equivalent to 44/12 kg of CO ₂	

RESULTS FOR GROUP 6 ACCORDING TO EN15804:2012+A2:2019

Tabel 30 – Potential environmental impacts, EN15804:2012+A2:2019 (LCIA)

ENVIRONMENTAL IMPACTS PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
GWP-total	[kg CO ₂ eq.]	3.33E+00	5.87E-02	2.28E+00	1.07E-02	3.86E-01	0.00E+00	1.07E-02	1.46E+00	0.00E+00	-1.35E+00
GWP-fossil	[kg CO ₂ eq.]	3.50E+00	5.86E-02	2.25E+00	1.07E-02	7.15E-02	0.00E+00	1.07E-02	1.46E+00	0.00E+00	-1.35E+00
GWP-biogenic	[kg CO ₂ eq.]	-1.77E-01	0.00E+00	2.42E-02	0.00E+00	3.15E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GWP-luluc	[kg CO ₂ eq.]	3.30E-03	2.02E-05	1.17E-03	3.67E-06	2.31E-05	0.00E+00	3.67E-06	4.15E-04	0.00E+00	-9.91E-04
ODP	[kg CFC 11 eq.]	8.67E-08	1.19E-09	3.60E-08	2.16E-10	4.82E-10	0.00E+00	2.16E-10	3.69E-09	0.00E+00	-1.02E-08
AP	[mol H ⁺ eq.]	2.51E-02	2.34E-04	7.00E-03	4.25E-05	2.01E-04	0.00E+00	4.25E-05	1.47E-03	0.00E+00	-5.72E-03
EP-freshwater	[kg P eq.]	1.29E-03	4.01E-06	8.22E-04	7.29E-07	7.86E-06	0.00E+00	7.29E-07	1.60E-04	0.00E+00	-6.17E-04
EP-marine	[kg N eq.]	3.33E-03	8.75E-05	1.52E-03	1.59E-05	7.64E-05	0.00E+00	1.59E-05	3.59E-04	0.00E+00	-1.30E-03
EP-terrestrial	[mol N eq.]	8.16E-02	9.54E-04	1.51E-02	1.73E-04	7.96E-04	0.00E+00	1.73E-04	3.73E-03	0.00E+00	-1.46E-02
POCP	[kg NMVOC eq.]	1.36E-02	3.69E-04	4.81E-03	6.70E-05	2.34E-04	0.00E+00	6.70E-05	1.14E-03	0.00E+00	-4.62E-03
ADPm ¹	[kg Sb eq.]	6.25E-05	1.59E-07	4.50E-06	2.89E-08	1.47E-07	0.00E+00	2.89E-08	1.72E-06	0.00E+00	-1.09E-05
ADPf ¹	[MJ]	6.49E+01	8.54E-01	3.16E+01	1.55E-01	3.72E-01	0.00E+00	1.55E-01	4.33E+00	0.00E+00	-1.46E+01
WDP ¹	[m ³ world eq. deprived]	1.09E+00	4.07E-03	3.22E-01	7.40E-04	3.50E-03	0.00E+00	7.40E-04	1.60E-01	0.00E+00	-2.59E-01
Abbreviation	GWP-total = Global warming, total; GWP-fossil = Global warming, fossil fuels; GWP-biogenic = Global warming, biogenic; GWP-luluc = Global warming, land use and land conversion; ODP = Ozone depletion; AP = Acidification; EP-freshwater = Eutrophication (nutrient loading) – freshwater; EP-marine = Eutrophication (nutrient loading) – marine; EP-terrestrial = Eutrophication (nutrient loading) – terrestrial; POCP = Photochemical ozone creation; ADPm = Depletion of abiotic resources – minerals and metals; ADPf = Depletion of abiotic fossil resources; WDP = Water consumption										
Remark	¹ The results for this environmental indicator should be used with caution, as the uncertainty surrounding the results is high or because there is limited experience with the indicator.										

Tabel 31 – Potential environmental impacts, EN15804:2012+A2:2019 (LCIA)

ENVIRONMENTAL IMPACTS PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
PM	[Disease incidence]	2.88E-07	5.96E-09	4.73E-08	1.08E-09	3.28E-09	0.00E+00	1.08E-09	3.18E-08	0.00E+00	-1.00E-07
IRP ²	[kBq U235 eq.]	3.17E-01	1.04E-03	2.84E-01	1.89E-04	3.58E-03	0.00E+00	1.89E-04	7.68E-02	0.00E+00	-7.52E-02
ETP-fw ¹	[CTUe]	1.03E+02	2.03E-01	5.40E+00	3.68E-02	2.84E-01	0.00E+00	3.68E-02	2.04E+00	0.00E+00	-7.46E+01
HTP-c ¹	[CTUh]	3.11E-07	3.65E-10	3.26E-09	6.63E-11	1.64E-10	0.00E+00	6.63E-11	3.77E-09	0.00E+00	-2.76E-07
HTP-nc ¹	[CTUh]	4.11E-08	5.51E-10	1.58E-08	1.00E-10	4.43E-10	0.00E+00	1.00E-10	6.11E-09	0.00E+00	-1.34E-08
SQP ¹	-	1.82E+01	8.61E-01	1.61E+01	1.56E-01	2.44E-01	0.00E+00	1.56E-01	1.51E+00	0.00E+00	-2.83E+01
Abbreviation	PM = Particulate matter; IRP = Ionizing radiation - human health; ETP-fw = Ecotoxicity - freshwater; HTP-c = Human toxicity - cancer effects; HTP-nc = Human toxicity - non-cancer effects; SQP = Soil quality (Dimensionless) consumption										
Remark	¹ The results for this environmental indicator should be used with caution, as the uncertainty surrounding the results is high or because there is limited experience with the indicator. ² This impact category primarily addresses the potential impact of low dose ionizing radiation on human health associated with nuclear fuel cycles. It does not take into account effects from possible nuclear accidents, occupational exposure or disposal of radioactive waste in underground facilities. Potential ionizing radiation from the soil, from radon and from certain building materials is also not measured by this indicator.										

Tabel 32 – Resource consumption, EN15804:2012+A2:2019 (LCI)

RESOURCE CONSUMPTION PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
PERE	[MJ]	3.56E+00	1.32E-02	2.96E+00	2.39E-03	1.53E-03	0.00E+00	2.39E-03	7.06E-01	0.00E+00	-6.90E+00
PERM	[MJ]	1.46E+00	0.00E+00	7.99E-01	0.00E+00	-2.59E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	[MJ]	5.02E+00	1.32E-02	3.76E+00	2.39E-03	-2.59E+00	0.00E+00	2.39E-03	7.06E-01	0.00E+00	-6.90E+00
PENRE	[MJ]	4.94E+01	8.54E-01	3.08E+01	1.55E-01	3.72E-01	0.00E+00	1.55E-01	4.34E+00	0.00E+00	-1.46E+01
PENRM	[MJ]	1.55E+01	0.00E+00	3.60E-01	0.00E+00	-7.21E-01	0.00E+00	0.00E+00	-1.45E+01	0.00E+00	0.00E+00
PENRT	[MJ]	6.49E+01	8.54E-01	3.12E+01	1.55E-01	-3.48E-01	0.00E+00	1.55E-01	-1.02E+01	0.00E+00	-1.46E+01
SM	[kg]	0.00E+00	0.00E+00	4.65E-03	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	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	0.00E+00	0.00E+00
FW	[m ³]	2.67E-02	1.28E-04	4.37E-02	2.33E-05	2.17E-04	0.00E+00	2.33E-05	5.48E-03	0.00E+00	-1.26E-02
Abbreviation	PERE = Consumption of renewable primary energy; PERM = Consumption of renewable primary energy resources used as raw materials; PERT = Total consumption of renewable primary energy resources; PENRE = Consumption of non-renewable primary energy; PENRM = Consumption of non-renewable primary energy resources used as raw materials; PENRT = Total consumption of non-renewable primary energy resources; SM = Consumption of secondary material; RSF = Consumption of renewable secondary fuel; NRSF = Consumption of non-renewable secondary fuel; FW = Net freshwater consumption										

Tabel 33 – End of life, EN15804:2012+A2:2019 (LCI)

WASTE CATEGORIES AND OUTPUT FLOWS PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
HWD	[kg]	1.10E-03	5.61E-06	8.51E-05	1.02E-06	3.32E-06	0.00E+00	1.02E-06	1.21E-05	0.00E+00	-1.16E-04
NHWD	[kg]	2.66E-01	7.31E-02	9.28E-02	1.33E-02	1.61E-02	0.00E+00	1.33E-02	4.74E-02	0.00E+00	-8.01E-02
RWD	[kg]	8.24E-05	2.57E-07	7.04E-05	4.67E-08	9.17E-07	0.00E+00	4.67E-08	1.97E-05	0.00E+00	-1.82E-05
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	0.00E+00	0.00E+00
MFR	[kg]	0.00E+00	0.00E+00	5.09E-02	0.00E+00	1.48E-01	0.00E+00	0.00E+00	5.56E-01	0.00E+00	0.00E+00
MER	[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	0.00E+00	0.00E+00
EEE	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.59E-01	0.00E+00	0.00E+00	1.83E+00	0.00E+00	0.00E+00
EET	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.14E-01	0.00E+00	0.00E+00	3.55E+00	0.00E+00	0.00E+00
Abbreviation	HWD = Hazardous Waste Disposed; NHWD = Non-Hazardous Waste Disposed; RWD = Radioactive Waste Disposed; CRU = Components for Recycling; MFR = Material for Recycling; MER = Material for Energy Recovery; EEE = Exported Electrical Energy; EET = Exported Thermal Energy										

Tabel 34 - Biogenic carbon at the factory gate

BIOGENIC CARBON PER KG		
Parameter	Unit	At the factory gate
Biogenic carbon content in the product	[kg C]	0.00E+00
Biogenic carbon content in the accompanying packaging	[kg C]	7.09E-02
Note	1 kg of biogenic carbon is equivalent to 44/12 kg of CO ₂	

RESULTS FOR GROUP 7 ACCORDING TO EN15804:2012+A2:2019

Tabel 35 – Potential environmental impacts, EN15804:2012+A2:2019 (LCIA)

ENVIRONMENTAL IMPACTS PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
GWP-total	[kg CO ₂ eq.]	3.17E+00	5.28E-02	2.29E+00	1.07E-02	4.96E-01	0.00E+00	1.07E-02	1.66E+00	0.00E+00	-1.16E+00
GWP-fossil	[kg CO ₂ eq.]	3.34E+00	5.28E-02	2.34E+00	1.07E-02	6.57E-02	0.00E+00	1.07E-02	1.66E+00	0.00E+00	-1.16E+00
GWP-biogenic	[kg CO ₂ eq.]	-1.77E-01	0.00E+00	-4.95E-02	0.00E+00	4.30E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GWP-luluc	[kg CO ₂ eq.]	3.12E-03	1.82E-05	1.58E-03	3.67E-06	3.06E-05	0.00E+00	3.67E-06	3.43E-04	0.00E+00	-1.05E-03
ODP	[kg CFC 11 eq.]	9.29E-08	1.07E-09	3.77E-08	2.16E-10	6.57E-10	0.00E+00	2.16E-10	3.11E-09	0.00E+00	-9.86E-09
AP	[mol H ⁺ eq.]	2.22E-02	2.11E-04	7.48E-03	4.25E-05	2.81E-04	0.00E+00	4.25E-05	1.27E-03	0.00E+00	-5.07E-03
EP-freshwater	[kg P eq.]	1.15E-03	3.61E-06	8.61E-04	7.29E-07	1.06E-05	0.00E+00	7.29E-07	1.32E-04	0.00E+00	-5.35E-04
EP-marine	[kg N eq.]	3.05E-03	7.88E-05	1.63E-03	1.59E-05	1.07E-04	0.00E+00	1.59E-05	3.24E-04	0.00E+00	-1.17E-03
EP-terrestrial	[mol N eq.]	7.03E-02	8.59E-04	1.61E-02	1.73E-04	1.12E-03	0.00E+00	1.73E-04	3.37E-03	0.00E+00	-1.33E-02
POCP	[kg NMVOC eq.]	1.37E-02	3.32E-04	5.12E-03	6.70E-05	3.28E-04	0.00E+00	6.70E-05	1.01E-03	0.00E+00	-4.12E-03
ADPm ¹	[kg Sb eq.]	5.54E-05	1.43E-07	4.78E-06	2.89E-08	1.97E-07	0.00E+00	2.89E-08	1.43E-06	0.00E+00	-9.32E-06
ADPf ¹	[MJ]	6.75E+01	7.69E-01	3.29E+01	1.55E-01	5.02E-01	0.00E+00	1.55E-01	3.61E+00	0.00E+00	-1.28E+01
WDP ¹	[m ³ world eq. deprived]	1.11E+00	3.67E-03	3.55E-01	7.40E-04	4.59E-03	0.00E+00	7.40E-04	1.33E-01	0.00E+00	-2.23E-01
Abbreviation	GWP-total = Global warming, total; GWP-fossil = Global warming, fossil fuels; GWP-biogenic = Global warming, biogenic; GWP-luluc = Global warming, land use and land conversion; ODP = Ozone depletion; AP = Acidification; EP-freshwater = Eutrophication (nutrient loading) – freshwater; EP-marine = Eutrophication (nutrient loading) – marine; EP-terrestrial = Eutrophication (nutrient loading) – terrestrial; POCP = Photochemical ozone creation; ADPm = Depletion of abiotic resources – minerals and metals; ADPf = Depletion of abiotic fossil resources; WDP = Water consumption										
Remark	¹ The results for this environmental indicator should be used with caution, as the uncertainty surrounding the results is high or because there is limited experience with the indicator.										

Tabel 36 – Potential environmental impacts, EN15804:2012+A2:2019 (LCIA)

ENVIRONMENTAL IMPACTS PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
PM	[Disease incidence]	2.50E-07	5.37E-09	5.83E-08	1.08E-09	4.64E-09	0.00E+00	1.08E-09	2.65E-08	0.00E+00	-8.70E-08
IRP ²	[kBq U235 eq.]	2.94E-01	9.35E-04	3.03E-01	1.89E-04	4.72E-03	0.00E+00	1.89E-04	6.35E-02	0.00E+00	-7.61E-02
ETP-fw ¹	[CTUe]	8.66E+01	1.82E-01	5.83E+00	3.68E-02	3.96E-01	0.00E+00	3.68E-02	1.78E+00	0.00E+00	-6.19E+01
HTP-c ¹	[CTUh]	2.59E-07	3.28E-10	3.46E-09	6.63E-11	2.13E-10	0.00E+00	6.63E-11	3.16E-09	0.00E+00	-2.28E-07
HTP-nc ¹	[CTUh]	3.77E-08	4.96E-10	1.68E-08	1.00E-10	5.83E-10	0.00E+00	1.00E-10	5.48E-09	0.00E+00	-1.20E-08
SQP ¹	-	1.71E+01	7.75E-01	2.21E+01	1.56E-01	3.33E-01	0.00E+00	1.56E-01	1.25E+00	0.00E+00	-3.66E+01
Abbreviation	PM = Particulate matter; IRP = Ionizing radiation - human health; ETP-fw = Ecotoxicity - freshwater; HTP-c = Human toxicity - cancer effects; HTP-nc = Human toxicity - non-cancer effects; SQP = Soil quality (Dimensionless)r consumption										
Remark	¹ The results for this environmental indicator should be used with caution, as the uncertainty surrounding the results is high or because there is limited experience with the indicator. ² This impact category primarily addresses the potential impact of low dose ionizing radiation on human health associated with nuclear fuel cycles. It does not take into account effects from possible nuclear accidents, occupational exposure or disposal of radioactive waste in underground facilities. Potential ionizing radiation from the soil, from radon and from certain building materials is also not measured by this indicator.										

Tabel 37 – Resource consumption, EN15804:2012+A2:2019 (LCI)

RESOURCE CONSUMPTION PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
PERE	[MJ]	3.16E+00	1.18E-02	3.49E+00	2.39E-03	2.31E-03	0.00E+00	2.39E-03	5.84E-01	0.00E+00	-8.43E+00
PERM	[MJ]	1.46E+00	0.00E+00	1.45E+00	0.00E+00	-3.57E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	[MJ]	4.62E+00	1.18E-02	4.94E+00	2.39E-03	-3.56E+00	0.00E+00	2.39E-03	5.84E-01	0.00E+00	-8.43E+00
PENRE	[MJ]	4.88E+01	7.69E-01	3.24E+01	1.55E-01	5.02E-01	0.00E+00	1.55E-01	3.61E+00	0.00E+00	-1.28E+01
PENRM	[MJ]	1.87E+01	0.00E+00	1.10E-01	0.00E+00	-4.71E-01	0.00E+00	0.00E+00	-1.77E+01	0.00E+00	0.00E+00
PENRT	[MJ]	6.75E+01	7.69E-01	3.25E+01	1.55E-01	3.05E-02	0.00E+00	1.55E-01	-1.41E+01	0.00E+00	-1.28E+01
SM	[kg]	0.00E+00	0.00E+00	1.59E-03	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	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	0.00E+00	0.00E+00
FW	[m ³]	2.49E-02	1.15E-04	4.52E-02	2.33E-05	2.89E-04	0.00E+00	2.33E-05	4.61E-03	0.00E+00	-1.26E-02
Abbreviation	PERE = Consumption of renewable primary energy; PERM = Consumption of renewable primary energy resources used as raw materials; PERT = Total consumption of renewable primary energy resources; PENRE = Consumption of non-renewable primary energy; PENRM = Consumption of non-renewable primary energy resources used as raw materials; PENRT = Total consumption of non-renewable primary energy resources; SM = Consumption of secondary material; RSF = Consumption of renewable secondary fuel; NRSF = Consumption of non-renewable secondary fuel; FW = Net freshwater consumption										

Tabel 38 – End of life, EN15804:2012+A2:2019 (LCI)

WASTE CATEGORIES AND OUTPUT FLOWS PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
HWD	[kg]	1.18E-03	5.05E-06	9.03E-05	1.02E-06	4.57E-06	0.00E+00	1.02E-06	1.05E-05	0.00E+00	-9.88E-05
NHWD	[kg]	2.45E-01	6.58E-02	9.85E-02	1.33E-02	2.17E-02	0.00E+00	1.33E-02	4.49E-02	0.00E+00	-7.65E-02
RWD	[kg]	7.67E-05	2.31E-07	7.51E-05	4.67E-08	1.21E-06	0.00E+00	4.67E-08	1.63E-05	0.00E+00	-1.83E-05
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	0.00E+00	0.00E+00
MFR	[kg]	0.00E+00	0.00E+00	5.09E-02	0.00E+00	1.99E-01	0.00E+00	0.00E+00	4.59E-01	0.00E+00	0.00E+00
MER	[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	0.00E+00	0.00E+00
EEE	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.74E-01	0.00E+00	0.00E+00	2.23E+00	0.00E+00	0.00E+00
EET	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.47E-01	0.00E+00	0.00E+00	4.33E+00	0.00E+00	0.00E+00
Abbreviation	HWD = Hazardous Waste Disposed; NHWD = Non-Hazardous Waste Disposed; RWD = Radioactive Waste Disposed; CRU = Components for Recycling; MFR = Material for Recycling; MER = Material for Energy Recovery; EEE = Exported Electrical Energy; EET = Exported Thermal Energy										

Tabel 39 - Biogenic carbon at the factory gate

BIOGENIC CARBON PER KG		
Parameter	Unit	At the factory gate
Biogenic carbon content in the product	[kg C]	0.00E+00
Biogenic carbon content in the accompanying packaging	[kg C]	9.85E-02
Note	1 kg of biogenic carbon is equivalent to 44/12 kg of CO ₂	

RESULTS FOR GROUP 8 ACCORDING TO EN15804:2012+A2:2019

Tabel 40 – Potential environmental impacts, EN15804:2012+A2:2019 (LCIA)

ENVIRONMENTAL IMPACTS PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
GWP-total	[kg CO ₂ eq.]	3.04E+00	4.69E-02	2.30E+00	1.07E-02	4.93E-01	0.00E+00	1.07E-02	1.83E+00	0.00E+00	-1.00E+00
GWP-fossil	[kg CO ₂ eq.]	3.22E+00	4.69E-02	2.31E+00	1.07E-02	9.80E-02	0.00E+00	1.07E-02	1.83E+00	0.00E+00	-1.00E+00
GWP-biogenic	[kg CO ₂ eq.]	-1.77E-01	0.00E+00	-5.98E-03	0.00E+00	3.95E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GWP-luluc	[kg CO ₂ eq.]	2.99E-03	1.62E-05	1.36E-03	3.67E-06	2.89E-05	0.00E+00	3.67E-06	2.85E-04	0.00E+00	-1.05E-03
ODP	[kg CFC 11 eq.]	9.80E-08	9.49E-10	3.75E-08	2.16E-10	5.96E-10	0.00E+00	2.16E-10	2.64E-09	0.00E+00	-9.50E-09
AP	[mol H ⁺ eq.]	1.99E-02	1.87E-04	7.27E-03	4.25E-05	2.47E-04	0.00E+00	4.25E-05	1.10E-03	0.00E+00	-4.46E-03
EP-freshwater	[kg P eq.]	1.04E-03	3.21E-06	8.45E-04	7.29E-07	9.76E-06	0.00E+00	7.29E-07	1.10E-04	0.00E+00	-4.65E-04
EP-marine	[kg N eq.]	2.82E-03	7.00E-05	1.58E-03	1.59E-05	9.35E-05	0.00E+00	1.59E-05	2.96E-04	0.00E+00	-1.03E-03
EP-terrestrial	[mol N eq.]	6.12E-02	7.63E-04	1.57E-02	1.73E-04	9.72E-04	0.00E+00	1.73E-04	3.08E-03	0.00E+00	-1.19E-02
POCP	[kg NMVOC eq.]	1.37E-02	2.95E-04	5.02E-03	6.70E-05	2.86E-04	0.00E+00	6.70E-05	9.10E-04	0.00E+00	-3.62E-03
ADPm ¹	[kg Sb eq.]	4.96E-05	1.27E-07	4.74E-06	2.89E-08	1.83E-07	0.00E+00	2.89E-08	1.19E-06	0.00E+00	-8.04E-06
ADPf ¹	[MJ]	6.96E+01	6.83E-01	3.27E+01	1.55E-01	4.63E-01	0.00E+00	1.55E-01	3.03E+00	0.00E+00	-1.13E+01
WDP ¹	[m ³ world eq. deprived]	1.12E+00	3.26E-03	3.44E-01	7.40E-04	4.38E-03	0.00E+00	7.40E-04	1.11E-01	0.00E+00	-1.93E-01
Abbreviation	GWP-total = Global warming, total; GWP-fossil = Global warming, fossil fuels; GWP-biogenic = Global warming, biogenic; GWP-luluc = Global warming, land use and land conversion; ODP = Ozone depletion; AP = Acidification; EP-freshwater = Eutrophication (nutrient loading) – freshwater; EP-marine = Eutrophication (nutrient loading) – marine; EP-terrestrial = Eutrophication (nutrient loading) – terrestrial; POCP = Photochemical ozone creation; ADPm = Depletion of abiotic resources – minerals and metals; ADPf = Depletion of abiotic fossil resources; WDP = Water consumption										
Remark	¹ The results for this environmental indicator should be used with caution, as the uncertainty surrounding the results is high or because there is limited experience with the indicator.										

Tabel 41 – Potential environmental impacts, EN15804:2012+A2:2019 (LCIA)

ENVIRONMENTAL IMPACTS PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
PM	[Disease incidence]	2.19E-07	4.77E-09	5.23E-08	1.08E-09	3.99E-09	0.00E+00	1.08E-09	2.22E-08	0.00E+00	-7.46E-08
IRP ²	[kBq U235 eq.]	2.77E-01	8.31E-04	2.97E-01	1.89E-04	4.47E-03	0.00E+00	1.89E-04	5.26E-02	0.00E+00	-7.55E-02
ETP-fw ¹	[CTUe]	7.34E+01	1.62E-01	5.65E+00	3.68E-02	3.48E-01	0.00E+00	3.68E-02	1.57E+00	0.00E+00	-5.15E+01
HTP-c ¹	[CTUh]	2.16E-07	2.92E-10	3.46E-09	6.63E-11	2.07E-10	0.00E+00	6.63E-11	2.67E-09	0.00E+00	-1.89E-07
HTP-nc ¹	[CTUh]	3.50E-08	4.41E-10	1.64E-08	1.00E-10	5.53E-10	0.00E+00	1.00E-10	4.96E-09	0.00E+00	-1.07E-08
SQP ¹	-	1.63E+01	6.88E-01	1.86E+01	1.56E-01	3.02E-01	0.00E+00	1.56E-01	1.05E+00	0.00E+00	-3.37E+01
Abbreviation	PM = Particulate matter; IRP = Ionizing radiation - human health; ETP-fw = Ecotoxicity - freshwater; HTP-c = Human toxicity - cancer effects; HTP-nc = Human toxicity - non-cancer effects; SQP = Soil quality (Dimensionless)r consumption										
Remark	¹ The results for this environmental indicator should be used with caution, as the uncertainty surrounding the results is high or because there is limited experience with the indicator. ² This impact category primarily addresses the potential impact of low dose ionizing radiation on human health associated with nuclear fuel cycles. It does not take into account effects from possible nuclear accidents, occupational exposure or disposal of radioactive waste in underground facilities. Potential ionizing radiation from the soil, from radon and from certain building materials is also not measured by this indicator.										

Tabel 42 – Resource consumption, EN15804:2012+A2:2019 (LCI)

RESOURCE CONSUMPTION PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
PERE	[MJ]	2.85E+00	1.05E-02	3.23E+00	2.39E-03	1.75E-03	0.00E+00	2.39E-03	4.84E-01	0.00E+00	-8.29E+00
PERM	[MJ]	1.46E+00	0.00E+00	1.06E+00	0.00E+00	-3.23E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	[MJ]	4.31E+00	1.05E-02	4.29E+00	2.39E-03	-3.23E+00	0.00E+00	2.39E-03	4.84E-01	0.00E+00	-8.29E+00
PENRE	[MJ]	4.83E+01	6.83E-01	3.15E+01	1.55E-01	4.63E-01	0.00E+00	1.55E-01	3.03E+00	0.00E+00	-1.13E+01
PENRM	[MJ]	2.13E+01	0.00E+00	6.84E-01	0.00E+00	-1.04E+00	0.00E+00	0.00E+00	-2.02E+01	0.00E+00	0.00E+00
PENRT	[MJ]	6.96E+01	6.83E-01	3.22E+01	1.55E-01	-5.82E-01	0.00E+00	1.55E-01	-1.72E+01	0.00E+00	-1.13E+01
SM	[kg]	0.00E+00	0.00E+00	7.28E-03	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	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	0.00E+00	0.00E+00
FW	[m ³]	2.36E-02	1.02E-04	4.45E-02	2.33E-05	2.69E-04	0.00E+00	2.33E-05	3.90E-03	0.00E+00	-1.24E-02
Abbreviation	PERE = Consumption of renewable primary energy; PERM = Consumption of renewable primary energy resources used as raw materials; PERT = Total consumption of renewable primary energy resources; PENRE = Consumption of non-renewable primary energy; PENRM = Consumption of non-renewable primary energy resources used as raw materials; PENRT = Total consumption of non-renewable primary energy resources; SM = Consumption of secondary material; RSF = Consumption of renewable secondary fuel; NRSF = Consumption of non-renewable secondary fuel; FW = Net freshwater consumption										

Tabel 43 – End of life, EN15804:2012+A2:2019 (LCI)

WASTE CATEGORIES AND OUTPUT FLOWS PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
HWD	[kg]	1.24E-03	4.49E-06	9.39E-05	1.02E-06	4.08E-06	0.00E+00	1.02E-06	9.21E-06	0.00E+00	-8.50E-05
NHWD	[kg]	2.30E-01	5.85E-02	9.91E-02	1.33E-02	2.00E-02	0.00E+00	1.33E-02	4.29E-02	0.00E+00	-6.80E-02
RWD	[kg]	7.23E-05	2.06E-07	7.37E-05	4.67E-08	1.15E-06	0.00E+00	4.67E-08	1.35E-05	0.00E+00	-1.80E-05
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	0.00E+00	0.00E+00
MFR	[kg]	0.00E+00	0.00E+00	5.09E-02	0.00E+00	1.86E-01	0.00E+00	0.00E+00	3.80E-01	0.00E+00	0.00E+00
MER	[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	0.00E+00	0.00E+00
EEE	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.09E-01	0.00E+00	0.00E+00	2.55E+00	0.00E+00	0.00E+00
EET	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.13E-01	0.00E+00	0.00E+00	4.96E+00	0.00E+00	0.00E+00
Abbreviation	HWD = Hazardous Waste Disposed; NHWD = Non-Hazardous Waste Disposed; RWD = Radioactive Waste Disposed; CRU = Components for Recycling; MFR = Material for Recycling; MER = Material for Energy Recovery; EEE = Exported Electrical Energy; EET = Exported Thermal Energy										

Tabel 44 - Biogenic carbon at the factory gate

BIOGENIC CARBON PER KG		
Parameter	Unit	At the factory gate
Biogenic carbon content in the product	[kg C]	0.00E+00
Biogenic carbon content in the accompanying packaging	[kg C]	8.82E-02
Note	1 kg of biogenic carbon is equivalent to 44/12 kg of CO ₂	

RESULTS FOR GROUP 9 ACCORDING TO EN15804:2012+A2:2019

Tabel 45 – Potential environmental impacts, EN15804:2012+A2:2019 (LCIA)

ENVIRONMENTAL IMPACTS PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
GWP-total	[kg CO ₂ eq.]	2.94E+00	4.21E-02	2.34E+00	1.07E-02	5.80E-01	0.00E+00	1.07E-02	1.96E+00	0.00E+00	-8.82E-01
GWP-fossil	[kg CO ₂ eq.]	3.11E+00	4.21E-02	2.35E+00	1.07E-02	1.42E-01	0.00E+00	1.07E-02	1.96E+00	0.00E+00	-8.81E-01
GWP-biogenic	[kg CO ₂ eq.]	-1.77E-01	0.00E+00	-1.65E-02	0.00E+00	4.39E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GWP-luluc	[kg CO ₂ eq.]	2.88E-03	1.45E-05	1.46E-03	3.67E-06	3.39E-05	0.00E+00	3.67E-06	2.37E-04	0.00E+00	-1.08E-03
ODP	[kg CFC 11 eq.]	1.02E-07	8.52E-10	3.90E-08	2.16E-10	6.82E-10	0.00E+00	2.16E-10	2.26E-09	0.00E+00	-9.45E-09
AP	[mol H ⁺ eq.]	1.80E-02	1.68E-04	7.45E-03	4.25E-05	2.76E-04	0.00E+00	4.25E-05	9.71E-04	0.00E+00	-4.03E-03
EP-freshwater	[kg P eq.]	9.55E-04	2.88E-06	8.62E-04	7.29E-07	1.13E-05	0.00E+00	7.29E-07	9.19E-05	0.00E+00	-4.12E-04
EP-marine	[kg N eq.]	2.63E-03	6.29E-05	1.62E-03	1.59E-05	1.04E-04	0.00E+00	1.59E-05	2.73E-04	0.00E+00	-9.43E-04
EP-terrestrial	[mol N eq.]	5.37E-02	6.85E-04	1.61E-02	1.73E-04	1.08E-03	0.00E+00	1.73E-04	2.84E-03	0.00E+00	-1.10E-02
POCP	[kg NMVOC eq.]	1.37E-02	2.65E-04	5.21E-03	6.70E-05	3.20E-04	0.00E+00	6.70E-05	8.26E-04	0.00E+00	-3.28E-03
ADPm ¹	[kg Sb eq.]	4.50E-05	1.14E-07	5.00E-06	2.89E-08	2.13E-07	0.00E+00	2.89E-08	9.95E-07	0.00E+00	-7.05E-06
ADPf ¹	[MJ]	7.13E+01	6.13E-01	3.37E+01	1.55E-01	5.34E-01	0.00E+00	1.55E-01	2.55E+00	0.00E+00	-1.02E+01
WDP ¹	[m ³ world eq. deprived]	1.14E+00	2.92E-03	3.63E-01	7.40E-04	5.20E-03	0.00E+00	7.40E-04	9.26E-02	0.00E+00	-1.71E-01
Abbreviation	GWP-total = Global warming, total; GWP-fossil = Global warming, fossil fuels; GWP-biogenic = Global warming, biogenic; GWP-luluc = Global warming, land use and land conversion; ODP = Ozone depletion; AP = Acidification; EP-freshwater = Eutrophication (nutrient loading) – freshwater; EP-marine = Eutrophication (nutrient loading) – marine; EP-terrestrial = Eutrophication (nutrient loading) – terrestrial; POCP = Photochemical ozone creation; ADPm = Depletion of abiotic resources – minerals and metals; ADPf = Depletion of abiotic fossil resources; WDP = Water consumption										
Remark	¹ The results for this environmental indicator should be used with caution, as the uncertainty surrounding the results is high or because there is limited experience with the indicator.										

Tabel 46 – Potential environmental impacts, EN15804:2012+A2:2019 (LCIA)

ENVIRONMENTAL IMPACTS PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
PM	[Disease incidence]	1.93E-07	4.28E-09	5.49E-08	1.08E-09	4.41E-09	0.00E+00	1.08E-09	1.87E-08	0.00E+00	-6.55E-08
IRP ²	[kBq U235 eq.]	2.63E-01	7.46E-04	3.08E-01	1.89E-04	5.25E-03	0.00E+00	1.89E-04	4.38E-02	0.00E+00	-7.66E-02
ETP-fw ¹	[CTUe]	6.27E+01	1.45E-01	5.86E+00	3.68E-02	3.92E-01	0.00E+00	3.68E-02	1.40E+00	0.00E+00	-4.30E+01
HTP-c ¹	[CTUh]	1.81E-07	2.62E-10	3.66E-09	6.63E-11	2.46E-10	0.00E+00	6.63E-11	2.27E-09	0.00E+00	-1.58E-07
HTP-nc ¹	[CTUh]	3.28E-08	3.96E-10	1.68E-08	1.00E-10	6.53E-10	0.00E+00	1.00E-10	4.54E-09	0.00E+00	-9.77E-09
SQP ¹	-	1.56E+01	6.18E-01	1.97E+01	1.56E-01	3.46E-01	0.00E+00	1.56E-01	8.78E-01	0.00E+00	-3.61E+01
Abbreviation	PM = Particulate matter; IRP = Ionizing radiation - human health; ETP-fw = Ecotoxicity - freshwater; HTP-c = Human toxicity - cancer effects; HTP-nc = Human toxicity - non-cancer effects; SQP = Soil quality (Dimensionless) consumption										
Remark	¹ The results for this environmental indicator should be used with caution, as the uncertainty surrounding the results is high or because there is limited experience with the indicator. ² This impact category primarily addresses the potential impact of low dose ionizing radiation on human health associated with nuclear fuel cycles. It does not take into account effects from possible nuclear accidents, occupational exposure or disposal of radioactive waste in underground facilities. Potential ionizing radiation from the soil, from radon and from certain building materials is also not measured by this indicator.										

Tabel 47 – Resource consumption, EN15804:2012+A2:2019 (LCI)

RESOURCE CONSUMPTION PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
PERE	[MJ]	2.59E+00	9.44E-03	3.39E+00	2.39E-03	1.97E-03	0.00E+00	2.39E-03	4.04E-01	0.00E+00	-8.92E+00
PERM	[MJ]	1.46E+00	0.00E+00	1.15E+00	0.00E+00	-3.59E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	[MJ]	4.06E+00	9.44E-03	4.54E+00	2.39E-03	-3.59E+00	0.00E+00	2.39E-03	4.04E-01	0.00E+00	-8.92E+00
PENRE	[MJ]	4.79E+01	6.13E-01	3.19E+01	1.55E-01	5.34E-01	0.00E+00	1.55E-01	2.55E+00	0.00E+00	-1.02E+01
PENRM	[MJ]	2.34E+01	0.00E+00	1.32E+00	0.00E+00	-1.68E+00	0.00E+00	0.00E+00	-2.23E+01	0.00E+00	0.00E+00
PENRT	[MJ]	7.13E+01	6.13E-01	3.32E+01	1.55E-01	-1.14E+00	0.00E+00	1.55E-01	-1.98E+01	0.00E+00	-1.02E+01
SM	[kg]	0.00E+00	0.00E+00	1.26E-02	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	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	0.00E+00	0.00E+00
FW	[m ³]	2.25E-02	9.20E-05	4.50E-02	2.33E-05	3.15E-04	0.00E+00	2.33E-05	3.33E-03	0.00E+00	-1.25E-02
Abbreviation	PERE = Consumption of renewable primary energy; PERM = Consumption of renewable primary energy resources used as raw materials; PERT = Total consumption of renewable primary energy resources; PENRE = Consumption of non-renewable primary energy; PENRM = Consumption of non-renewable primary energy resources used as raw materials; PENRT = Total consumption of non-renewable primary energy resources; SM = Consumption of secondary material; RSF = Consumption of renewable secondary fuel; NRSF = Consumption of non-renewable secondary fuel; FW = Net freshwater consumption										

Tabel 48 – End of life, EN15804:2012+A2:2019 (LCI)

WASTE CATEGORIES AND OUTPUT FLOWS PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
HWD	[kg]	1.29E-03	4.03E-06	1.06E-04	1.02E-06	4.63E-06	0.00E+00	1.02E-06	8.17E-06	0.00E+00	-7.53E-05
NHWD	[kg]	2.18E-01	5.25E-02	1.06E-01	1.33E-02	2.30E-02	0.00E+00	1.33E-02	4.13E-02	0.00E+00	-6.40E-02
RWD	[kg]	6.86E-05	1.84E-07	7.64E-05	4.67E-08	1.35E-06	0.00E+00	4.67E-08	1.12E-05	0.00E+00	-1.81E-05
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	0.00E+00	0.00E+00
MFR	[kg]	0.00E+00	0.00E+00	5.09E-02	0.00E+00	2.09E-01	0.00E+00	0.00E+00	3.16E-01	0.00E+00	0.00E+00
MER	[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	0.00E+00	0.00E+00
EEE	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.79E-01	0.00E+00	0.00E+00	2.82E+00	0.00E+00	0.00E+00
EET	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.48E-01	0.00E+00	0.00E+00	5.47E+00	0.00E+00	0.00E+00
Abbreviation	HWD = Hazardous Waste Disposed; NHWD = Non-Hazardous Waste Disposed; RWD = Radioactive Waste Disposed; CRU = Components for Recycling; MFR = Material for Recycling; MER = Material for Energy Recovery; EEE = Exported Electrical Energy; EET = Exported Thermal Energy										

Tabel 49 - Biogenic carbon at the factory gate

BIOGENIC CARBON PER KG		
Parameter	Unit	At the factory gate
Biogenic carbon content in the product	[kg C]	0.00E+00
Biogenic carbon content in the accompanying packaging	[kg C]	9.70E-02
Note	1 kg of biogenic carbon is equivalent to 44/12 kg of CO ₂	

RESULTS FOR GROUP 10 ACCORDING TO EN15804:2012+A2:2019

Tabel 50 – Potential environmental impacts, EN15804:2012+A2:2019 (LCIA)

ENVIRONMENTAL IMPACTS PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
GWP-total	[kg CO ₂ eq.]	2.82E+00	3.66E-02	2.33E+00	1.07E-02	4.77E-01	0.00E+00	1.07E-02	2.11E+00	0.00E+00	-7.27E-01
GWP-fossil	[kg CO ₂ eq.]	2.99E+00	3.66E-02	2.28E+00	1.07E-02	1.50E-01	0.00E+00	1.07E-02	2.11E+00	0.00E+00	-7.26E-01
GWP-biogenic	[kg CO ₂ eq.]	-1.77E-01	0.00E+00	4.99E-02	0.00E+00	3.27E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GWP-luluc	[kg CO ₂ eq.]	2.75E-03	1.26E-05	1.09E-03	3.67E-06	2.74E-05	0.00E+00	3.67E-06	1.83E-04	0.00E+00	-1.04E-03
ODP	[kg CFC 11 eq.]	1.07E-07	7.40E-10	3.75E-08	2.16E-10	5.27E-10	0.00E+00	2.16E-10	1.82E-09	0.00E+00	-8.93E-09
AP	[mol H ⁺ eq.]	1.59E-02	1.46E-04	7.03E-03	4.25E-05	2.05E-04	0.00E+00	4.25E-05	8.19E-04	0.00E+00	-3.42E-03
EP-freshwater	[kg P eq.]	8.54E-04	2.50E-06	8.27E-04	7.29E-07	8.88E-06	0.00E+00	7.29E-07	7.11E-05	0.00E+00	-3.43E-04
EP-marine	[kg N eq.]	2.42E-03	5.46E-05	1.53E-03	1.59E-05	7.73E-05	0.00E+00	1.59E-05	2.46E-04	0.00E+00	-8.01E-04
EP-terrestrial	[mol N eq.]	4.52E-02	5.95E-04	1.52E-02	1.73E-04	7.91E-04	0.00E+00	1.73E-04	2.57E-03	0.00E+00	-9.56E-03
POCP	[kg NMVOC eq.]	1.37E-02	2.30E-04	4.95E-03	6.70E-05	2.36E-04	0.00E+00	6.70E-05	7.29E-04	0.00E+00	-2.75E-03
ADPm ¹	[kg Sb eq.]	3.96E-05	9.94E-08	4.76E-06	2.89E-08	1.69E-07	0.00E+00	2.89E-08	7.73E-07	0.00E+00	-5.81E-06
ADPf ¹	[MJ]	7.32E+01	5.33E-01	3.25E+01	1.55E-01	4.20E-01	0.00E+00	1.55E-01	2.00E+00	0.00E+00	-8.69E+00
WDP ¹	[m ³ world eq. deprived]	1.16E+00	2.54E-03	3.34E-01	7.40E-04	4.26E-03	0.00E+00	7.40E-04	7.21E-02	0.00E+00	-1.42E-01
Abbreviation	GWP-total = Global warming, total; GWP-fossil = Global warming, fossil fuels; GWP-biogenic = Global warming, biogenic; GWP-luluc = Global warming, land use and land conversion; ODP = Ozone depletion; AP = Acidification; EP-freshwater = Eutrophication (nutrient loading) – freshwater; EP-marine = Eutrophication (nutrient loading) – marine; EP-terrestrial = Eutrophication (nutrient loading) – terrestrial; POCP = Photochemical ozone creation; ADPm = Depletion of abiotic resources – minerals and metals; ADPf = Depletion of abiotic fossil resources; WDP = Water consumption										
Remark	¹ The results for this environmental indicator should be used with caution, as the uncertainty surrounding the results is high or because there is limited experience with the indicator.										

Tabel 51 – Potential environmental impacts, EN15804:2012+A2:2019 (LCIA)

ENVIRONMENTAL IMPACTS PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
PM	[Disease incidence]	1.64E-07	3.72E-09	4.51E-08	1.08E-09	3.19E-09	0.00E+00	1.08E-09	1.47E-08	0.00E+00	-5.34E-08
IRP ²	[kBq U235 eq.]	2.46E-01	6.48E-04	2.91E-01	1.89E-04	4.25E-03	0.00E+00	1.89E-04	3.37E-02	0.00E+00	-7.48E-02
ETP-fw ¹	[CTUe]	5.04E+01	1.26E-01	5.48E+00	3.68E-02	2.94E-01	0.00E+00	3.68E-02	1.21E+00	0.00E+00	-3.32E+01
HTP-c ¹	[CTUh]	1.41E-07	2.28E-10	3.49E-09	6.63E-11	2.03E-10	0.00E+00	6.63E-11	1.81E-09	0.00E+00	-1.21E-07
HTP-nc ¹	[CTUh]	3.03E-08	3.44E-10	1.59E-08	1.00E-10	5.30E-10	0.00E+00	1.00E-10	4.06E-09	0.00E+00	-8.49E-09
SQP ¹	-	1.48E+01	5.37E-01	1.43E+01	1.56E-01	2.68E-01	0.00E+00	1.56E-01	6.84E-01	0.00E+00	-3.00E+01
Abbreviation	PM = Particulate matter; IRP = Ionizing radiation - human health; ETP-fw = Ecotoxicity - freshwater; HTP-c = Human toxicity - cancer effects; HTP-nc = Human toxicity - non-cancer effects; SQP = Soil quality (Dimensionless)r consumption										
Remark	¹ The results for this environmental indicator should be used with caution, as the uncertainty surrounding the results is high or because there is limited experience with the indicator. ² This impact category primarily addresses the potential impact of low dose ionizing radiation on human health associated with nuclear fuel cycles. It does not take into account effects from possible nuclear accidents, occupational exposure or disposal of radioactive waste in underground facilities. Potential ionizing radiation from the soil, from radon and from certain building materials is also not measured by this indicator.										

Tabel 52 – Resource consumption, EN15804:2012+A2:2019 (LCI)

RESOURCE CONSUMPTION PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
PERE	[MJ]	2.30E+00	8.21E-03	2.92E+00	2.39E-03	1.39E-03	0.00E+00	2.39E-03	3.11E-01	0.00E+00	-8.18E+00
PERM	[MJ]	1.46E+00	0.00E+00	5.64E-01	0.00E+00	-2.67E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	[MJ]	3.76E+00	8.21E-03	3.49E+00	2.39E-03	-2.66E+00	0.00E+00	2.39E-03	3.11E-01	0.00E+00	-8.18E+00
PENRE	[MJ]	4.74E+01	5.33E-01	3.05E+01	1.55E-01	4.20E-01	0.00E+00	1.55E-01	2.00E+00	0.00E+00	-8.69E+00
PENRM	[MJ]	2.58E+01	0.00E+00	1.59E+00	0.00E+00	-1.95E+00	0.00E+00	0.00E+00	-2.47E+01	0.00E+00	0.00E+00
PENRT	[MJ]	7.32E+01	5.33E-01	3.21E+01	1.55E-01	-1.53E+00	0.00E+00	1.55E-01	-2.27E+01	0.00E+00	-8.69E+00
SM	[kg]	0.00E+00	0.00E+00	1.56E-02	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	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	0.00E+00	0.00E+00
FW	[m ³]	2.12E-02	8.00E-05	4.36E-02	2.33E-05	2.52E-04	0.00E+00	2.33E-05	2.67E-03	0.00E+00	-1.23E-02
Abbreviation	PERE = Consumption of renewable primary energy; PERM = Consumption of renewable primary energy resources used as raw materials; PERT = Total consumption of renewable primary energy resources; PENRE = Consumption of non-renewable primary energy; PENRM = Consumption of non-renewable primary energy resources used as raw materials; PENRT = Total consumption of non-renewable primary energy resources; SM = Consumption of secondary material; RSF = Consumption of renewable secondary fuel; NRSF = Consumption of non-renewable secondary fuel; FW = Net freshwater consumption										

Tabel 53 – End of life, EN15804:2012+A2:2019 (LCI)

WASTE CATEGORIES AND OUTPUT FLOWS PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
HWD	[kg]	1.35E-03	3.50E-06	1.02E-04	1.02E-06	3.52E-06	0.00E+00	1.02E-06	6.97E-06	0.00E+00	-6.11E-05
NHWD	[kg]	2.06E-01	4.56E-02	1.01E-01	1.33E-02	1.80E-02	0.00E+00	1.33E-02	3.94E-02	0.00E+00	-5.40E-02
RWD	[kg]	6.44E-05	1.60E-07	7.23E-05	4.67E-08	1.09E-06	0.00E+00	4.67E-08	8.64E-06	0.00E+00	-1.76E-05
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	0.00E+00	0.00E+00
MFR	[kg]	0.00E+00	0.00E+00	5.09E-02	0.00E+00	1.59E-01	0.00E+00	0.00E+00	2.42E-01	0.00E+00	0.00E+00
MER	[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	0.00E+00	0.00E+00
EEE	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.68E-01	0.00E+00	0.00E+00	3.12E+00	0.00E+00	0.00E+00
EET	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.25E-01	0.00E+00	0.00E+00	6.06E+00	0.00E+00	0.00E+00
Abbreviation	HWD = Hazardous Waste Disposed; NHWD = Non-Hazardous Waste Disposed; RWD = Radioactive Waste Disposed; CRU = Components for Recycling; MFR = Material for Recycling; MER = Material for Energy Recovery; EEE = Exported Electrical Energy; EET = Exported Thermal Energy										

Tabel 54 - Biogenic carbon at the factory gate

BIOGENIC CARBON PER KG		
Parameter	Unit	At the factory gate
Biogenic carbon content in the product	[kg C]	0.00E+00
Biogenic carbon content in the accompanying packaging	[kg C]	7.07E-02
Note	1 kg of biogenic carbon is equivalent to 44/12 kg of CO ₂	

RESULTS FOR GROUP 11 ACCORDING TO EN15804:2012+A2:2019

Tabel 55 – Potential environmental impacts, EN15804:2012+A2:2019 (LCIA)

ENVIRONMENTAL IMPACTS PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
GWP-total	[kg CO ₂ eq.]	8.08E-01	7.48E-03	2.28E+00	1.07E-02	5.43E-01	0.00E+00	1.07E-02	2.40E+00	0.00E+00	-2.34E-01
GWP-fossil	[kg CO ₂ eq.]	9.84E-01	7.47E-03	2.33E+00	1.07E-02	5.41E-02	0.00E+00	1.07E-02	2.40E+00	0.00E+00	-2.33E-01
GWP-biogenic	[kg CO ₂ eq.]	-1.77E-01	0.00E+00	-4.69E-02	0.00E+00	4.89E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GWP-luluc	[kg CO ₂ eq.]	1.94E-03	2.57E-06	1.54E-03	3.67E-06	2.98E-05	0.00E+00	3.67E-06	8.36E-06	0.00E+00	-1.06E-03
ODP	[kg CFC 11 eq.]	2.61E-08	1.51E-10	3.72E-08	2.16E-10	6.47E-10	0.00E+00	2.16E-10	7.44E-10	0.00E+00	-7.19E-09
AP	[mol H ⁺ eq.]	4.23E-03	2.98E-05	7.41E-03	4.25E-05	2.76E-04	0.00E+00	4.25E-05	4.99E-04	0.00E+00	-1.59E-03
EP-freshwater	[kg P eq.]	3.19E-04	5.11E-07	8.55E-04	7.29E-07	1.03E-05	0.00E+00	7.29E-07	5.61E-06	0.00E+00	-1.25E-04
EP-marine	[kg N eq.]	1.12E-03	1.12E-05	1.61E-03	1.59E-05	1.05E-04	0.00E+00	1.59E-05	2.97E-04	0.00E+00	-4.19E-04
EP-terrestrial	[mol N eq.]	9.42E-03	1.22E-04	1.60E-02	1.73E-04	1.10E-03	0.00E+00	1.73E-04	2.51E-03	0.00E+00	-5.63E-03
POCP	[kg NMVOC eq.]	3.63E-03	4.70E-05	5.06E-03	6.70E-05	3.23E-04	0.00E+00	6.70E-05	6.28E-04	0.00E+00	-1.30E-03
ADPm ¹	[kg Sb eq.]	5.74E-06	2.03E-08	4.70E-06	2.89E-08	1.90E-07	0.00E+00	2.89E-08	9.39E-08	0.00E+00	-1.75E-06
ADPf ¹	[MJ]	1.18E+02	1.09E-01	3.26E+01	1.55E-01	4.94E-01	0.00E+00	1.55E-01	3.51E-01	0.00E+00	-3.72E+00
WDP ¹	[m ³ world eq. deprived]	2.49E-01	5.19E-04	3.48E-01	7.40E-04	4.39E-03	0.00E+00	7.40E-04	1.04E-02	0.00E+00	-4.58E-02
Abbreviation	GWP-total = Global warming, total; GWP-fossil = Global warming, fossil fuels; GWP-biogenic = Global warming, biogenic; GWP-luluc = Global warming, land use and land conversion; ODP = Ozone depletion; AP = Acidification; EP-freshwater = Eutrophication (nutrient loading) – freshwater; EP-marine = Eutrophication (nutrient loading) – marine; EP-terrestrial = Eutrophication (nutrient loading) – terrestrial; POCP = Photochemical ozone creation; ADPm = Depletion of abiotic resources – minerals and metals; ADPf = Depletion of abiotic fossil resources; WDP = Water consumption										
Remark	¹ The results for this environmental indicator should be used with caution, as the uncertainty surrounding the results is high or because there is limited experience with the indicator.										

Tabel 56 – Potential environmental impacts, EN15804:2012+A2:2019 (LCIA)

ENVIRONMENTAL IMPACTS PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
PM	[Disease incidence]	5.03E-08	7.60E-10	5.72E-08	1.08E-09	4.58E-09	0.00E+00	1.08E-09	2.20E-09	0.00E+00	-1.74E-08
IRP ²	[kBq U235 eq.]	1.46E-01	1.32E-04	2.99E-01	1.89E-04	4.62E-03	0.00E+00	1.89E-04	1.28E-03	0.00E+00	-6.96E-02
ETP-fw ¹	[CTUe]	5.80E+00	2.58E-02	5.76E+00	3.68E-02	3.84E-01	0.00E+00	3.68E-02	5.01E+00	0.00E+00	-1.24E+00
HTP-c ¹	[CTUh]	5.86E-09	4.65E-11	3.40E-09	6.63E-11	2.09E-10	0.00E+00	6.63E-11	4.08E-10	0.00E+00	-1.06E-09
HTP-nc ¹	[CTUh]	1.02E-08	7.03E-11	1.67E-08	1.00E-10	5.65E-10	0.00E+00	1.00E-10	5.39E-09	0.00E+00	-4.35E-09
SQP ¹	-	1.11E+01	1.10E-01	2.17E+01	1.56E-01	3.28E-01	0.00E+00	1.56E-01	8.55E-02	0.00E+00	-4.09E+01
Abbreviation	PM = Particulate matter; IRP = Ionizing radiation - human health; ETP-fw = Ecotoxicity - freshwater; HTP-c = Human toxicity - cancer effects; HTP-nc = Human toxicity - non-cancer effects; SQP = Soil quality (Dimensionless)r consumption										
Remark	¹ The results for this environmental indicator should be used with caution, as the uncertainty surrounding the results is high or because there is limited experience with the indicator. ² This impact category primarily addresses the potential impact of low dose ionizing radiation on human health associated with nuclear fuel cycles. It does not take into account effects from possible nuclear accidents, occupational exposure or disposal of radioactive waste in underground facilities. Potential ionizing radiation from the soil, from radon and from certain building materials is also not measured by this indicator.										

Tabel 57 – Resource consumption, EN15804:2012+A2:2019 (LCI)

RESOURCE CONSUMPTION PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
PERE	[MJ]	8.32E-01	1.68E-03	3.43E+00	2.39E-03	2.37E-03	0.00E+00	2.39E-03	2.10E-02	0.00E+00	-1.02E+01
PERM	[MJ]	1.46E+00	0.00E+00	1.41E+00	0.00E+00	-3.90E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	[MJ]	2.30E+00	1.68E-03	4.85E+00	2.39E-03	-3.90E+00	0.00E+00	2.39E-03	2.10E-02	0.00E+00	-1.02E+01
PENRE	[MJ]	8.65E+01	1.09E-01	3.22E+01	1.55E-01	4.94E-01	0.00E+00	1.55E-01	3.51E-01	0.00E+00	-3.72E+00
PENRM	[MJ]	3.19E+01	0.00E+00	-6.65E-02	0.00E+00	-2.94E-01	0.00E+00	0.00E+00	-3.08E+01	0.00E+00	0.00E+00
PENRT	[MJ]	1.18E+02	1.09E-01	3.22E+01	1.55E-01	2.00E-01	0.00E+00	1.55E-01	-3.04E+01	0.00E+00	-3.72E+00
SM	[kg]	9.83E-01	0.00E+00	0.00E+00	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	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	0.00E+00	0.00E+00
FW	[m ³]	8.70E-03	1.63E-05	4.51E-02	2.33E-05	2.80E-04	0.00E+00	2.33E-05	2.66E-03	0.00E+00	-1.10E-02
Abbreviation	PERE = Consumption of renewable primary energy; PERM = Consumption of renewable primary energy resources used as raw materials; PERT = Total consumption of renewable primary energy resources; PENRE = Consumption of non-renewable primary energy; PENRM = Consumption of non-renewable primary energy resources used as raw materials; PENRT = Total consumption of non-renewable primary energy resources; SM = Consumption of secondary material; RSF = Consumption of renewable secondary fuel; NRSF = Consumption of non-renewable secondary fuel; FW = Net freshwater consumption										

Tabel 58 – End of life, EN15804:2012+A2:2019 (LCI)

WASTE CATEGORIES AND OUTPUT FLOWS PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
HWD	[kg]	1.21E-04	7.15E-07	8.66E-05	1.02E-06	4.48E-06	0.00E+00	1.02E-06	9.46E-06	0.00E+00	-1.38E-05
NHWD	[kg]	3.40E-01	9.32E-03	9.64E-02	1.33E-02	2.14E-02	0.00E+00	1.33E-02	3.82E-02	0.00E+00	-3.78E-02
RWD	[kg]	3.89E-05	3.27E-08	7.42E-05	4.67E-08	1.18E-06	0.00E+00	4.67E-08	3.27E-07	0.00E+00	-1.60E-05
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	0.00E+00	0.00E+00
MFR	[kg]	0.00E+00	0.00E+00	5.09E-02	0.00E+00	2.23E-01	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	0.00E+00	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	1.60E-01	0.00E+00	0.00E+00	3.92E+00	0.00E+00	0.00E+00
EET	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.18E-01	0.00E+00	0.00E+00	7.66E+00	0.00E+00	0.00E+00
Abbreviation	HWD = Hazardous Waste Disposed; NHWD = Non-Hazardous Waste Disposed; RWD = Radioactive Waste Disposed; CRU = Components for Recycling; MFR = Material for Recycling; MER = Material for Energy Recovery; EEE = Exported Electrical Energy; EET = Exported Thermal Energy										

Tabel 59 - Biogenic carbon at the factory gate

BIOGENIC CARBON PER KG		
Parameter	Unit	At the factory gate
Biogenic carbon content in the product	[kg C]	0.00E+00
Biogenic carbon content in the accompanying packaging	[kg C]	1.09E-01
Note	1 kg of biogenic carbon is equivalent to 44/12 kg of CO ₂	

RESULTS FOR GROUP 12 ACCORDING TO EN15804:2012+A2:2019

Tabel 60 – Potential environmental impacts, EN15804:2012+A2:2019 (LCIA)

ENVIRONMENTAL IMPACTS PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
GWP-total	[kg CO ₂ eq.]	4.24E+00	7.24E-02	2.24E+00	1.07E-02	1.83E-01	0.00E+00	1.07E-02	1.18E+00	0.00E+00	-2.38E+00
GWP-fossil	[kg CO ₂ eq.]	4.41E+00	7.24E-02	2.15E+00	1.07E-02	1.99E-02	0.00E+00	1.07E-02	1.17E+00	0.00E+00	-2.38E+00
GWP-biogenic	[kg CO ₂ eq.]	-1.77E-01	0.00E+00	9.36E-02	0.00E+00	1.64E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GWP-luluc	[kg CO ₂ eq.]	8.99E-03	2.49E-05	7.21E-04	3.67E-06	1.09E-05	0.00E+00	3.67E-06	4.41E-03	0.00E+00	-5.29E-03
ODP	[kg CFC 11 eq.]	6.80E-08	1.46E-09	3.30E-08	2.16E-10	2.37E-10	0.00E+00	2.16E-10	1.46E-08	0.00E+00	-2.39E-08
AP	[mol H ⁺ eq.]	4.32E-02	2.89E-04	6.46E-03	4.25E-05	1.02E-04	0.00E+00	4.25E-05	9.56E-03	0.00E+00	-1.68E-02
EP-freshwater	[kg P eq.]	3.46E-03	4.95E-06	7.78E-04	7.29E-07	3.80E-06	0.00E+00	7.29E-07	7.44E-04	0.00E+00	-2.02E-03
EP-marine	[kg N eq.]	6.64E-03	1.08E-04	1.40E-03	1.59E-05	3.89E-05	0.00E+00	1.59E-05	2.42E-03	0.00E+00	-4.01E-03
EP-terrestrial	[mol N eq.]	1.12E-01	1.18E-03	1.40E-02	1.73E-04	4.08E-04	0.00E+00	1.73E-04	2.49E-02	0.00E+00	-4.26E-02
POCP	[kg NMVOC eq.]	1.98E-02	4.55E-04	4.37E-03	6.70E-05	1.19E-04	0.00E+00	6.70E-05	6.79E-03	0.00E+00	-1.22E-02
ADPm ¹	[kg Sb eq.]	9.12E-04	1.97E-07	4.01E-06	2.89E-08	7.05E-08	0.00E+00	2.89E-08	2.04E-05	0.00E+00	-7.63E-04
ADPf ¹	[MJ]	6.11E+01	1.05E+00	2.96E+01	1.55E-01	1.81E-01	0.00E+00	1.55E-01	1.85E+01	0.00E+00	-3.11E+01
WDP ¹	[m ³ world eq. deprived]	2.22E+00	5.03E-03	2.76E-01	7.40E-04	1.63E-03	0.00E+00	7.40E-04	1.34E+00	0.00E+00	-1.64E+00
Abbreviation	GWP-total = Global warming, total; GWP-fossil = Global warming, fossil fuels; GWP-biogenic = Global warming, biogenic; GWP-luluc = Global warming, land use and land conversion; ODP = Ozone depletion; AP = Acidification; EP-freshwater = Eutrophication (nutrient loading) – freshwater; EP-marine = Eutrophication (nutrient loading) – marine; EP-terrestrial = Eutrophication (nutrient loading) – terrestrial; POCP = Photochemical ozone creation; ADPm = Depletion of abiotic resources – minerals and metals; ADPf = Depletion of abiotic fossil resources; WDP = Water consumption										
Remark	¹ The results for this environmental indicator should be used with caution, as the uncertainty surrounding the results is high or because there is limited experience with the indicator.										

Tabel 61 – Potential environmental impacts, EN15804:2012+A2:2019 (LCIA)

ENVIRONMENTAL IMPACTS PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
PM	[Disease incidence]	3.58E-07	7.36E-09	3.58E-08	1.08E-09	1.69E-09	0.00E+00	1.08E-09	6.52E-08	0.00E+00	-1.46E-07
IRP ²	[kBq U235 eq.]	6.77E-01	1.28E-03	2.59E-01	1.89E-04	1.69E-03	0.00E+00	1.89E-04	3.48E-01	0.00E+00	-3.50E-01
ETP-fw ¹	[CTUe]	3.20E+02	2.50E-01	4.85E+00	3.68E-02	1.43E-01	0.00E+00	3.68E-02	1.25E+01	0.00E+00	-2.77E+02
HTP-c ¹	[CTUh]	3.10E-07	4.50E-10	2.88E-09	6.63E-11	7.61E-11	0.00E+00	6.63E-11	5.51E-09	0.00E+00	-2.57E-07
HTP-nc ¹	[CTUh]	2.80E-07	6.81E-10	1.46E-08	1.00E-10	2.09E-10	0.00E+00	1.00E-10	3.84E-08	0.00E+00	-1.69E-07
SQP ¹	-	3.11E+01	1.06E+00	1.02E+01	1.56E-01	1.20E-01	0.00E+00	1.56E-01	3.34E+00	0.00E+00	-2.18E+01
Abbreviation	PM = Particulate matter; IRP = Ionizing radiation - human health; ETP-fw = Ecotoxicity - freshwater; HTP-c = Human toxicity - cancer effects; HTP-nc = Human toxicity - non-cancer effects; SQP = Soil quality (Dimensionless)r consumption										
Remark	¹ The results for this environmental indicator should be used with caution, as the uncertainty surrounding the results is high or because there is limited experience with the indicator. ² This impact category primarily addresses the potential impact of low dose ionizing radiation on human health associated with nuclear fuel cycles. It does not take into account effects from possible nuclear accidents, occupational exposure or disposal of radioactive waste in underground facilities. Potential ionizing radiation from the soil, from radon and from certain building materials is also not measured by this indicator.										

Tabel 62 – Resource consumption, EN15804:2012+A2:2019 (LCI)

RESOURCE CONSUMPTION PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
PERE	[MJ]	7.67E+00	1.62E-02	2.38E+00	2.39E-03	8.67E-04	0.00E+00	2.39E-03	3.18E+00	0.00E+00	-5.74E+00
PERM	[MJ]	1.46E+00	0.00E+00	1.93E-01	0.00E+00	-1.34E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	[MJ]	9.13E+00	1.62E-02	2.57E+00	2.39E-03	-1.34E+00	0.00E+00	2.39E-03	3.18E+00	0.00E+00	-5.74E+00
PENRE	[MJ]	6.01E+01	1.05E+00	2.94E+01	1.55E-01	1.81E-01	0.00E+00	1.55E-01	1.85E+01	0.00E+00	-3.11E+01
PENRM	[MJ]	9.69E-01	0.00E+00	-2.52E-01	0.00E+00	-1.08E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	[MJ]	6.11E+01	1.05E+00	2.91E+01	1.55E-01	7.24E-02	0.00E+00	1.55E-01	1.85E+01	0.00E+00	-3.11E+01
SM	[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	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	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	0.00E+00	0.00E+00
FW	[m ³]	7.15E-02	1.58E-04	4.24E-02	2.33E-05	1.03E-04	0.00E+00	2.33E-05	4.02E-02	0.00E+00	-4.95E-02
Abbreviation	PERE = Consumption of renewable primary energy; PERM = Consumption of renewable primary energy resources used as raw materials; PERT = Total consumption of renewable primary energy resources; PENRE = Consumption of non-renewable primary energy; PENRM = Consumption of non-renewable primary energy resources used as raw materials; PENRT = Total consumption of non-renewable primary energy resources; SM = Consumption of secondary material; RSF = Consumption of renewable secondary fuel; NRSF = Consumption of non-renewable secondary fuel; FW = Net freshwater consumption										

Tabel 63 – End of life, EN15804:2012+A2:2019 (LCI)

WASTE CATEGORIES AND OUTPUT FLOWS PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
HWD	[kg]	4.99E-03	6.93E-06	6.69E-05	1.02E-06	1.65E-06	0.00E+00	1.02E-06	4.53E-03	0.00E+00	-4.68E-03
NHWD	[kg]	4.14E-01	9.03E-02	7.98E-02	1.33E-02	7.87E-03	0.00E+00	1.33E-02	8.65E-02	0.00E+00	-1.38E-01
RWD	[kg]	1.75E-04	3.17E-07	6.39E-05	4.67E-08	4.33E-07	0.00E+00	4.67E-08	8.93E-05	0.00E+00	-8.99E-05
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	0.00E+00	0.00E+00
MFR	[kg]	0.00E+00	0.00E+00	5.09E-02	0.00E+00	7.50E-02	0.00E+00	0.00E+00	1.00E+00	0.00E+00	0.00E+00
MER	[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	0.00E+00	0.00E+00
EEE	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.87E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EET	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.17E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Abbreviation	HWD = Hazardous Waste Disposed; NHWD = Non-Hazardous Waste Disposed; RWD = Radioactive Waste Disposed; CRU = Components for Recycling; MFR = Material for Recycling; MER = Material for Energy Recovery; EEE = Exported Electrical Energy; EET = Exported Thermal Energy										

Tabel 64 - Biogenic carbon at the factory gate

BIOGENIC CARBON PER KG		
Parameter	Unit	At the factory gate
Biogenic carbon content in the product	[kg C]	0.00E+00
Biogenic carbon content in the accompanying packaging	[kg C]	3.72E-02
Note	1 kg of biogenic carbon is equivalent to 44/12 kg of CO ₂	

RESULTS FOR GROUP 13 ACCORDING TO EN15804:2012+A2:2019

Tabel 65 – Potential environmental impacts, EN15804:2012+A2:2019 (LCIA)

ENVIRONMENTAL IMPACTS PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
GWP-total	[kg CO ₂ eq.]	4.05E+00	2.80E-02	5.06E-01	1.07E-02	2.06E-01	0.00E+00	1.07E-02	5.37E-01	0.00E+00	-2.22E+00
GWP-fossil	[kg CO ₂ eq.]	4.23E+00	2.80E-02	4.20E-01	1.07E-02	2.04E-02	0.00E+00	1.07E-02	5.36E-01	0.00E+00	-2.22E+00
GWP-biogenic	[kg CO ₂ eq.]	-1.77E-01	0.00E+00	8.50E-02	0.00E+00	1.86E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GWP-luluc	[kg CO ₂ eq.]	4.07E-03	9.65E-06	5.88E-04	3.67E-06	1.21E-05	0.00E+00	3.67E-06	7.44E-04	0.00E+00	-8.80E-04
ODP	[kg CFC 11 eq.]	5.83E-08	5.67E-10	1.01E-08	2.16E-10	2.62E-10	0.00E+00	2.16E-10	6.34E-09	0.00E+00	-1.20E-08
AP	[mol H ⁺ eq.]	3.83E-02	1.12E-04	1.18E-03	4.25E-05	1.13E-04	0.00E+00	4.25E-05	2.39E-03	0.00E+00	-8.92E-03
EP-freshwater	[kg P eq.]	1.91E-03	1.92E-06	1.03E-04	7.29E-07	4.19E-06	0.00E+00	7.29E-07	2.86E-04	0.00E+00	-1.00E-03
EP-marine	[kg N eq.]	4.63E-03	4.18E-05	2.96E-04	1.59E-05	4.29E-05	0.00E+00	1.59E-05	5.20E-04	0.00E+00	-1.98E-03
EP-terrestrial	[mol N eq.]	1.33E-01	4.56E-04	2.90E-03	1.73E-04	4.50E-04	0.00E+00	1.73E-04	5.37E-03	0.00E+00	-2.14E-02
POCP	[kg NMVOC eq.]	1.36E-02	1.76E-04	1.04E-03	6.70E-05	1.32E-04	0.00E+00	6.70E-05	1.72E-03	0.00E+00	-7.19E-03
ADPm ¹	[kg Sb eq.]	9.48E-05	7.61E-08	8.76E-07	2.89E-08	7.76E-08	0.00E+00	2.89E-08	3.06E-06	0.00E+00	-1.80E-05
ADPf ¹	[MJ]	5.32E+01	4.08E-01	5.86E+00	1.55E-01	2.00E-01	0.00E+00	1.55E-01	7.64E+00	0.00E+00	-2.29E+01
WDP ¹	[m ³ world eq. deprived]	9.92E-01	1.95E-03	8.46E-02	7.40E-04	1.78E-03	0.00E+00	7.40E-04	2.84E-01	0.00E+00	-4.24E-01
Abbreviation	GWP-total = Global warming, total; GWP-fossil = Global warming, fossil fuels; GWP-biogenic = Global warming, biogenic; GWP-luluc = Global warming, land use and land conversion; ODP = Ozone depletion; AP = Acidification; EP-freshwater = Eutrophication (nutrient loading) – freshwater; EP-marine = Eutrophication (nutrient loading) – marine; EP-terrestrial = Eutrophication (nutrient loading) – terrestrial; POCP = Photochemical ozone creation; ADPm = Depletion of abiotic resources – minerals and metals; ADPf = Depletion of abiotic fossil resources; WDP = Water consumption										
Remark	¹ The results for this environmental indicator should be used with caution, as the uncertainty surrounding the results is high or because there is limited experience with the indicator.										

Tabel 66 – Potential environmental impacts, EN15804:2012+A2:2019 (LCIA)

ENVIRONMENTAL IMPACTS PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
PM	[Disease incidence]	4.64E-07	2.85E-09	1.81E-08	1.08E-09	1.87E-09	0.00E+00	1.08E-09	5.61E-08	0.00E+00	-1.66E-07
IRP ²	[kBq U235 eq.]	4.17E-01	4.96E-04	4.36E-02	1.89E-04	1.86E-03	0.00E+00	1.89E-04	1.38E-01	0.00E+00	-7.54E-02
ETP-fw ¹	[CTUe]	1.77E+02	9.67E-02	1.24E+00	3.68E-02	1.57E-01	0.00E+00	3.68E-02	3.21E+00	0.00E+00	-1.33E+02
HTP-c ¹	[CTUh]	5.53E-07	1.74E-10	8.71E-10	6.63E-11	8.37E-11	0.00E+00	6.63E-11	6.54E-09	0.00E+00	-4.97E-07
HTP-nc ¹	[CTUh]	5.65E-08	2.63E-10	2.98E-09	1.00E-10	2.28E-10	0.00E+00	1.00E-10	9.02E-09	0.00E+00	-2.04E-08
SQP ¹	-	2.31E+01	4.11E-01	7.97E+00	1.56E-01	1.33E-01	0.00E+00	1.56E-01	2.68E+00	0.00E+00	-1.72E+01
Abbreviation	PM = Particulate matter; IRP = Ionizing radiation - human health; ETP-fw = Ecotoxicity - freshwater; HTP-c = Human toxicity - cancer effects; HTP-nc = Human toxicity - non-cancer effects; SQP = Soil quality (Dimensionless)r consumption										
Remark	¹ The results for this environmental indicator should be used with caution, as the uncertainty surrounding the results is high or because there is limited experience with the indicator. ² This impact category primarily addresses the potential impact of low dose ionizing radiation on human health associated with nuclear fuel cycles. It does not take into account effects from possible nuclear accidents, occupational exposure or disposal of radioactive waste in underground facilities. Potential ionizing radiation from the soil, from radon and from certain building materials is also not measured by this indicator.										

Tabel 67 – Resource consumption, EN15804:2012+A2:2019 (LCI)

RESOURCE CONSUMPTION PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
PERE	[MJ]	5.34E+00	6.28E-03	8.24E-01	2.39E-03	7.69E-04	0.00E+00	2.39E-03	1.26E+00	0.00E+00	-3.87E+00
PERM	[MJ]	1.46E+00	0.00E+00	2.64E-01	0.00E+00	-1.51E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	[MJ]	6.80E+00	6.28E-03	1.09E+00	2.39E-03	-1.51E+00	0.00E+00	2.39E-03	1.26E+00	0.00E+00	-3.87E+00
PENRE	[MJ]	5.22E+01	4.08E-01	5.68E+00	1.55E-01	2.00E-01	0.00E+00	1.55E-01	7.65E+00	0.00E+00	-2.29E+01
PENRM	[MJ]	9.69E-01	0.00E+00	-2.68E-01	0.00E+00	-9.27E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	[MJ]	5.32E+01	4.08E-01	5.42E+00	1.55E-01	1.07E-01	0.00E+00	1.55E-01	7.65E+00	0.00E+00	-2.29E+01
SM	[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	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	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	0.00E+00	0.00E+00
FW	[m ³]	3.47E-02	6.12E-05	4.62E-03	2.33E-05	1.13E-04	0.00E+00	2.33E-05	9.48E-03	0.00E+00	-1.32E-02
Abbreviation	PERE = Consumption of renewable primary energy; PERM = Consumption of renewable primary energy resources used as raw materials; PERT = Total consumption of renewable primary energy resources; PENRE = Consumption of non-renewable primary energy; PENRM = Consumption of non-renewable primary energy resources used as raw materials; PENRT = Total consumption of non-renewable primary energy resources; SM = Consumption of secondary material; RSF = Consumption of renewable secondary fuel; NRSF = Consumption of non-renewable secondary fuel; FW = Net freshwater consumption										

Tabel 68 – End of life, EN15804:2012+A2:2019 (LCI)

WASTE CATEGORIES AND OUTPUT FLOWS PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
HWD	[kg]	7.52E-04	2.68E-06	2.74E-05	1.02E-06	1.82E-06	0.00E+00	1.02E-06	1.93E-05	0.00E+00	-1.94E-04
NHWD	[kg]	3.56E-01	3.49E-02	4.66E-02	1.33E-02	8.62E-03	0.00E+00	1.33E-02	5.89E-02	0.00E+00	-1.12E-01
RWD	[kg]	1.08E-04	1.23E-07	1.10E-05	4.67E-08	4.78E-07	0.00E+00	4.67E-08	3.53E-05	0.00E+00	-1.90E-05
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	0.00E+00	0.00E+00
MFR	[kg]	0.00E+00	0.00E+00	5.09E-02	0.00E+00	8.51E-02	0.00E+00	0.00E+00	1.00E+00	0.00E+00	0.00E+00
MER	[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	0.00E+00	0.00E+00
EEE	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.18E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EET	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.23E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Abbreviation	HWD = Hazardous Waste Disposed; NHWD = Non-Hazardous Waste Disposed; RWD = Radioactive Waste Disposed; CRU = Components for Recycling; MFR = Material for Recycling; MER = Material for Energy Recovery; EEE = Exported Electrical Energy; EET = Exported Thermal Energy										

Tabel 69 - Biogenic carbon at the factory gate

BIOGENIC CARBON PER KG		
Parameter	Unit	At the factory gate
Biogenic carbon content in the product	[kg C]	0.00E+00
Biogenic carbon content in the accompanying packaging	[kg C]	4.20E-02
Note	1 kg of biogenic carbon is equivalent to 44/12 kg of CO ₂	

RESULTS FOR GROUP 14 ACCORDING TO EN15804:2012+A2:2019

Tabel 70 – Potential environmental impacts, EN15804:2012+A2:2019 (LCIA)

ENVIRONMENTAL IMPACTS PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
GWP-total	[kg CO ₂ eq.]	2.42E+00	8.98E-03	1.14E+00	1.07E-02	7.57E-01	0.00E+00	1.07E-02	2.62E+00	0.00E+00	-2.69E-01
GWP-fossil	[kg CO ₂ eq.]	2.60E+00	8.97E-03	1.22E+00	1.07E-02	2.04E-01	0.00E+00	1.07E-02	2.62E+00	0.00E+00	-2.68E-01
GWP-biogenic	[kg CO ₂ eq.]	-1.77E-01	0.00E+00	-8.23E-02	0.00E+00	5.53E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GWP-luluc	[kg CO ₂ eq.]	2.33E-03	3.09E-06	1.77E-03	3.67E-06	4.61E-05	0.00E+00	3.67E-06	3.63E-06	0.00E+00	-1.18E-03
ODP	[kg CFC 11 eq.]	1.22E-07	1.82E-10	2.57E-08	2.16E-10	9.21E-10	0.00E+00	2.16E-10	3.80E-10	0.00E+00	-8.39E-09
AP	[mol H ⁺ eq.]	8.69E-03	3.58E-05	4.19E-03	4.25E-05	3.73E-04	0.00E+00	4.25E-05	3.18E-04	0.00E+00	-1.79E-03
EP-freshwater	[kg P eq.]	5.18E-04	6.14E-07	4.21E-04	7.29E-07	1.53E-05	0.00E+00	7.29E-07	2.60E-06	0.00E+00	-1.40E-04
EP-marine	[kg N eq.]	1.72E-03	1.34E-05	9.51E-04	1.59E-05	1.41E-04	0.00E+00	1.59E-05	1.58E-04	0.00E+00	-4.71E-04
EP-terrestrial	[mol N eq.]	1.71E-02	1.46E-04	9.25E-03	1.73E-04	1.46E-03	0.00E+00	1.73E-04	1.67E-03	0.00E+00	-6.30E-03
POCP	[kg NMVOC eq.]	1.37E-02	5.65E-05	3.28E-03	6.70E-05	4.31E-04	0.00E+00	6.70E-05	4.12E-04	0.00E+00	-1.50E-03
ADPm ¹	[kg Sb eq.]	2.20E-05	2.44E-08	3.29E-06	2.89E-08	2.91E-07	0.00E+00	2.89E-08	4.24E-08	0.00E+00	-2.02E-06
ADPf ¹	[MJ]	7.96E+01	1.31E-01	1.89E+01	1.55E-01	7.23E-01	0.00E+00	1.55E-01	1.96E-01	0.00E+00	-4.43E+00
WDP ¹	[m ³ world eq. deprived]	1.21E+00	6.23E-04	2.76E-01	7.40E-04	7.14E-03	0.00E+00	7.40E-04	4.52E-03	0.00E+00	-5.52E-02
Abbreviation	GWP-total = Global warming, total; GWP-fossil = Global warming, fossil fuels; GWP-biogenic = Global warming, biogenic; GWP-luluc = Global warming, land use and land conversion; ODP = Ozone depletion; AP = Acidification; EP-freshwater = Eutrophication (nutrient loading) – freshwater; EP-marine = Eutrophication (nutrient loading) – marine; EP-terrestrial = Eutrophication (nutrient loading) – terrestrial; POCP = Photochemical ozone creation; ADPm = Depletion of abiotic resources – minerals and metals; ADPf = Depletion of abiotic fossil resources; WDP = Water consumption										
Remark	¹ The results for this environmental indicator should be used with caution, as the uncertainty surrounding the results is high or because there is limited experience with the indicator.										

Tabel 71 – Potential environmental impacts, EN15804:2012+A2:2019 (LCIA)

ENVIRONMENTAL IMPACTS PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
PM	[Disease incidence]	6.85E-08	9.12E-10	5.28E-08	1.08E-09	5.93E-09	0.00E+00	1.08E-09	1.45E-09	0.00E+00	-1.95E-08
IRP ²	[kBq U235 eq.]	1.92E-01	1.59E-04	1.78E-01	1.89E-04	7.15E-03	0.00E+00	1.89E-04	4.20E-04	0.00E+00	-7.77E-02
ETP-fw ¹	[CTUe]	9.89E+00	3.10E-02	3.83E+00	3.68E-02	5.33E-01	0.00E+00	3.68E-02	5.65E-01	0.00E+00	-1.42E+00
HTP-c ¹	[CTUh]	9.49E-09	5.58E-11	2.63E-09	6.63E-11	3.35E-10	0.00E+00	6.63E-11	3.00E-10	0.00E+00	-1.22E-09
HTP-nc ¹	[CTUh]	2.19E-08	8.44E-11	9.61E-09	1.00E-10	8.95E-10	0.00E+00	1.00E-10	2.48E-09	0.00E+00	-4.89E-09
SQP ¹	-	1.21E+01	1.32E-01	2.34E+01	1.56E-01	4.68E-01	0.00E+00	1.56E-01	4.68E-02	0.00E+00	-4.61E+01
Abbreviation	PM = Particulate matter; IRP = Ionizing radiation - human health; ETP-fw = Ecotoxicity - freshwater; HTP-c = Human toxicity - cancer effects; HTP-nc = Human toxicity - non-cancer effects; SQP = Soil quality (Dimensionless) consumption										
Remark	¹ The results for this environmental indicator should be used with caution, as the uncertainty surrounding the results is high or because there is limited experience with the indicator. ² This impact category primarily addresses the potential impact of low dose ionizing radiation on human health associated with nuclear fuel cycles. It does not take into account effects from possible nuclear accidents, occupational exposure or disposal of radioactive waste in underground facilities. Potential ionizing radiation from the soil, from radon and from certain building materials is also not measured by this indicator.										

Tabel 72 – Resource consumption, EN15804:2012+A2:2019 (LCI)

RESOURCE CONSUMPTION PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
PERE	[MJ]	1.33E+00	2.01E-03	2.82E+00	2.39E-03	3.14E-03	0.00E+00	2.39E-03	6.53E-03	0.00E+00	-1.14E+01
PERM	[MJ]	1.46E+00	0.00E+00	1.74E+00	0.00E+00	-4.62E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	[MJ]	2.79E+00	2.01E-03	4.56E+00	2.39E-03	-4.61E+00	0.00E+00	2.39E-03	6.53E-03	0.00E+00	-1.14E+01
PENRE	[MJ]	4.59E+01	1.31E-01	1.63E+01	1.55E-01	7.23E-01	0.00E+00	1.55E-01	1.96E-01	0.00E+00	-4.43E+00
PENRM	[MJ]	3.37E+01	0.00E+00	2.11E+00	0.00E+00	-2.47E+00	0.00E+00	0.00E+00	-3.26E+01	0.00E+00	0.00E+00
PENRT	[MJ]	7.96E+01	1.31E-01	1.84E+01	1.55E-01	-1.74E+00	0.00E+00	1.55E-01	-3.24E+01	0.00E+00	-4.43E+00
SM	[kg]	0.00E+00	0.00E+00	1.81E-02	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	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	0.00E+00	0.00E+00
FW	[m ³]	1.69E-02	1.96E-05	1.92E-02	2.33E-05	4.30E-04	0.00E+00	2.33E-05	4.92E-04	0.00E+00	-1.23E-02
Abbreviation	PERE = Consumption of renewable primary energy; PERM = Consumption of renewable primary energy resources used as raw materials; PERT = Total consumption of renewable primary energy resources; PENRE = Consumption of non-renewable primary energy; PENRM = Consumption of non-renewable primary energy resources used as raw materials; PENRT = Total consumption of non-renewable primary energy resources; SM = Consumption of secondary material; RSF = Consumption of renewable secondary fuel; NRSF = Consumption of non-renewable secondary fuel; FW = Net freshwater consumption										

Tabel 73 – End of life, EN15804:2012+A2:2019 (LCI)

WASTE CATEGORIES AND OUTPUT FLOWS PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
HWD	[kg]	1.55E-03	8.59E-07	1.00E-04	1.02E-06	6.27E-06	0.00E+00	1.02E-06	3.02E-06	0.00E+00	-2.15E-05
NHWD	[kg]	1.58E-01	1.12E-02	9.58E-02	1.33E-02	3.12E-02	0.00E+00	1.33E-02	3.31E-02	0.00E+00	-4.27E-02
RWD	[kg]	5.04E-05	3.93E-08	4.49E-05	4.67E-08	1.83E-06	0.00E+00	4.67E-08	1.06E-07	0.00E+00	-1.79E-05
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	0.00E+00	0.00E+00
MFR	[kg]	0.00E+00	0.00E+00	5.09E-02	0.00E+00	2.66E-01	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	0.00E+00	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	3.93E-01	0.00E+00	0.00E+00	4.12E+00	0.00E+00	0.00E+00
EET	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.74E-01	0.00E+00	0.00E+00	8.00E+00	0.00E+00	0.00E+00
Abbreviation	HWD = Hazardous Waste Disposed; NHWD = Non-Hazardous Waste Disposed; RWD = Radioactive Waste Disposed; CRU = Components for Recycling; MFR = Material for Recycling; MER = Material for Energy Recovery; EEE = Exported Electrical Energy; EET = Exported Thermal Energy										

Tabel 74 - Biogenic carbon at the factory gate

BIOGENIC CARBON PER KG		
Parameter	Unit	At the factory gate
Biogenic carbon content in the product	[kg C]	0.00E+00
Biogenic carbon content in the accompanying packaging	[kg C]	1.24E-01
Note	1 kg of biogenic carbon is equivalent to 44/12 kg of CO ₂	

RESULTS FOR GROUP 15 ACCORDING TO EN15804:2012+A2:2019

Tabel 75 – Potential environmental impacts, EN15804:2012+A2:2019 (LCIA)

ENVIRONMENTAL IMPACTS PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
GWP-total	[kg CO ₂ eq.]	7.96E-01	7.48E-03	1.04E+00	1.07E-02	4.13E-01	0.00E+00	1.07E-02	2.40E+00	0.00E+00	-2.42E-01
GWP-fossil	[kg CO ₂ eq.]	9.71E-01	7.47E-03	1.22E+00	1.07E-02	5.19E-02	0.00E+00	1.07E-02	2.40E+00	0.00E+00	-2.41E-01
GWP-biogenic	[kg CO ₂ eq.]	-1.77E-01	0.00E+00	-1.84E-01	0.00E+00	3.61E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GWP-luluc	[kg CO ₂ eq.]	1.92E-03	2.57E-06	2.23E-03	3.67E-06	3.95E-05	0.00E+00	3.67E-06	8.36E-06	0.00E+00	-1.07E-03
ODP	[kg CFC 11 eq.]	2.64E-08	1.51E-10	2.39E-08	2.16E-10	8.80E-10	0.00E+00	2.16E-10	7.44E-10	0.00E+00	-7.29E-09
AP	[mol H ⁺ eq.]	3.60E-03	2.98E-05	4.51E-03	4.25E-05	4.01E-04	0.00E+00	4.25E-05	4.99E-04	0.00E+00	-1.69E-03
EP-freshwater	[kg P eq.]	3.10E-04	5.11E-07	4.41E-04	7.29E-07	1.43E-05	0.00E+00	7.29E-07	5.61E-06	0.00E+00	-1.30E-04
EP-marine	[kg N eq.]	1.10E-03	1.12E-05	1.02E-03	1.59E-05	1.55E-04	0.00E+00	1.59E-05	2.97E-04	0.00E+00	-4.55E-04
EP-terrestrial	[mol N eq.]	9.22E-03	1.22E-04	9.97E-03	1.73E-04	1.62E-03	0.00E+00	1.73E-04	2.51E-03	0.00E+00	-6.04E-03
POCP	[kg NMVOC eq.]	3.56E-03	4.70E-05	3.20E-03	6.70E-05	4.66E-04	0.00E+00	6.70E-05	6.28E-04	0.00E+00	-1.39E-03
ADPm ¹	[kg Sb eq.]	5.65E-06	2.03E-08	2.98E-06	2.89E-08	2.70E-07	0.00E+00	2.89E-08	9.39E-08	0.00E+00	-1.80E-06
ADPf ¹	[MJ]	1.18E+02	1.09E-01	1.78E+01	1.55E-01	6.58E-01	0.00E+00	1.55E-01	3.51E-01	0.00E+00	-3.77E+00
WDP ¹	[m ³ world eq. deprived]	2.14E-01	5.19E-04	2.86E-01	7.40E-04	6.31E-03	0.00E+00	7.40E-04	1.04E-02	0.00E+00	-4.58E-02
Abbreviation	GWP-total = Global warming, total; GWP-fossil = Global warming, fossil fuels; GWP-biogenic = Global warming, biogenic; GWP-luluc = Global warming, land use and land conversion; ODP = Ozone depletion; AP = Acidification; EP-freshwater = Eutrophication (nutrient loading) – freshwater; EP-marine = Eutrophication (nutrient loading) – marine; EP-terrestrial = Eutrophication (nutrient loading) – terrestrial; POCP = Photochemical ozone creation; ADPm = Depletion of abiotic resources – minerals and metals; ADPf = Depletion of abiotic fossil resources; WDP = Water consumption										
Remark	¹ The results for this environmental indicator should be used with caution, as the uncertainty surrounding the results is high or because there is limited experience with the indicator.										

Tabel 76 – Potential environmental impacts, EN15804:2012+A2:2019 (LCIA)

ENVIRONMENTAL IMPACTS PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
PM	[Disease incidence]	4.92E-08	7.60E-10	6.48E-08	1.08E-09	6.60E-09	0.00E+00	1.08E-09	2.20E-09	0.00E+00	-1.90E-08
IRP ²	[kBq U235 eq.]	1.43E-01	1.32E-04	1.86E-01	1.89E-04	6.06E-03	0.00E+00	1.89E-04	1.28E-03	0.00E+00	-7.18E-02
ETP-fw ¹	[CTUe]	5.39E+00	2.58E-02	3.91E+00	3.68E-02	5.77E-01	0.00E+00	3.68E-02	5.01E+00	0.00E+00	-1.34E+00
HTP-c ¹	[CTUh]	5.77E-09	4.65E-11	2.46E-09	6.63E-11	2.73E-10	0.00E+00	6.63E-11	4.08E-10	0.00E+00	-1.09E-09
HTP-nc ¹	[CTUh]	9.97E-09	7.03E-11	1.03E-08	1.00E-10	8.29E-10	0.00E+00	1.00E-10	5.39E-09	0.00E+00	-4.50E-09
SQP ¹	-	1.09E+01	1.10E-01	3.20E+01	1.56E-01	4.42E-01	0.00E+00	1.56E-01	8.55E-02	0.00E+00	-4.62E+01
Abbreviation	PM = Particulate matter; IRP = Ionizing radiation - human health; ETP-fw = Ecotoxicity - freshwater; HTP-c = Human toxicity - cancer effects; HTP-nc = Human toxicity - non-cancer effects; SQP = Soil quality (Dimensionless)r consumption										
Remark	¹ The results for this environmental indicator should be used with caution, as the uncertainty surrounding the results is high or because there is limited experience with the indicator. ² This impact category primarily addresses the potential impact of low dose ionizing radiation on human health associated with nuclear fuel cycles. It does not take into account effects from possible nuclear accidents, occupational exposure or disposal of radioactive waste in underground facilities. Potential ionizing radiation from the soil, from radon and from certain building materials is also not measured by this indicator.										

Tabel 77 – Resource consumption, EN15804:2012+A2:2019 (LCI)

RESOURCE CONSUMPTION PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
PERE	[MJ]	7.98E-01	1.68E-03	3.33E+00	2.39E-03	2.82E-04	0.00E+00	2.39E-03	2.10E-02	0.00E+00	-1.07E+01
PERM	[MJ]	1.46E+00	0.00E+00	2.87E+00	0.00E+00	-3.83E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	[MJ]	2.26E+00	1.68E-03	6.20E+00	2.39E-03	-3.83E+00	0.00E+00	2.39E-03	2.10E-02	0.00E+00	-1.07E+01
PENRE	[MJ]	8.66E+01	1.09E-01	1.77E+01	1.55E-01	6.58E-01	0.00E+00	1.55E-01	3.51E-01	0.00E+00	-3.77E+00
PENRM	[MJ]	3.19E+01	0.00E+00	-3.61E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-3.08E+01	0.00E+00	0.00E+00
PENRT	[MJ]	1.18E+02	1.09E-01	1.74E+01	1.55E-01	6.58E-01	0.00E+00	1.55E-01	-3.04E+01	0.00E+00	-3.77E+00
SM	[kg]	9.83E-01	0.00E+00	0.00E+00	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	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	0.00E+00	0.00E+00
FW	[m ³]	7.83E-03	1.63E-05	2.01E-02	2.33E-05	3.98E-04	0.00E+00	2.33E-05	2.66E-03	0.00E+00	-1.12E-02
Abbreviation	PERE = Consumption of renewable primary energy; PERM = Consumption of renewable primary energy resources used as raw materials; PERT = Total consumption of renewable primary energy resources; PENRE = Consumption of non-renewable primary energy; PENRM = Consumption of non-renewable primary energy resources used as raw materials; PENRT = Total consumption of non-renewable primary energy resources; SM = Consumption of secondary material; RSF = Consumption of renewable secondary fuel; NRSF = Consumption of non-renewable secondary fuel; FW = Net freshwater consumption										

Tabel 78 – End of life, EN15804:2012+A2:2019 (LCI)

WASTE CATEGORIES AND OUTPUT FLOWS PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
HWD	[kg]	1.21E-04	7.15E-07	7.21E-05	1.02E-06	6.37E-06	0.00E+00	1.02E-06	9.46E-06	0.00E+00	-1.31E-05
NHWD	[kg]	3.21E-01	9.32E-03	8.77E-02	1.33E-02	3.14E-02	0.00E+00	1.33E-02	3.82E-02	0.00E+00	-4.23E-02
RWD	[kg]	3.83E-05	3.27E-08	4.69E-05	4.67E-08	1.55E-06	0.00E+00	4.67E-08	3.27E-07	0.00E+00	-1.65E-05
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	0.00E+00	0.00E+00
MFR	[kg]	0.00E+00	0.00E+00	5.09E-02	0.00E+00	1.67E-01	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	0.00E+00	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	2.22E-01	0.00E+00	0.00E+00	3.92E+00	0.00E+00	0.00E+00
EET	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.46E-01	0.00E+00	0.00E+00	7.66E+00	0.00E+00	0.00E+00
Abbreviation	HWD = Hazardous Waste Disposed; NHWD = Non-Hazardous Waste Disposed; RWD = Radioactive Waste Disposed; CRU = Components for Recycling; MFR = Material for Recycling; MER = Material for Energy Recovery; EEE = Exported Electrical Energy; EET = Exported Thermal Energy										

Tabel 79 - Biogenic carbon at the factory gate

BIOGENIC CARBON PER KG		
Parameter	Unit	At the factory gate
Biogenic carbon content in the product	[kg C]	0.00E+00
Biogenic carbon content in the accompanying packaging	[kg C]	9.85E-02
Note	1 kg of biogenic carbon is equivalent to 44/12 kg of CO ₂	

RESULTS FOR GROUP 16 ACCORDING TO EN15804:2012+A2:2019

Tabel 80 – Potential environmental impacts, EN15804:2012+A2:2019 (LCIA)

ENVIRONMENTAL IMPACTS PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
GWP-total	[kg CO ₂ eq.]	4.05E+00	1.78E-02	9.70E-01	1.07E-02	2.75E-01	0.00E+00	1.07E-02	0.00E+00	6.26E-04	-2.42E-02
GWP-fossil	[kg CO ₂ eq.]	4.23E+00	1.78E-02	9.27E-01	1.07E-02	3.32E-02	0.00E+00	1.07E-02	0.00E+00	6.25E-04	-2.41E-02
GWP-biogenic	[kg CO ₂ eq.]	-1.77E-01	0.00E+00	4.26E-02	0.00E+00	2.42E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GWP-luluc	[kg CO ₂ eq.]	4.07E-03	6.13E-06	8.93E-04	3.67E-06	1.75E-05	0.00E+00	3.67E-06	0.00E+00	3.22E-07	-1.17E-04
ODP	[kg CFC 11 eq.]	5.83E-08	3.60E-10	1.75E-08	2.16E-10	3.80E-10	0.00E+00	2.16E-10	0.00E+00	1.81E-11	-5.82E-10
AP	[mol H ⁺ eq.]	3.83E-02	7.10E-05	2.87E-03	4.25E-05	1.64E-04	0.00E+00	4.25E-05	0.00E+00	4.43E-06	-1.69E-04
EP-freshwater	[kg P eq.]	1.91E-03	1.22E-06	3.03E-04	7.29E-07	6.11E-06	0.00E+00	7.29E-07	0.00E+00	5.19E-08	-9.41E-06
EP-marine	[kg N eq.]	4.63E-03	2.66E-05	6.53E-04	1.59E-05	6.26E-05	0.00E+00	1.59E-05	0.00E+00	1.69E-06	-5.69E-05
EP-terrestrial	[mol N eq.]	1.33E-01	2.90E-04	6.45E-03	1.73E-04	6.56E-04	0.00E+00	1.73E-04	0.00E+00	1.84E-05	-6.39E-04
POCP	[kg NMVOC eq.]	1.36E-02	1.12E-04	2.14E-03	6.70E-05	1.92E-04	0.00E+00	6.70E-05	0.00E+00	6.60E-06	-2.03E-04
ADPm ¹	[kg Sb eq.]	9.48E-05	4.83E-08	1.93E-06	2.89E-08	1.14E-07	0.00E+00	2.89E-08	0.00E+00	9.77E-10	-1.42E-07
ADPf ¹	[MJ]	5.32E+01	2.59E-01	1.31E+01	1.55E-01	2.89E-01	0.00E+00	1.55E-01	0.00E+00	1.53E-02	-3.90E-01
WDP ¹	[m ³ world eq. deprived]	9.92E-01	1.24E-03	1.60E-01	7.40E-04	2.63E-03	0.00E+00	7.40E-04	0.00E+00	6.70E-04	-4.54E-03
Abbreviation	GWP-total = Global warming, total; GWP-fossil = Global warming, fossil fuels; GWP-biogenic = Global warming, biogenic; GWP-luluc = Global warming, land use and land conversion; ODP = Ozone depletion; AP = Acidification; EP-freshwater = Eutrophication (nutrient loading) – freshwater; EP-marine = Eutrophication (nutrient loading) – marine; EP-terrestrial = Eutrophication (nutrient loading) – terrestrial; POCP = Photochemical ozone creation; ADPm = Depletion of abiotic resources – minerals and metals; ADPf = Depletion of abiotic fossil resources; WDP = Water consumption										
Remark	¹ The results for this environmental indicator should be used with caution, as the uncertainty surrounding the results is high or because there is limited experience with the indicator.										

Tabel 81 – Potential environmental impacts, EN15804:2012+A2:2019 (LCIA)

ENVIRONMENTAL IMPACTS PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
PM	[Disease incidence]	4.64E-07	1.81E-09	2.98E-08	1.08E-09	2.72E-09	0.00E+00	1.08E-09	0.00E+00	1.01E-10	-2.46E-09
IRP ²	[kBq U235 eq.]	4.17E-01	3.15E-04	1.13E-01	1.89E-04	2.70E-03	0.00E+00	1.89E-04	0.00E+00	9.78E-06	-4.08E-03
ETP-fw ¹	[CTUe]	1.77E+02	6.15E-02	2.49E+00	3.68E-02	2.31E-01	0.00E+00	3.68E-02	0.00E+00	2.10E-03	-1.74E-01
HTP-c ¹	[CTUh]	5.53E-07	1.11E-10	1.57E-09	6.63E-11	1.21E-10	0.00E+00	6.63E-11	0.00E+00	2.82E-12	-1.09E-10
HTP-nc ¹	[CTUh]	5.65E-08	1.67E-10	6.69E-09	1.00E-10	3.35E-10	0.00E+00	1.00E-10	0.00E+00	2.62E-12	-2.88E-10
SQP ¹	-	2.31E+01	2.61E-01	1.23E+01	1.56E-01	1.92E-01	0.00E+00	1.56E-01	0.00E+00	3.02E-02	-1.43E+01
Abbreviation	PM = Particulate matter; IRP = Ionizing radiation - human health; ETP-fw = Ecotoxicity - freshwater; HTP-c = Human toxicity - cancer effects; HTP-nc = Human toxicity - non-cancer effects; SQP = Soil quality (Dimensionless) consumption										
Remark	¹ The results for this environmental indicator should be used with caution, as the uncertainty surrounding the results is high or because there is limited experience with the indicator. ² This impact category primarily addresses the potential impact of low dose ionizing radiation on human health associated with nuclear fuel cycles. It does not take into account effects from possible nuclear accidents, occupational exposure or disposal of radioactive waste in underground facilities. Potential ionizing radiation from the soil, from radon and from certain building materials is also not measured by this indicator.										

Tabel 82 – Resource consumption, EN15804:2012+A2:2019 (LCI)

RESOURCE CONSUMPTION PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
PERE	[MJ]	5.34E+00	3.99E-03	1.57E+00	2.39E-03	1.54E-03	0.00E+00	2.39E-03	0.00E+00	1.37E-04	-2.30E+00
PERM	[MJ]	1.46E+00	0.00E+00	6.45E-01	0.00E+00	-2.03E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	[MJ]	6.80E+00	3.99E-03	2.22E+00	2.39E-03	-2.02E+00	0.00E+00	2.39E-03	0.00E+00	1.37E-04	-2.30E+00
PENRE	[MJ]	5.22E+01	2.59E-01	1.28E+01	1.55E-01	2.89E-01	0.00E+00	1.55E-01	0.00E+00	1.53E-02	-3.90E-01
PENRM	[MJ]	9.69E-01	0.00E+00	-1.64E-01	0.00E+00	-1.97E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	[MJ]	5.32E+01	2.59E-01	1.26E+01	1.55E-01	9.23E-02	0.00E+00	1.55E-01	0.00E+00	1.53E-02	-3.90E-01
SM	[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	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	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	0.00E+00	0.00E+00
FW	[m ³]	3.47E-02	3.89E-05	1.53E-02	2.33E-05	1.66E-04	0.00E+00	2.33E-05	0.00E+00	1.60E-05	-3.93E-04
Abbreviation	PERE = Consumption of renewable primary energy; PERM = Consumption of renewable primary energy resources used as raw materials; PERT = Total consumption of renewable primary energy resources; PENRE = Consumption of non-renewable primary energy; PENRM = Consumption of non-renewable primary energy resources used as raw materials; PENRT = Total consumption of non-renewable primary energy resources; SM = Consumption of secondary material; RSF = Consumption of renewable secondary fuel; NRSF = Consumption of non-renewable secondary fuel; FW = Net freshwater consumption										

Tabel 83 – End of life, EN15804:2012+A2:2019 (LCI)

WASTE CATEGORIES AND OUTPUT FLOWS PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
HWD	[kg]	7.52E-04	1.70E-06	4.58E-05	1.02E-06	2.66E-06	0.00E+00	1.02E-06	0.00E+00	9.69E-08	-3.79E-06
NHWD	[kg]	3.56E-01	2.22E-02	6.08E-02	1.33E-02	1.25E-02	0.00E+00	1.33E-02	0.00E+00	1.00E-01	-8.64E-03
RWD	[kg]	1.08E-04	7.80E-08	2.81E-05	4.67E-08	6.93E-07	0.00E+00	4.67E-08	0.00E+00	2.38E-09	-1.00E-06
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	0.00E+00	0.00E+00
MFR	[kg]	0.00E+00	0.00E+00	5.09E-02	0.00E+00	1.12E-01	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	0.00E+00	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	9.48E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EET	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.89E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Abbreviation	HWD = Hazardous Waste Disposed; NHWD = Non-Hazardous Waste Disposed; RWD = Radioactive Waste Disposed; CRU = Components for Recycling; MFR = Material for Recycling; MER = Material for Energy Recovery; EEE = Exported Electrical Energy; EET = Exported Thermal Energy										

Tabel 84 - Biogenic carbon at the factory gate

BIOGENIC CARBON PER KG		
Parameter	Unit	At the factory gate
Biogenic carbon content in the product	[kg C]	0.00E+00
Biogenic carbon content in the accompanying packaging	[kg C]	5.60E-02
Note	1 kg of biogenic carbon is equivalent to 44/12 kg of CO ₂	

RESULTS FOR GROUP 17 ACCORDING TO EN15804:2012+A2:2019

Tabel 85 – Potential environmental impacts, EN15804:2012+A2:2019 (LCIA)

ENVIRONMENTAL IMPACTS PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
GWP-total	[kg CO ₂ eq.]	3.96E+00	8.95E-02	9.72E-01	1.07E-02	3.81E-01	0.00E+00	1.07E-02	0.00E+00	8.91E-04	-3.00E-02
GWP-fossil	[kg CO ₂ eq.]	4.13E+00	8.94E-02	9.63E-01	1.07E-02	3.78E-02	0.00E+00	1.07E-02	0.00E+00	8.90E-04	-2.99E-02
GWP-biogenic	[kg CO ₂ eq.]	-1.77E-01	0.00E+00	7.83E-03	0.00E+00	3.43E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GWP-luluc	[kg CO ₂ eq.]	4.01E-03	3.08E-05	1.09E-03	3.67E-06	2.21E-05	0.00E+00	3.67E-06	0.00E+00	3.18E-07	-1.55E-04
ODP	[kg CFC 11 eq.]	5.74E-08	1.81E-09	1.83E-08	2.16E-10	4.81E-10	0.00E+00	2.16E-10	0.00E+00	1.86E-11	-6.98E-10
AP	[mol H ⁺ eq.]	3.73E-02	3.57E-04	3.07E-03	4.25E-05	2.07E-04	0.00E+00	4.25E-05	0.00E+00	4.51E-06	-2.11E-04
EP-freshwater	[kg P eq.]	1.86E-03	6.12E-06	3.20E-04	7.29E-07	7.69E-06	0.00E+00	7.29E-07	0.00E+00	5.25E-08	-1.18E-05
EP-marine	[kg N eq.]	4.52E-03	1.34E-04	7.00E-04	1.59E-05	7.86E-05	0.00E+00	1.59E-05	0.00E+00	7.99E-06	-7.16E-05
EP-terrestrial	[mol N eq.]	1.29E-01	1.45E-03	6.89E-03	1.73E-04	8.26E-04	0.00E+00	1.73E-04	0.00E+00	1.88E-05	-8.02E-04
POCP	[kg NMVOC eq.]	1.33E-02	5.63E-04	2.27E-03	6.70E-05	2.41E-04	0.00E+00	6.70E-05	0.00E+00	6.82E-06	-2.55E-04
ADPm ¹	[kg Sb eq.]	9.21E-05	2.43E-07	2.06E-06	2.89E-08	1.42E-07	0.00E+00	2.89E-08	0.00E+00	1.02E-09	-1.71E-07
ADPf ¹	[MJ]	5.53E+01	1.30E+00	1.36E+01	1.55E-01	3.67E-01	0.00E+00	1.55E-01	0.00E+00	1.56E-02	-4.70E-01
WDP ¹	[m ³ world eq. deprived]	9.71E-01	6.21E-03	1.74E-01	7.40E-04	3.27E-03	0.00E+00	7.40E-04	0.00E+00	6.34E-04	-5.26E-03
Abbreviation	GWP-total = Global warming, total; GWP-fossil = Global warming, fossil fuels; GWP-biogenic = Global warming, biogenic; GWP-luluc = Global warming, land use and land conversion; ODP = Ozone depletion; AP = Acidification; EP-freshwater = Eutrophication (nutrient loading) – freshwater; EP-marine = Eutrophication (nutrient loading) – marine; EP-terrestrial = Eutrophication (nutrient loading) – terrestrial; POCP = Photochemical ozone creation; ADPm = Depletion of abiotic resources – minerals and metals; ADPf = Depletion of abiotic fossil resources; WDP = Water consumption										
Remark	¹ The results for this environmental indicator should be used with caution, as the uncertainty surrounding the results is high or because there is limited experience with the indicator.										

Tabel 86 – Potential environmental impacts, EN15804:2012+A2:2019 (LCIA)

ENVIRONMENTAL IMPACTS PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
PM	[Disease incidence]	4.51E-07	9.09E-09	3.48E-08	1.08E-09	3.43E-09	0.00E+00	1.08E-09	0.00E+00	1.03E-10	-3.09E-09
IRP ²	[kBq U235 eq.]	4.09E-01	1.58E-03	1.22E-01	1.89E-04	3.42E-03	0.00E+00	1.89E-04	0.00E+00	1.07E-05	-5.04E-03
ETP-fw ¹	[CTUe]	1.72E+02	3.09E-01	2.67E+00	3.68E-02	2.89E-01	0.00E+00	3.68E-02	0.00E+00	2.92E-03	-2.18E-01
HTP-c ¹	[CTUh]	5.36E-07	5.56E-10	1.68E-09	6.63E-11	1.54E-10	0.00E+00	6.63E-11	0.00E+00	2.93E-12	-1.37E-10
HTP-nc ¹	[CTUh]	5.51E-08	8.41E-10	7.14E-09	1.00E-10	4.19E-10	0.00E+00	1.00E-10	0.00E+00	4.24E-12	-3.55E-10
SQP ¹	-	2.28E+01	1.31E+00	1.51E+01	1.56E-01	2.44E-01	0.00E+00	1.56E-01	0.00E+00	3.10E-02	-1.88E+01
Abbreviation	PM = Particulate matter; IRP = Ionizing radiation - human health; ETP-fw = Ecotoxicity - freshwater; HTP-c = Human toxicity - cancer effects; HTP-nc = Human toxicity - non-cancer effects; SQP = Soil quality (Dimensionless) consumption										
Remark	¹ The results for this environmental indicator should be used with caution, as the uncertainty surrounding the results is high or because there is limited experience with the indicator. ² This impact category primarily addresses the potential impact of low dose ionizing radiation on human health associated with nuclear fuel cycles. It does not take into account effects from possible nuclear accidents, occupational exposure or disposal of radioactive waste in underground facilities. Potential ionizing radiation from the soil, from radon and from certain building materials is also not measured by this indicator.										

Tabel 87 – Resource consumption, EN15804:2012+A2:2019 (LCI)

RESOURCE CONSUMPTION PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
PERE	[MJ]	5.20E+00	2.01E-02	1.82E+00	2.39E-03	1.45E-03	0.00E+00	2.39E-03	0.00E+00	1.54E-04	-3.04E+00
PERM	[MJ]	1.46E+00	0.00E+00	9.41E-01	0.00E+00	-2.79E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	[MJ]	6.67E+00	2.01E-02	2.76E+00	2.39E-03	-2.78E+00	0.00E+00	2.39E-03	0.00E+00	1.54E-04	-3.04E+00
PENRE	[MJ]	5.33E+01	1.30E+00	1.34E+01	1.55E-01	3.67E-01	0.00E+00	1.55E-01	0.00E+00	1.56E-02	-4.70E-01
PENRM	[MJ]	1.92E+00	0.00E+00	-1.85E-01	0.00E+00	-1.76E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	[MJ]	5.53E+01	1.30E+00	1.32E+01	1.55E-01	1.91E-01	0.00E+00	1.55E-01	0.00E+00	1.56E-02	-4.70E-01
SM	[kg]	3.04E-02	0.00E+00	0.00E+00	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	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	0.00E+00	0.00E+00
FW	[m ³]	3.40E-02	1.95E-04	1.58E-02	2.33E-05	2.08E-04	0.00E+00	2.33E-05	0.00E+00	1.68E-06	-4.76E-04
Abbreviation	PERE = Consumption of renewable primary energy; PERM = Consumption of renewable primary energy resources used as raw materials; PERT = Total consumption of renewable primary energy resources; PENRE = Consumption of non-renewable primary energy; PENRM = Consumption of non-renewable primary energy resources used as raw materials; PENRT = Total consumption of non-renewable primary energy resources; SM = Consumption of secondary material; RSF = Consumption of renewable secondary fuel; NRSF = Consumption of non-renewable secondary fuel; FW = Net freshwater consumption										

Tabel 88 – End of life, EN15804:2012+A2:2019 (LCI)

WASTE CATEGORIES AND OUTPUT FLOWS PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
HWD	[kg]	7.32E-04	8.56E-06	4.80E-05	1.02E-06	3.35E-06	0.00E+00	1.02E-06	0.00E+00	9.88E-08	-4.28E-06
NHWD	[kg]	3.55E-01	1.12E-01	6.44E-02	1.33E-02	1.59E-02	0.00E+00	1.33E-02	0.00E+00	1.00E-01	-1.11E-02
RWD	[kg]	1.06E-04	3.92E-07	3.04E-05	4.67E-08	8.77E-07	0.00E+00	4.67E-08	0.00E+00	2.59E-09	-1.24E-06
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	0.00E+00	0.00E+00
MFR	[kg]	0.00E+00	0.00E+00	5.09E-02	0.00E+00	1.57E-01	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	0.00E+00	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	1.15E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EET	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.29E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Abbreviation	HWD = Hazardous Waste Disposed; NHWD = Non-Hazardous Waste Disposed; RWD = Radioactive Waste Disposed; CRU = Components for Recycling; MFR = Material for Recycling; MER = Material for Energy Recovery; EEE = Exported Electrical Energy; EET = Exported Thermal Energy										

Tabel 89 - Biogenic carbon at the factory gate

BIOGENIC CARBON PER KG		
Parameter	Unit	At the factory gate
Biogenic carbon content in the product	[kg C]	0.00E+00
Biogenic carbon content in the accompanying packaging	[kg C]	7.75E-02
Note	1 kg of biogenic carbon is equivalent to 44/12 kg of CO ₂	

RESULTS FOR GROUP 18 ACCORDING TO EN15804:2012+A2:2019

Tabel 90 – Potential environmental impacts, EN15804:2012+A2:2019 (LCIA)

ENVIRONMENTAL IMPACTS PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
GWP-total	[kg CO ₂ eq.]	3.67E+00	8.27E-02	9.62E-01	1.07E-02	3.03E-01	0.00E+00	1.07E-02	0.00E+00	1.67E-03	-2.37E-02
GWP-fossil	[kg CO ₂ eq.]	3.84E+00	8.26E-02	9.18E-01	1.07E-02	2.96E-02	0.00E+00	1.07E-02	0.00E+00	1.67E-03	-2.35E-02
GWP-biogenic	[kg CO ₂ eq.]	-1.77E-01	0.00E+00	4.36E-02	0.00E+00	2.73E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GWP-luluc	[kg CO ₂ eq.]	3.83E-03	2.85E-05	8.76E-04	3.67E-06	1.75E-05	0.00E+00	3.67E-06	0.00E+00	3.07E-07	-1.23E-04
ODP	[kg CFC 11 eq.]	5.46E-08	1.67E-09	1.73E-08	2.16E-10	3.80E-10	0.00E+00	2.16E-10	0.00E+00	2.00E-11	-5.49E-10
AP	[mol H ⁺ eq.]	3.42E-02	3.30E-04	2.83E-03	4.25E-05	1.63E-04	0.00E+00	4.25E-05	0.00E+00	4.73E-06	-1.66E-04
EP-freshwater	[kg P eq.]	1.72E-03	5.65E-06	3.00E-04	7.29E-07	6.07E-06	0.00E+00	7.29E-07	0.00E+00	5.40E-08	-9.29E-06
EP-marine	[kg N eq.]	4.21E-03	1.23E-04	6.45E-04	1.59E-05	6.21E-05	0.00E+00	1.59E-05	0.00E+00	2.65E-05	-5.65E-05
EP-terrestrial	[mol N eq.]	1.18E-01	1.34E-03	6.37E-03	1.73E-04	6.52E-04	0.00E+00	1.73E-04	0.00E+00	1.99E-05	-6.33E-04
POCP	[kg NMVOC eq.]	1.24E-02	5.20E-04	2.10E-03	6.70E-05	1.91E-04	0.00E+00	6.70E-05	0.00E+00	7.47E-06	-2.01E-04
ADPm ¹	[kg Sb eq.]	8.43E-05	2.24E-07	1.89E-06	2.89E-08	1.12E-07	0.00E+00	2.89E-08	0.00E+00	1.13E-09	-1.34E-07
ADPf ¹	[MJ]	6.13E+01	1.20E+00	1.29E+01	1.55E-01	2.90E-01	0.00E+00	1.55E-01	0.00E+00	1.63E-02	-3.70E-01
WDP ¹	[m ³ world eq. deprived]	9.09E-01	5.74E-03	1.56E-01	7.40E-04	2.58E-03	0.00E+00	7.40E-04	0.00E+00	5.26E-04	-4.13E-03
Abbreviation	GWP-total = Global warming, total; GWP-fossil = Global warming, fossil fuels; GWP-biogenic = Global warming, biogenic; GWP-luluc = Global warming, land use and land conversion; ODP = Ozone depletion; AP = Acidification; EP-freshwater = Eutrophication (nutrient loading) – freshwater; EP-marine = Eutrophication (nutrient loading) – marine; EP-terrestrial = Eutrophication (nutrient loading) – terrestrial; POCP = Photochemical ozone creation; ADPm = Depletion of abiotic resources – minerals and metals; ADPf = Depletion of abiotic fossil resources; WDP = Water consumption										
Remark	¹ The results for this environmental indicator should be used with caution, as the uncertainty surrounding the results is high or because there is limited experience with the indicator.										

Tabel 91 – Potential environmental impacts, EN15804:2012+A2:2019 (LCIA)

ENVIRONMENTAL IMPACTS PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
PM	[Disease incidence]	4.14E-07	8.40E-09	2.93E-08	1.08E-09	2.71E-09	0.00E+00	1.08E-09	0.00E+00	1.08E-10	-2.44E-09
IRP ²	[kBq U235 eq.]	3.85E-01	1.46E-03	1.11E-01	1.89E-04	2.70E-03	0.00E+00	1.89E-04	0.00E+00	1.33E-05	-3.97E-03
ETP-fw ¹	[CTUe]	1.56E+02	2.85E-01	2.44E+00	3.68E-02	2.28E-01	0.00E+00	3.68E-02	0.00E+00	5.35E-03	-1.72E-01
HTP-c ¹	[CTUh]	4.86E-07	5.14E-10	1.54E-09	6.63E-11	1.22E-10	0.00E+00	6.63E-11	0.00E+00	3.24E-12	-1.08E-10
HTP-nc ¹	[CTUh]	5.09E-08	7.77E-10	6.61E-09	1.00E-10	3.31E-10	0.00E+00	1.00E-10	0.00E+00	8.99E-12	-2.80E-10
SQP ¹	-	2.17E+01	1.21E+00	1.21E+01	1.56E-01	1.93E-01	0.00E+00	1.56E-01	0.00E+00	3.34E-02	-1.49E+01
Abbreviation	PM = Particulate matter; IRP = Ionizing radiation - human health; ETP-fw = Ecotoxicity - freshwater; HTP-c = Human toxicity - cancer effects; HTP-nc = Human toxicity - non-cancer effects; SQP = Soil quality (Dimensionless) consumption										
Remark	¹ The results for this environmental indicator should be used with caution, as the uncertainty surrounding the results is high or because there is limited experience with the indicator. ² This impact category primarily addresses the potential impact of low dose ionizing radiation on human health associated with nuclear fuel cycles. It does not take into account effects from possible nuclear accidents, occupational exposure or disposal of radioactive waste in underground facilities. Potential ionizing radiation from the soil, from radon and from certain building materials is also not measured by this indicator.										

Tabel 92 – Resource consumption, EN15804:2012+A2:2019 (LCI)

RESOURCE CONSUMPTION PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
PERE	[MJ]	4.81E+00	1.85E-02	1.55E+00	2.39E-03	1.12E-03	0.00E+00	2.39E-03	0.00E+00	2.06E-04	-2.41E+00
PERM	[MJ]	1.46E+00	0.00E+00	6.27E-01	0.00E+00	-2.21E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	[MJ]	6.27E+00	1.85E-02	2.18E+00	2.39E-03	-2.21E+00	0.00E+00	2.39E-03	0.00E+00	2.06E-04	-2.41E+00
PENRE	[MJ]	5.66E+01	1.20E+00	1.26E+01	1.55E-01	2.90E-01	0.00E+00	1.55E-01	0.00E+00	1.63E-02	-3.70E-01
PENRM	[MJ]	4.73E+00	0.00E+00	-2.26E-01	0.00E+00	-1.35E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	[MJ]	6.13E+01	1.20E+00	1.24E+01	1.55E-01	1.55E-01	0.00E+00	1.55E-01	0.00E+00	1.63E-02	-3.70E-01
SM	[kg]	1.20E-01	0.00E+00	0.00E+00	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	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	0.00E+00	0.00E+00
FW	[m ³]	3.17E-02	1.81E-04	1.51E-02	2.33E-05	1.64E-04	0.00E+00	2.33E-05	0.00E+00	-4.03E-05	-3.75E-04
Abbreviation	PERE = Consumption of renewable primary energy; PERM = Consumption of renewable primary energy resources used as raw materials; PERT = Total consumption of renewable primary energy resources; PENRE = Consumption of non-renewable primary energy; PENRM = Consumption of non-renewable primary energy resources used as raw materials; PENRT = Total consumption of non-renewable primary energy resources; SM = Consumption of secondary material; RSF = Consumption of renewable secondary fuel; NRSF = Consumption of non-renewable secondary fuel; FW = Net freshwater consumption										

Tabel 93 – End of life, EN15804:2012+A2:2019 (LCI)

WASTE CATEGORIES AND OUTPUT FLOWS PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
HWD	[kg]	6.76E-04	7.91E-06	4.31E-05	1.02E-06	2.64E-06	0.00E+00	1.02E-06	0.00E+00	1.04E-07	-3.35E-06
NHWD	[kg]	3.52E-01	1.03E-01	6.02E-02	1.33E-02	1.25E-02	0.00E+00	1.33E-02	0.00E+00	1.00E-01	-8.76E-03
RWD	[kg]	1.00E-04	3.62E-07	2.78E-05	4.67E-08	6.93E-07	0.00E+00	4.67E-08	0.00E+00	3.20E-09	-9.75E-07
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	0.00E+00	0.00E+00
MFR	[kg]	0.00E+00	0.00E+00	5.09E-02	0.00E+00	1.25E-01	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	0.00E+00	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	9.01E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EET	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.80E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Abbreviation	HWD = Hazardous Waste Disposed; NHWD = Non-Hazardous Waste Disposed; RWD = Radioactive Waste Disposed; CRU = Components for Recycling; MFR = Material for Recycling; MER = Material for Energy Recovery; EEE = Exported Electrical Energy; EET = Exported Thermal Energy										

Tabel 94 - Biogenic carbon at the factory gate

BIOGENIC CARBON PER KG		
Parameter	Unit	At the factory gate
Biogenic carbon content in the product	[kg C]	0.00E+00
Biogenic carbon content in the accompanying packaging	[kg C]	6.17E-02
Note	1 kg of biogenic carbon is equivalent to 44/12 kg of CO ₂	

RESULTS FOR GROUP 19 ACCORDING TO EN15804:2012+A2:2019

Tabel 95 – Potential environmental impacts, EN15804:2012+A2:2019 (LCIA)

ENVIRONMENTAL IMPACTS PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
GWP-total	[kg CO ₂ eq.]	3.60E+00	8.12E-02	9.59E-01	1.07E-02	2.87E-01	0.00E+00	1.07E-02	0.00E+00	1.84E-03	-2.22E-02
GWP-fossil	[kg CO ₂ eq.]	3.77E+00	8.12E-02	9.08E-01	1.07E-02	2.74E-02	0.00E+00	1.07E-02	0.00E+00	1.84E-03	-2.21E-02
GWP-biogenic	[kg CO ₂ eq.]	-1.77E-01	0.00E+00	5.06E-02	0.00E+00	2.59E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GWP-luluc	[kg CO ₂ eq.]	3.78E-03	2.80E-05	8.34E-04	3.67E-06	1.65E-05	0.00E+00	3.67E-06	0.00E+00	3.05E-07	-1.16E-04
ODP	[kg CFC 11 eq.]	5.39E-08	1.64E-09	1.70E-08	2.16E-10	3.60E-10	0.00E+00	2.16E-10	0.00E+00	2.03E-11	-5.12E-10
AP	[mol H ⁺ eq.]	3.35E-02	3.24E-04	2.77E-03	4.25E-05	1.54E-04	0.00E+00	4.25E-05	0.00E+00	4.78E-06	-1.57E-04
EP-freshwater	[kg P eq.]	1.68E-03	5.55E-06	2.96E-04	7.29E-07	5.74E-06	0.00E+00	7.29E-07	0.00E+00	5.44E-08	-8.75E-06
EP-marine	[kg N eq.]	4.13E-03	1.21E-04	6.33E-04	1.59E-05	5.87E-05	0.00E+00	1.59E-05	0.00E+00	3.05E-05	-5.34E-05
EP-terrestrial	[mol N eq.]	1.16E-01	1.32E-03	6.26E-03	1.73E-04	6.17E-04	0.00E+00	1.73E-04	0.00E+00	2.01E-05	-5.98E-04
POCP	[kg NMVOC eq.]	1.22E-02	5.11E-04	2.06E-03	6.70E-05	1.80E-04	0.00E+00	6.70E-05	0.00E+00	7.61E-06	-1.90E-04
ADPm ¹	[kg Sb eq.]	8.24E-05	2.20E-07	1.84E-06	2.89E-08	1.06E-07	0.00E+00	2.89E-08	0.00E+00	1.15E-09	-1.26E-07
ADPf ¹	[MJ]	6.25E+01	1.18E+00	1.27E+01	1.55E-01	2.74E-01	0.00E+00	1.55E-01	0.00E+00	1.65E-02	-3.45E-01
WDP ¹	[m ³ world eq. deprived]	8.89E-01	5.64E-03	1.51E-01	7.40E-04	2.44E-03	0.00E+00	7.40E-04	0.00E+00	5.03E-04	-3.82E-03
Abbreviation	GWP-total = Global warming, total; GWP-fossil = Global warming, fossil fuels; GWP-biogenic = Global warming, biogenic; GWP-luluc = Global warming, land use and land conversion; ODP = Ozone depletion; AP = Acidification; EP-freshwater = Eutrophication (nutrient loading) – freshwater; EP-marine = Eutrophication (nutrient loading) – marine; EP-terrestrial = Eutrophication (nutrient loading) – terrestrial; POCP = Photochemical ozone creation; ADPm = Depletion of abiotic resources – minerals and metals; ADPf = Depletion of abiotic fossil resources; WDP = Water consumption										
Remark	¹ The results for this environmental indicator should be used with caution, as the uncertainty surrounding the results is high or because there is limited experience with the indicator.										

Tabel 96 – Potential environmental impacts, EN15804:2012+A2:2019 (LCIA)

ENVIRONMENTAL IMPACTS PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
PM	[Disease incidence]	4.06E-07	8.25E-09	2.82E-08	1.08E-09	2.57E-09	0.00E+00	1.08E-09	0.00E+00	1.09E-10	-2.31E-09
IRP ²	[kBq U235 eq.]	3.79E-01	1.44E-03	1.09E-01	1.89E-04	2.55E-03	0.00E+00	1.89E-04	0.00E+00	1.39E-05	-3.74E-03
ETP-fw ¹	[CTUe]	1.53E+02	2.80E-01	2.39E+00	3.68E-02	2.15E-01	0.00E+00	3.68E-02	0.00E+00	5.88E-03	-1.62E-01
HTP-c ¹	[CTUh]	4.75E-07	5.05E-10	1.52E-09	6.63E-11	1.15E-10	0.00E+00	6.63E-11	0.00E+00	3.30E-12	-1.02E-10
HTP-nc ¹	[CTUh]	5.00E-08	7.63E-10	6.50E-09	1.00E-10	3.12E-10	0.00E+00	1.00E-10	0.00E+00	1.00E-11	-2.63E-10
SQP ¹	-	2.14E+01	1.19E+00	1.15E+01	1.56E-01	1.82E-01	0.00E+00	1.56E-01	0.00E+00	3.39E-02	-1.41E+01
Abbreviation	PM = Particulate matter; IRP = Ionizing radiation - human health; ETP-fw = Ecotoxicity - freshwater; HTP-c = Human toxicity - cancer effects; HTP-nc = Human toxicity - non-cancer effects; SQP = Soil quality (Dimensionless) consumption										
Remark	¹ The results for this environmental indicator should be used with caution, as the uncertainty surrounding the results is high or because there is limited experience with the indicator. ² This impact category primarily addresses the potential impact of low dose ionizing radiation on human health associated with nuclear fuel cycles. It does not take into account effects from possible nuclear accidents, occupational exposure or disposal of radioactive waste in underground facilities. Potential ionizing radiation from the soil, from radon and from certain building materials is also not measured by this indicator.										

Tabel 97 – Resource consumption, EN15804:2012+A2:2019 (LCI)

RESOURCE CONSUMPTION PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
PERE	[MJ]	4.71E+00	1.82E-02	1.50E+00	2.39E-03	9.76E-04	0.00E+00	2.39E-03	0.00E+00	2.17E-04	-2.28E+00
PERM	[MJ]	1.46E+00	0.00E+00	5.65E-01	0.00E+00	-2.10E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	[MJ]	6.17E+00	1.82E-02	2.06E+00	2.39E-03	-2.10E+00	0.00E+00	2.39E-03	0.00E+00	2.17E-04	-2.28E+00
PENRE	[MJ]	5.72E+01	1.18E+00	1.25E+01	1.55E-01	2.74E-01	0.00E+00	1.55E-01	0.00E+00	1.65E-02	-3.45E-01
PENRM	[MJ]	5.34E+00	0.00E+00	-2.45E-01	0.00E+00	-1.16E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	[MJ]	6.25E+01	1.18E+00	1.22E+01	1.55E-01	1.58E-01	0.00E+00	1.55E-01	0.00E+00	1.65E-02	-3.45E-01
SM	[kg]	1.39E-01	0.00E+00	0.00E+00	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	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	0.00E+00	0.00E+00
FW	[m ³]	3.11E-02	1.77E-04	1.50E-02	2.33E-05	1.55E-04	0.00E+00	2.33E-05	0.00E+00	-4.94E-05	-3.51E-04
Abbreviation	PERE = Consumption of renewable primary energy; PERM = Consumption of renewable primary energy resources used as raw materials; PERT = Total consumption of renewable primary energy resources; PENRE = Consumption of non-renewable primary energy; PENRM = Consumption of non-renewable primary energy resources used as raw materials; PENRT = Total consumption of non-renewable primary energy resources; SM = Consumption of secondary material; RSF = Consumption of renewable secondary fuel; NRSF = Consumption of non-renewable secondary fuel; FW = Net freshwater consumption										

Tabel 98 – End of life, EN15804:2012+A2:2019 (LCI)

WASTE CATEGORIES AND OUTPUT FLOWS PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
HWD	[kg]	6.63E-04	7.77E-06	4.17E-05	1.02E-06	2.50E-06	0.00E+00	1.02E-06	0.00E+00	1.05E-07	-3.09E-06
NHWD	[kg]	3.51E-01	1.01E-01	5.93E-02	1.33E-02	1.18E-02	0.00E+00	1.33E-02	0.00E+00	1.00E-01	-8.30E-03
RWD	[kg]	9.85E-05	3.56E-07	2.72E-05	4.67E-08	6.54E-07	0.00E+00	4.67E-08	0.00E+00	3.33E-09	-9.17E-07
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	0.00E+00	0.00E+00
MFR	[kg]	0.00E+00	0.00E+00	5.09E-02	0.00E+00	1.19E-01	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	0.00E+00	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	8.44E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EET	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.69E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Abbreviation	HWD = Hazardous Waste Disposed; NHWD = Non-Hazardous Waste Disposed; RWD = Radioactive Waste Disposed; CRU = Components for Recycling; MFR = Material for Recycling; MER = Material for Energy Recovery; EEE = Exported Electrical Energy; EET = Exported Thermal Energy										

Tabel 99 - Biogenic carbon at the factory gate

BIOGENIC CARBON PER KG		
Parameter	Unit	At the factory gate
Biogenic carbon content in the product	[kg C]	0.00E+00
Biogenic carbon content in the accompanying packaging	[kg C]	5.85E-02
Note	1 kg of biogenic carbon is equivalent to 44/12 kg of CO ₂	

RESULTS FOR GROUP 20 ACCORDING TO EN15804:2012+A2:2019

Tabel 100 – Potential environmental impacts, EN15804:2012+A2:2019 (LCIA)

ENVIRONMENTAL IMPACTS PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
GWP-total	[kg CO ₂ eq.]	3.50E+00	7.89E-02	9.62E-01	1.07E-02	2.84E-01	0.00E+00	1.07E-02	0.00E+00	2.10E-03	-2.27E-02
GWP-fossil	[kg CO ₂ eq.]	3.67E+00	7.88E-02	9.13E-01	1.07E-02	2.85E-02	0.00E+00	1.07E-02	0.00E+00	2.10E-03	-2.26E-02
GWP-biogenic	[kg CO ₂ eq.]	-1.77E-01	0.00E+00	4.77E-02	0.00E+00	2.55E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GWP-luluc	[kg CO ₂ eq.]	3.71E-03	2.72E-05	8.54E-04	3.67E-06	1.68E-05	0.00E+00	3.67E-06	0.00E+00	3.01E-07	-1.16E-04
ODP	[kg CFC 11 eq.]	5.29E-08	1.59E-09	1.71E-08	2.16E-10	3.66E-10	0.00E+00	2.16E-10	0.00E+00	2.07E-11	-5.27E-10
AP	[mol H ⁺ eq.]	3.24E-02	3.15E-04	2.80E-03	4.25E-05	1.58E-04	0.00E+00	4.25E-05	0.00E+00	4.85E-06	-1.60E-04
EP-freshwater	[kg P eq.]	1.63E-03	5.39E-06	2.98E-04	7.29E-07	5.86E-06	0.00E+00	7.29E-07	0.00E+00	5.49E-08	-8.92E-06
EP-marine	[kg N eq.]	4.03E-03	1.18E-04	6.39E-04	1.59E-05	6.00E-05	0.00E+00	1.59E-05	0.00E+00	3.68E-05	-5.45E-05
EP-terrestrial	[mol N eq.]	1.12E-01	1.28E-03	6.31E-03	1.73E-04	6.30E-04	0.00E+00	1.73E-04	0.00E+00	2.05E-05	-6.10E-04
POCP	[kg NMVOC eq.]	1.19E-02	4.96E-04	2.08E-03	6.70E-05	1.84E-04	0.00E+00	6.70E-05	0.00E+00	7.83E-06	-1.93E-04
ADPm ¹	[kg Sb eq.]	7.96E-05	2.14E-07	1.87E-06	2.89E-08	1.09E-07	0.00E+00	2.89E-08	0.00E+00	1.19E-09	-1.29E-07
ADPf ¹	[MJ]	6.45E+01	1.15E+00	1.28E+01	1.55E-01	2.79E-01	0.00E+00	1.55E-01	0.00E+00	1.67E-02	-3.55E-01
WDP ¹	[m ³ world eq. deprived]	8.66E-01	5.48E-03	1.54E-01	7.40E-04	2.50E-03	0.00E+00	7.40E-04	0.00E+00	4.67E-04	-3.96E-03
Abbreviation	GWP-total = Global warming, total; GWP-fossil = Global warming, fossil fuels; GWP-biogenic = Global warming, biogenic; GWP-luluc = Global warming, land use and land conversion; ODP = Ozone depletion; AP = Acidification; EP-freshwater = Eutrophication (nutrient loading) – freshwater; EP-marine = Eutrophication (nutrient loading) – marine; EP-terrestrial = Eutrophication (nutrient loading) – terrestrial; POCP = Photochemical ozone creation; ADPm = Depletion of abiotic resources – minerals and metals; ADPf = Depletion of abiotic fossil resources; WDP = Water consumption										
Remark	¹ The results for this environmental indicator should be used with caution, as the uncertainty surrounding the results is high or because there is limited experience with the indicator.										

Tabel 101 – Potential environmental impacts, EN15804:2012+A2:2019 (LCIA)

ENVIRONMENTAL IMPACTS PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
PM	[Disease incidence]	3.93E-07	8.02E-09	2.87E-08	1.08E-09	2.62E-09	0.00E+00	1.08E-09	0.00E+00	1.11E-10	-2.35E-09
IRP ²	[kBq U235 eq.]	3.71E-01	1.40E-03	1.10E-01	1.89E-04	2.60E-03	0.00E+00	1.89E-04	0.00E+00	1.48E-05	-3.82E-03
ETP-fw ¹	[CTUe]	1.48E+02	2.72E-01	2.42E+00	3.68E-02	2.21E-01	0.00E+00	3.68E-02	0.00E+00	6.70E-03	-1.65E-01
HTP-c ¹	[CTUh]	4.59E-07	4.90E-10	1.53E-09	6.63E-11	1.17E-10	0.00E+00	6.63E-11	0.00E+00	3.41E-12	-1.04E-10
HTP-nc ¹	[CTUh]	4.86E-08	7.41E-10	6.56E-09	1.00E-10	3.19E-10	0.00E+00	1.00E-10	0.00E+00	1.16E-11	-2.69E-10
SQP ¹	-	2.11E+01	1.16E+00	1.18E+01	1.56E-01	1.85E-01	0.00E+00	1.56E-01	0.00E+00	3.48E-02	-1.42E+01
Abbreviation	PM = Particulate matter; IRP = Ionizing radiation - human health; ETP-fw = Ecotoxicity - freshwater; HTP-c = Human toxicity - cancer effects; HTP-nc = Human toxicity - non-cancer effects; SQP = Soil quality (Dimensionless) consumption										
Remark	¹ The results for this environmental indicator should be used with caution, as the uncertainty surrounding the results is high or because there is limited experience with the indicator. ² This impact category primarily addresses the potential impact of low dose ionizing radiation on human health associated with nuclear fuel cycles. It does not take into account effects from possible nuclear accidents, occupational exposure or disposal of radioactive waste in underground facilities. Potential ionizing radiation from the soil, from radon and from certain building materials is also not measured by this indicator.										

Tabel 102 – Resource consumption, EN15804:2012+A2:2019 (LCI)

RESOURCE CONSUMPTION PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
PERE	[MJ]	4.57E+00	1.77E-02	1.52E+00	2.39E-03	1.06E-03	0.00E+00	2.39E-03	0.00E+00	2.35E-04	-2.30E+00
PERM	[MJ]	1.46E+00	0.00E+00	5.94E-01	0.00E+00	-2.09E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	[MJ]	6.03E+00	1.77E-02	2.12E+00	2.39E-03	-2.09E+00	0.00E+00	2.39E-03	0.00E+00	2.35E-04	-2.30E+00
PENRE	[MJ]	5.82E+01	1.15E+00	1.26E+01	1.55E-01	2.79E-01	0.00E+00	1.55E-01	0.00E+00	1.67E-02	-3.55E-01
PENRM	[MJ]	6.29E+00	0.00E+00	-2.32E-01	0.00E+00	-1.28E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	[MJ]	6.45E+01	1.15E+00	1.23E+01	1.55E-01	1.50E-01	0.00E+00	1.55E-01	0.00E+00	1.67E-02	-3.55E-01
SM	[kg]	1.69E-01	0.00E+00	0.00E+00	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	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	0.00E+00	0.00E+00
FW	[m ³]	3.03E-02	1.72E-04	1.51E-02	2.33E-05	1.59E-04	0.00E+00	2.33E-05	0.00E+00	-6.36E-05	-3.61E-04
Abbreviation	PERE = Consumption of renewable primary energy; PERM = Consumption of renewable primary energy resources used as raw materials; PERT = Total consumption of renewable primary energy resources; PENRE = Consumption of non-renewable primary energy; PENRM = Consumption of non-renewable primary energy resources used as raw materials; PENRT = Total consumption of non-renewable primary energy resources; SM = Consumption of secondary material; RSF = Consumption of renewable secondary fuel; NRSF = Consumption of non-renewable secondary fuel; FW = Net freshwater consumption										

Tabel 103 – End of life, EN15804:2012+A2:2019 (LCI)

WASTE CATEGORIES AND OUTPUT FLOWS PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
HWD	[kg]	6.43E-04	7.55E-06	4.26E-05	1.02E-06	2.55E-06	0.00E+00	1.02E-06	0.00E+00	1.07E-07	-3.22E-06
NHWD	[kg]	3.51E-01	9.83E-02	5.97E-02	1.33E-02	1.21E-02	0.00E+00	1.33E-02	0.00E+00	1.00E-01	-8.42E-03
RWD	[kg]	9.64E-05	3.45E-07	2.75E-05	4.67E-08	6.66E-07	0.00E+00	4.67E-08	0.00E+00	3.54E-09	-9.39E-07
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	0.00E+00	0.00E+00
MFR	[kg]	0.00E+00	0.00E+00	5.09E-02	0.00E+00	1.17E-01	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	0.00E+00	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	8.68E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EET	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.73E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Abbreviation	HWD = Hazardous Waste Disposed; NHWD = Non-Hazardous Waste Disposed; RWD = Radioactive Waste Disposed; CRU = Components for Recycling; MFR = Material for Recycling; MER = Material for Energy Recovery; EEE = Exported Electrical Energy; EET = Exported Thermal Energy										

Tabel 104 - Biogenic carbon at the factory gate

BIOGENIC CARBON PER KG		
Parameter	Unit	At the factory gate
Biogenic carbon content in the product	[kg C]	0.00E+00
Biogenic carbon content in the accompanying packaging	[kg C]	5.80E-02
Note	1 kg of biogenic carbon is equivalent to 44/12 kg of CO ₂	

RESULTS FOR GROUP 21 ACCORDING TO EN15804:2012+A2:2019

Tabel 105 – Potential environmental impacts, EN15804:2012+A2:2019 (LCIA)

ENVIRONMENTAL IMPACTS PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
GWP-total	[kg CO ₂ eq.]	3.41E+00	7.70E-02	9.64E-01	1.07E-02	3.01E-01	0.00E+00	1.07E-02	0.00E+00	2.32E-03	-2.40E-02
GWP-fossil	[kg CO ₂ eq.]	3.59E+00	7.69E-02	9.22E-01	1.07E-02	3.02E-02	0.00E+00	1.07E-02	0.00E+00	2.32E-03	-2.39E-02
GWP-biogenic	[kg CO ₂ eq.]	-1.77E-01	0.00E+00	4.08E-02	0.00E+00	2.71E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GWP-luluc	[kg CO ₂ eq.]	3.65E-03	2.65E-05	8.95E-04	3.67E-06	1.77E-05	0.00E+00	3.67E-06	0.00E+00	2.98E-07	-1.23E-04
ODP	[kg CFC 11 eq.]	5.20E-08	1.56E-09	1.74E-08	2.16E-10	3.86E-10	0.00E+00	2.16E-10	0.00E+00	2.11E-11	-5.58E-10
AP	[mol H ⁺ eq.]	3.15E-02	3.07E-04	2.85E-03	4.25E-05	1.66E-04	0.00E+00	4.25E-05	0.00E+00	4.91E-06	-1.69E-04
EP-freshwater	[kg P eq.]	1.59E-03	5.26E-06	3.02E-04	7.29E-07	6.18E-06	0.00E+00	7.29E-07	0.00E+00	5.53E-08	-9.43E-06
EP-marine	[kg N eq.]	3.94E-03	1.15E-04	6.50E-04	1.59E-05	6.32E-05	0.00E+00	1.59E-05	0.00E+00	4.20E-05	-5.75E-05
EP-terrestrial	[mol N eq.]	1.09E-01	1.25E-03	6.42E-03	1.73E-04	6.64E-04	0.00E+00	1.73E-04	0.00E+00	2.08E-05	-6.44E-04
POCP	[kg NMVOC eq.]	1.16E-02	4.84E-04	2.12E-03	6.70E-05	1.94E-04	0.00E+00	6.70E-05	0.00E+00	8.01E-06	-2.04E-04
ADPm ¹	[kg Sb eq.]	7.73E-05	2.09E-07	1.90E-06	2.89E-08	1.14E-07	0.00E+00	2.89E-08	0.00E+00	1.22E-09	-1.37E-07
ADPf ¹	[MJ]	6.61E+01	1.12E+00	1.29E+01	1.55E-01	2.94E-01	0.00E+00	1.55E-01	0.00E+00	1.69E-02	-3.75E-01
WDP ¹	[m ³ world eq. deprived]	8.44E-01	5.35E-03	1.57E-01	7.40E-04	2.63E-03	0.00E+00	7.40E-04	0.00E+00	4.37E-04	-4.20E-03
Abbreviation	GWP-total = Global warming, total; GWP-fossil = Global warming, fossil fuels; GWP-biogenic = Global warming, biogenic; GWP-luluc = Global warming, land use and land conversion; ODP = Ozone depletion; AP = Acidification; EP-freshwater = Eutrophication (nutrient loading) – freshwater; EP-marine = Eutrophication (nutrient loading) – marine; EP-terrestrial = Eutrophication (nutrient loading) – terrestrial; POCP = Photochemical ozone creation; ADPm = Depletion of abiotic resources – minerals and metals; ADPf = Depletion of abiotic fossil resources; WDP = Water consumption										
Remark	¹ The results for this environmental indicator should be used with caution, as the uncertainty surrounding the results is high or because there is limited experience with the indicator.										

Tabel 106 – Potential environmental impacts, EN15804:2012+A2:2019 (LCIA)

ENVIRONMENTAL IMPACTS PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
PM	[Disease incidence]	3.82E-07	7.82E-09	2.98E-08	1.08E-09	2.76E-09	0.00E+00	1.08E-09	0.00E+00	1.13E-10	-2.48E-09
IRP ²	[kBq U235 eq.]	3.63E-01	1.36E-03	1.12E-01	1.89E-04	2.74E-03	0.00E+00	1.89E-04	0.00E+00	1.55E-05	-4.04E-03
ETP-fw ¹	[CTUe]	1.43E+02	2.66E-01	2.46E+00	3.68E-02	2.32E-01	0.00E+00	3.68E-02	0.00E+00	7.38E-03	-1.75E-01
HTP-c ¹	[CTUh]	4.45E-07	4.79E-10	1.56E-09	6.63E-11	1.23E-10	0.00E+00	6.63E-11	0.00E+00	3.49E-12	-1.09E-10
HTP-nc ¹	[CTUh]	4.74E-08	7.23E-10	6.66E-09	1.00E-10	3.37E-10	0.00E+00	1.00E-10	0.00E+00	1.30E-11	-2.84E-10
SQP ¹	-	2.07E+01	1.13E+00	1.24E+01	1.56E-01	1.96E-01	0.00E+00	1.56E-01	0.00E+00	3.54E-02	-1.50E+01
Abbreviation	PM = Particulate matter; IRP = Ionizing radiation - human health; ETP-fw = Ecotoxicity - freshwater; HTP-c = Human toxicity - cancer effects; HTP-nc = Human toxicity - non-cancer effects; SQP = Soil quality (Dimensionless) consumption										
Remark	¹ The results for this environmental indicator should be used with caution, as the uncertainty surrounding the results is high or because there is limited experience with the indicator. ² This impact category primarily addresses the potential impact of low dose ionizing radiation on human health associated with nuclear fuel cycles. It does not take into account effects from possible nuclear accidents, occupational exposure or disposal of radioactive waste in underground facilities. Potential ionizing radiation from the soil, from radon and from certain building materials is also not measured by this indicator.										

Tabel 107 – Resource consumption, EN15804:2012+A2:2019 (LCI)

RESOURCE CONSUMPTION PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
PERE	[MJ]	4.45E+00	1.73E-02	1.57E+00	2.39E-03	1.14E-03	0.00E+00	2.39E-03	0.00E+00	2.49E-04	-2.43E+00
PERM	[MJ]	1.46E+00	0.00E+00	6.55E-01	0.00E+00	-2.21E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	[MJ]	5.91E+00	1.73E-02	2.23E+00	2.39E-03	-2.21E+00	0.00E+00	2.39E-03	0.00E+00	2.49E-04	-2.43E+00
PENRE	[MJ]	5.91E+01	1.12E+00	1.27E+01	1.55E-01	2.94E-01	0.00E+00	1.55E-01	0.00E+00	1.69E-02	-3.75E-01
PENRM	[MJ]	7.07E+00	0.00E+00	-2.23E-01	0.00E+00	-1.38E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	[MJ]	6.61E+01	1.12E+00	1.25E+01	1.55E-01	1.56E-01	0.00E+00	1.55E-01	0.00E+00	1.69E-02	-3.75E-01
SM	[kg]	1.94E-01	0.00E+00	0.00E+00	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	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	0.00E+00	0.00E+00
FW	[m ³]	2.96E-02	1.68E-04	1.52E-02	2.33E-05	1.67E-04	0.00E+00	2.33E-05	0.00E+00	-7.53E-05	-3.82E-04
Abbreviation	PERE = Consumption of renewable primary energy; PERM = Consumption of renewable primary energy resources used as raw materials; PERT = Total consumption of renewable primary energy resources; PENRE = Consumption of non-renewable primary energy; PENRM = Consumption of non-renewable primary energy resources used as raw materials; PENRT = Total consumption of non-renewable primary energy resources; SM = Consumption of secondary material; RSF = Consumption of renewable secondary fuel; NRSF = Consumption of non-renewable secondary fuel; FW = Net freshwater consumption										

Tabel 108 – End of life, EN15804:2012+A2:2019 (LCI)

WASTE CATEGORIES AND OUTPUT FLOWS PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
HWD	[kg]	6.27E-04	7.36E-06	4.36E-05	1.02E-06	2.69E-06	0.00E+00	1.02E-06	0.00E+00	1.09E-07	-3.41E-06
NHWD	[kg]	3.51E-01	9.59E-02	6.06E-02	1.33E-02	1.27E-02	0.00E+00	1.33E-02	0.00E+00	1.00E-01	-8.88E-03
RWD	[kg]	9.45E-05	3.37E-07	2.80E-05	4.67E-08	7.03E-07	0.00E+00	4.67E-08	0.00E+00	3.71E-09	-9.92E-07
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	0.00E+00	0.00E+00
MFR	[kg]	0.00E+00	0.00E+00	5.09E-02	0.00E+00	1.24E-01	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	0.00E+00	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	9.19E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EET	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.84E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Abbreviation	HWD = Hazardous Waste Disposed; NHWD = Non-Hazardous Waste Disposed; RWD = Radioactive Waste Disposed; CRU = Components for Recycling; MFR = Material for Recycling; MER = Material for Energy Recovery; EEE = Exported Electrical Energy; EET = Exported Thermal Energy										

Tabel 109 - Biogenic carbon at the factory gate

BIOGENIC CARBON PER KG		
Parameter	Unit	At the factory gate
Biogenic carbon content in the product	[kg C]	0.00E+00
Biogenic carbon content in the accompanying packaging	[kg C]	6.14E-02
Note	1 kg of biogenic carbon is equivalent to 44/12 kg of CO ₂	

RESULTS FOR GROUP 22 ACCORDING TO EN15804:2012+A2:2019

Tabel 110 – Potential environmental impacts, EN15804:2012+A2:2019 (LCIA)

ENVIRONMENTAL IMPACTS PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
GWP-total	[kg CO ₂ eq.]	3.32E+00	7.49E-02	9.62E-01	1.07E-02	3.02E-01	0.00E+00	1.07E-02	0.00E+00	2.55E-03	-2.36E-02
GWP-fossil	[kg CO ₂ eq.]	3.50E+00	7.49E-02	9.17E-01	1.07E-02	2.96E-02	0.00E+00	1.07E-02	0.00E+00	2.55E-03	-2.35E-02
GWP-biogenic	[kg CO ₂ eq.]	-1.77E-01	0.00E+00	4.40E-02	0.00E+00	2.73E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GWP-luluc	[kg CO ₂ eq.]	3.59E-03	2.58E-05	8.74E-04	3.67E-06	1.74E-05	0.00E+00	3.67E-06	0.00E+00	2.95E-07	-1.22E-04
ODP	[kg CFC 11 eq.]	5.11E-08	1.52E-09	1.72E-08	2.16E-10	3.79E-10	0.00E+00	2.16E-10	0.00E+00	2.15E-11	-5.47E-10
AP	[mol H ⁺ eq.]	3.06E-02	2.99E-04	2.82E-03	4.25E-05	1.63E-04	0.00E+00	4.25E-05	0.00E+00	4.98E-06	-1.66E-04
EP-freshwater	[kg P eq.]	1.55E-03	5.12E-06	3.00E-04	7.29E-07	6.06E-06	0.00E+00	7.29E-07	0.00E+00	5.58E-08	-9.26E-06
EP-marine	[kg N eq.]	3.84E-03	1.12E-04	6.44E-04	1.59E-05	6.19E-05	0.00E+00	1.59E-05	0.00E+00	4.75E-05	-5.64E-05
EP-terrestrial	[mol N eq.]	1.05E-01	1.22E-03	6.36E-03	1.73E-04	6.50E-04	0.00E+00	1.73E-04	0.00E+00	2.11E-05	-6.31E-04
POCP	[kg NMVOC eq.]	1.13E-02	4.71E-04	2.10E-03	6.70E-05	1.90E-04	0.00E+00	6.70E-05	0.00E+00	8.20E-06	-2.01E-04
ADPm ¹	[kg Sb eq.]	7.48E-05	2.03E-07	1.88E-06	2.89E-08	1.12E-07	0.00E+00	2.89E-08	0.00E+00	1.25E-09	-1.34E-07
ADPf ¹	[MJ]	6.79E+01	1.09E+00	1.29E+01	1.55E-01	2.89E-01	0.00E+00	1.55E-01	0.00E+00	1.72E-02	-3.69E-01
WDP ¹	[m ³ world eq. deprived]	8.20E-01	5.20E-03	1.55E-01	7.40E-04	2.57E-03	0.00E+00	7.40E-04	0.00E+00	4.04E-04	-4.11E-03
Abbreviation	GWP-total = Global warming, total; GWP-fossil = Global warming, fossil fuels; GWP-biogenic = Global warming, biogenic; GWP-luluc = Global warming, land use and land conversion; ODP = Ozone depletion; AP = Acidification; EP-freshwater = Eutrophication (nutrient loading) – freshwater; EP-marine = Eutrophication (nutrient loading) – marine; EP-terrestrial = Eutrophication (nutrient loading) – terrestrial; POCP = Photochemical ozone creation; ADPm = Depletion of abiotic resources – minerals and metals; ADPf = Depletion of abiotic fossil resources; WDP = Water consumption										
Remark	¹ The results for this environmental indicator should be used with caution, as the uncertainty surrounding the results is high or because there is limited experience with the indicator.										

Tabel 111 – Potential environmental impacts, EN15804:2012+A2:2019 (LCIA)

ENVIRONMENTAL IMPACTS PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
PM	[Disease incidence]	3.71E-07	7.62E-09	2.92E-08	1.08E-09	2.70E-09	0.00E+00	1.08E-09	0.00E+00	1.15E-10	-2.43E-09
IRP ²	[kBq U235 eq.]	3.55E-01	1.33E-03	1.11E-01	1.89E-04	2.69E-03	0.00E+00	1.89E-04	0.00E+00	1.63E-05	-3.96E-03
ETP-fw ¹	[CTUe]	1.39E+02	2.59E-01	2.44E+00	3.68E-02	2.27E-01	0.00E+00	3.68E-02	0.00E+00	8.11E-03	-1.71E-01
HTP-c ¹	[CTUh]	4.30E-07	4.66E-10	1.54E-09	6.63E-11	1.21E-10	0.00E+00	6.63E-11	0.00E+00	3.58E-12	-1.08E-10
HTP-nc ¹	[CTUh]	4.61E-08	7.04E-10	6.61E-09	1.00E-10	3.30E-10	0.00E+00	1.00E-10	0.00E+00	1.44E-11	-2.79E-10
SQP ¹	-	2.04E+01	1.10E+00	1.21E+01	1.56E-01	1.92E-01	0.00E+00	1.56E-01	0.00E+00	3.62E-02	-1.48E+01
Abbreviation	PM = Particulate matter; IRP = Ionizing radiation - human health; ETP-fw = Ecotoxicity - freshwater; HTP-c = Human toxicity - cancer effects; HTP-nc = Human toxicity - non-cancer effects; SQP = Soil quality (Dimensionless)r consumption										
Remark	¹ The results for this environmental indicator should be used with caution, as the uncertainty surrounding the results is high or because there is limited experience with the indicator. ² This impact category primarily addresses the potential impact of low dose ionizing radiation on human health associated with nuclear fuel cycles. It does not take into account effects from possible nuclear accidents, occupational exposure or disposal of radioactive waste in underground facilities. Potential ionizing radiation from the soil, from radon and from certain building materials is also not measured by this indicator.										

Tabel 112 – Resource consumption, EN15804:2012+A2:2019 (LCI)

RESOURCE CONSUMPTION PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
PERE	[MJ]	4.32E+00	1.68E-02	1.55E+00	2.39E-03	1.11E-03	0.00E+00	2.39E-03	0.00E+00	2.65E-04	-2.40E+00
PERM	[MJ]	1.46E+00	0.00E+00	6.23E-01	0.00E+00	-2.21E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	[MJ]	5.78E+00	1.68E-02	2.17E+00	2.39E-03	-2.21E+00	0.00E+00	2.39E-03	0.00E+00	2.65E-04	-2.40E+00
PENRE	[MJ]	6.00E+01	1.09E+00	1.26E+01	1.55E-01	2.89E-01	0.00E+00	1.55E-01	0.00E+00	1.72E-02	-3.69E-01
PENRM	[MJ]	7.91E+00	0.00E+00	-2.26E-01	0.00E+00	-1.34E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	[MJ]	6.79E+01	1.09E+00	1.24E+01	1.55E-01	1.55E-01	0.00E+00	1.55E-01	0.00E+00	1.72E-02	-3.69E-01
SM	[kg]	2.21E-01	0.00E+00	0.00E+00	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	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	0.00E+00	0.00E+00
FW	[m ³]	2.88E-02	1.64E-04	1.51E-02	2.33E-05	1.64E-04	0.00E+00	2.33E-05	0.00E+00	-8.79E-05	-3.74E-04
Abbreviation	PERE = Consumption of renewable primary energy; PERM = Consumption of renewable primary energy resources used as raw materials; PERT = Total consumption of renewable primary energy resources; PENRE = Consumption of non-renewable primary energy; PENRM = Consumption of non-renewable primary energy resources used as raw materials; PENRT = Total consumption of non-renewable primary energy resources; SM = Consumption of secondary material; RSF = Consumption of renewable secondary fuel; NRSF = Consumption of non-renewable secondary fuel; FW = Net freshwater consumption										

Tabel 113 – End of life, EN15804:2012+A2:2019 (LCI)

WASTE CATEGORIES AND OUTPUT FLOWS PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
HWD	[kg]	6.10E-04	7.17E-06	4.30E-05	1.02E-06	2.63E-06	0.00E+00	1.02E-06	0.00E+00	1.11E-07	-3.34E-06
NHWD	[kg]	3.50E-01	9.34E-02	6.02E-02	1.33E-02	1.25E-02	0.00E+00	1.33E-02	0.00E+00	1.00E-01	-8.74E-03
RWD	[kg]	9.25E-05	3.28E-07	2.77E-05	4.67E-08	6.91E-07	0.00E+00	4.67E-08	0.00E+00	3.89E-09	-9.72E-07
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	0.00E+00	0.00E+00
MFR	[kg]	0.00E+00	0.00E+00	5.09E-02	0.00E+00	1.25E-01	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	0.00E+00	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	8.99E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EET	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.79E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Abbreviation	HWD = Hazardous Waste Disposed; NHWD = Non-Hazardous Waste Disposed; RWD = Radioactive Waste Disposed; CRU = Components for Recycling; MFR = Material for Recycling; MER = Material for Energy Recovery; EEE = Exported Electrical Energy; EET = Exported Thermal Energy										

Tabel 114 - Biogenic carbon at the factory gate

BIOGENIC CARBON PER KG		
Parameter	Unit	At the factory gate
Biogenic carbon content in the product	[kg C]	0.00E+00
Biogenic carbon content in the accompanying packaging	[kg C]	6.15E-02
Note	1 kg of biogenic carbon is equivalent to 44/12 kg of CO ₂	

RESULTS FOR GROUP 23 ACCORDING TO EN15804:2012+A2:2019

Tabel 115 – Potential environmental impacts, EN15804:2012+A2:2019 (LCIA)

ENVIRONMENTAL IMPACTS PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
GWP-total	[kg CO ₂ eq.]	1.92E+00	4.13E-02	9.97E-01	1.07E-02	4.92E-01	0.00E+00	1.07E-02	0.00E+00	6.39E-03	-4.19E-02
GWP-fossil	[kg CO ₂ eq.]	2.09E+00	4.13E-02	1.06E+00	1.07E-02	5.39E-02	0.00E+00	1.07E-02	0.00E+00	6.39E-03	-4.16E-02
GWP-biogenic	[kg CO ₂ eq.]	-1.77E-01	0.00E+00	-6.34E-02	0.00E+00	4.38E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GWP-luluc	[kg CO ₂ eq.]	2.73E-03	1.42E-05	1.51E-03	3.67E-06	3.08E-05	0.00E+00	3.67E-06	0.00E+00	2.41E-07	-2.08E-04
ODP	[kg CFC 11 eq.]	3.78E-08	8.36E-10	2.06E-08	2.16E-10	6.71E-10	0.00E+00	2.16E-10	0.00E+00	2.85E-11	-9.82E-10
AP	[mol H ⁺ eq.]	1.55E-02	1.65E-04	3.59E-03	4.25E-05	2.91E-04	0.00E+00	4.25E-05	0.00E+00	6.08E-06	-2.96E-04
EP-freshwater	[kg P eq.]	8.55E-04	2.83E-06	3.62E-04	7.29E-07	1.08E-05	0.00E+00	7.29E-07	0.00E+00	6.35E-08	-1.64E-05
EP-marine	[kg N eq.]	2.30E-03	6.17E-05	8.16E-04	1.59E-05	1.11E-04	0.00E+00	1.59E-05	0.00E+00	1.39E-04	-1.00E-04
EP-terrestrial	[mol N eq.]	5.03E-02	6.72E-04	7.99E-03	1.73E-04	1.16E-03	0.00E+00	1.73E-04	0.00E+00	2.65E-05	-1.12E-03
POCP	[kg NMVOC eq.]	7.02E-03	2.60E-04	2.64E-03	6.70E-05	3.39E-04	0.00E+00	6.70E-05	0.00E+00	1.14E-05	-3.54E-04
ADPm ¹	[kg Sb eq.]	3.64E-05	1.12E-07	2.43E-06	2.89E-08	2.00E-07	0.00E+00	2.89E-08	0.00E+00	1.80E-09	-2.42E-07
ADPf ¹	[MJ]	9.79E+01	6.02E-01	1.53E+01	1.55E-01	5.10E-01	0.00E+00	1.55E-01	0.00E+00	2.08E-02	-6.59E-01
WDP ¹	[m ³ world eq. deprived]	5.35E-01	2.87E-03	2.15E-01	7.40E-04	4.63E-03	0.00E+00	7.40E-04	0.00E+00	-1.25E-04	-7.47E-03
Abbreviation	GWP-total = Global warming, total; GWP-fossil = Global warming, fossil fuels; GWP-biogenic = Global warming, biogenic; GWP-luluc = Global warming, land use and land conversion; ODP = Ozone depletion; AP = Acidification; EP-freshwater = Eutrophication (nutrient loading) – freshwater; EP-marine = Eutrophication (nutrient loading) – marine; EP-terrestrial = Eutrophication (nutrient loading) – terrestrial; POCP = Photochemical ozone creation; ADPm = Depletion of abiotic resources – minerals and metals; ADPf = Depletion of abiotic fossil resources; WDP = Water consumption										
Remark	¹ The results for this environmental indicator should be used with caution, as the uncertainty surrounding the results is high or because there is limited experience with the indicator.										

Tabel 116 – Potential environmental impacts, EN15804:2012+A2:2019 (LCIA)

ENVIRONMENTAL IMPACTS PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
PM	[Disease incidence]	1.90E-07	4.20E-09	4.60E-08	1.08E-09	4.82E-09	0.00E+00	1.08E-09	0.00E+00	1.42E-10	-4.33E-09
IRP ²	[kBq U235 eq.]	2.43E-01	7.32E-04	1.44E-01	1.89E-04	4.76E-03	0.00E+00	1.89E-04	0.00E+00	2.94E-05	-7.10E-03
ETP-fw ¹	[CTUe]	6.21E+01	1.43E-01	3.16E+00	3.68E-02	4.08E-01	0.00E+00	3.68E-02	0.00E+00	2.01E-02	-3.05E-01
HTP-c ¹	[CTUh]	1.85E-07	2.57E-10	1.96E-09	6.63E-11	2.14E-10	0.00E+00	6.63E-11	0.00E+00	5.10E-12	-1.89E-10
HTP-nc ¹	[CTUh]	2.58E-08	3.88E-10	8.26E-09	1.00E-10	5.92E-10	0.00E+00	1.00E-10	0.00E+00	3.78E-11	-4.99E-10
SQP ¹	-	1.51E+01	6.06E-01	2.11E+01	1.56E-01	3.40E-01	0.00E+00	1.56E-01	0.00E+00	4.81E-02	-2.56E+01
Abbreviation	PM = Particulate matter; IRP = Ionizing radiation - human health; ETP-fw = Ecotoxicity - freshwater; HTP-c = Human toxicity - cancer effects; HTP-nc = Human toxicity - non-cancer effects; SQP = Soil quality (Dimensionless)r consumption										
Remark	¹ The results for this environmental indicator should be used with caution, as the uncertainty surrounding the results is high or because there is limited experience with the indicator. ² This impact category primarily addresses the potential impact of low dose ionizing radiation on human health associated with nuclear fuel cycles. It does not take into account effects from possible nuclear accidents, occupational exposure or disposal of radioactive waste in underground facilities. Potential ionizing radiation from the soil, from radon and from certain building materials is also not measured by this indicator.										

Tabel 117 – Resource consumption, EN15804:2012+A2:2019 (LCI)

RESOURCE CONSUMPTION PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
PERE	[MJ]	2.39E+00	9.27E-03	2.37E+00	2.39E-03	2.15E-03	0.00E+00	2.39E-03	0.00E+00	5.21E-04	-4.10E+00
PERM	[MJ]	1.46E+00	0.00E+00	1.59E+00	0.00E+00	-3.67E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	[MJ]	3.86E+00	9.27E-03	3.96E+00	2.39E-03	-3.67E+00	0.00E+00	2.39E-03	0.00E+00	5.21E-04	-4.10E+00
PENRE	[MJ]	7.62E+01	6.02E-01	1.50E+01	1.55E-01	5.10E-01	0.00E+00	1.55E-01	0.00E+00	2.08E-02	-6.59E-01
PENRM	[MJ]	2.18E+01	0.00E+00	-9.62E-02	0.00E+00	-2.65E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	[MJ]	9.79E+01	6.02E-01	1.49E+01	1.55E-01	2.45E-01	0.00E+00	1.55E-01	0.00E+00	2.08E-02	-6.59E-01
SM	[kg]	6.62E-01	0.00E+00	0.00E+00	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	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	0.00E+00	0.00E+00
FW	[m ³]	1.82E-02	9.03E-05	1.73E-02	2.33E-05	2.93E-04	0.00E+00	2.33E-05	0.00E+00	-2.95E-04	-6.76E-04
Abbreviation	PERE = Consumption of renewable primary energy; PERM = Consumption of renewable primary energy resources used as raw materials; PERT = Total consumption of renewable primary energy resources; PENRE = Consumption of non-renewable primary energy; PENRM = Consumption of non-renewable primary energy resources used as raw materials; PENRT = Total consumption of non-renewable primary energy resources; SM = Consumption of secondary material; RSF = Consumption of renewable secondary fuel; NRSF = Consumption of non-renewable secondary fuel; FW = Net freshwater consumption										

Tabel 118 – End of life, EN15804:2012+A2:2019 (LCI)

WASTE CATEGORIES AND OUTPUT FLOWS PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
HWD	[kg]	3.33E-04	3.95E-06	5.92E-05	1.02E-06	4.70E-06	0.00E+00	1.02E-06	0.00E+00	1.38E-07	-6.11E-06
NHWD	[kg]	3.36E-01	5.15E-02	7.31E-02	1.33E-02	2.23E-02	0.00E+00	1.33E-02	0.00E+00	1.00E-01	-1.53E-02
RWD	[kg]	6.38E-05	1.81E-07	3.60E-05	4.67E-08	1.22E-06	0.00E+00	4.67E-08	0.00E+00	6.89E-09	-1.74E-06
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	0.00E+00	0.00E+00
MFR	[kg]	0.00E+00	0.00E+00	5.09E-02	0.00E+00	2.02E-01	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	0.00E+00	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	1.64E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EET	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.27E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Abbreviation	HWD = Hazardous Waste Disposed; NHWD = Non-Hazardous Waste Disposed; RWD = Radioactive Waste Disposed; CRU = Components for Recycling; MFR = Material for Recycling; MER = Material for Energy Recovery; EEE = Exported Electrical Energy; EET = Exported Thermal Energy										

Tabel 119 - Biogenic carbon at the factory gate

BIOGENIC CARBON PER KG		
Parameter	Unit	At the factory gate
Biogenic carbon content in the product	[kg C]	0.00E+00
Biogenic carbon content in the accompanying packaging	[kg C]	1.01E-01
Note	1 kg of biogenic carbon is equivalent to 44/12 kg of CO ₂	

RESULTS FOR GROUP 24 ACCORDING TO EN15804:2012+A2:2019

Tabel 120 – Potential environmental impacts, EN15804:2012+A2:2019 (LCIA)

ENVIRONMENTAL IMPACTS PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
GWP-total	[kg CO ₂ eq.]	1.74E+00	3.85E-02	9.98E-01	1.07E-02	5.66E-01	0.00E+00	1.07E-02	0.00E+00	6.71E-03	-4.55E-02
GWP-fossil	[kg CO ₂ eq.]	1.91E+00	3.85E-02	1.08E+00	1.07E-02	5.82E-02	0.00E+00	1.07E-02	0.00E+00	6.71E-03	-4.52E-02
GWP-biogenic	[kg CO ₂ eq.]	-1.77E-01	0.00E+00	-7.89E-02	0.00E+00	5.08E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GWP-luluc	[kg CO ₂ eq.]	2.54E-03	1.33E-05	1.60E-03	3.67E-06	3.34E-05	0.00E+00	3.67E-06	0.00E+00	2.36E-07	-2.32E-04
ODP	[kg CFC 11 eq.]	3.56E-08	7.78E-10	2.10E-08	2.16E-10	7.25E-10	0.00E+00	2.16E-10	0.00E+00	2.90E-11	-1.06E-09
AP	[mol H ⁺ eq.]	1.36E-02	1.53E-04	3.67E-03	4.25E-05	3.12E-04	0.00E+00	4.25E-05	0.00E+00	6.17E-06	-3.19E-04
EP-freshwater	[kg P eq.]	7.71E-04	2.63E-06	3.69E-04	7.29E-07	1.16E-05	0.00E+00	7.29E-07	0.00E+00	6.41E-08	-1.78E-05
EP-marine	[kg N eq.]	2.12E-03	5.74E-05	8.36E-04	1.59E-05	1.19E-04	0.00E+00	1.59E-05	0.00E+00	1.47E-04	-1.08E-04
EP-terrestrial	[mol N eq.]	4.51E-02	6.26E-04	8.18E-03	1.73E-04	1.25E-03	0.00E+00	1.73E-04	0.00E+00	2.70E-05	-1.21E-03
POCP	[kg NMVOC eq.]	6.46E-03	2.42E-04	2.70E-03	6.70E-05	3.64E-04	0.00E+00	6.70E-05	0.00E+00	1.17E-05	-3.85E-04
ADPm ¹	[kg Sb eq.]	3.14E-05	1.05E-07	2.50E-06	2.89E-08	2.15E-07	0.00E+00	2.89E-08	0.00E+00	1.85E-09	-2.60E-07
ADPf ¹	[MJ]	9.96E+01	5.61E-01	1.56E+01	1.55E-01	5.52E-01	0.00E+00	1.55E-01	0.00E+00	2.11E-02	-7.16E-01
WDP ¹	[m ³ world eq. deprived]	4.39E-01	2.67E-03	2.20E-01	7.40E-04	4.95E-03	0.00E+00	7.40E-04	0.00E+00	-1.70E-04	-8.07E-03
Abbreviation	GWP-total = Global warming, total; GWP-fossil = Global warming, fossil fuels; GWP-biogenic = Global warming, biogenic; GWP-luluc = Global warming, land use and land conversion; ODP = Ozone depletion; AP = Acidification; EP-freshwater = Eutrophication (nutrient loading) – freshwater; EP-marine = Eutrophication (nutrient loading) – marine; EP-terrestrial = Eutrophication (nutrient loading) – terrestrial; POCP = Photochemical ozone creation; ADPm = Depletion of abiotic resources – minerals and metals; ADPf = Depletion of abiotic fossil resources; WDP = Water consumption										
Remark	¹ The results for this environmental indicator should be used with caution, as the uncertainty surrounding the results is high or because there is limited experience with the indicator.										

Tabel 121 – Potential environmental impacts, EN15804:2012+A2:2019 (LCIA)

ENVIRONMENTAL IMPACTS PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
PM	[Disease incidence]	1.69E-07	3.91E-09	4.82E-08	1.08E-09	5.18E-09	0.00E+00	1.08E-09	0.00E+00	1.44E-10	-4.67E-09
IRP ²	[kBq U235 eq.]	2.22E-01	6.82E-04	1.47E-01	1.89E-04	5.16E-03	0.00E+00	1.89E-04	0.00E+00	3.05E-05	-7.64E-03
ETP-fw ¹	[CTUe]	5.51E+01	1.33E-01	3.24E+00	3.68E-02	4.36E-01	0.00E+00	3.68E-02	0.00E+00	2.11E-02	-3.29E-01
HTP-c ¹	[CTUh]	1.64E-07	2.39E-10	2.01E-09	6.63E-11	2.32E-10	0.00E+00	6.63E-11	0.00E+00	5.22E-12	-2.07E-10
HTP-nc ¹	[CTUh]	2.34E-08	3.62E-10	8.45E-09	1.00E-10	6.35E-10	0.00E+00	1.00E-10	0.00E+00	3.98E-11	-5.39E-10
SQP ¹	-	1.45E+01	5.65E-01	2.22E+01	1.56E-01	3.67E-01	0.00E+00	1.56E-01	0.00E+00	4.91E-02	-2.81E+01
Abbreviation	PM = Particulate matter; IRP = Ionizing radiation - human health; ETP-fw = Ecotoxicity - freshwater; HTP-c = Human toxicity - cancer effects; HTP-nc = Human toxicity - non-cancer effects; SQP = Soil quality (Dimensionless)r consumption										
Remark	¹ The results for this environmental indicator should be used with caution, as the uncertainty surrounding the results is high or because there is limited experience with the indicator. ² This impact category primarily addresses the potential impact of low dose ionizing radiation on human health associated with nuclear fuel cycles. It does not take into account effects from possible nuclear accidents, occupational exposure or disposal of radioactive waste in underground facilities. Potential ionizing radiation from the soil, from radon and from certain building materials is also not measured by this indicator.										

Tabel 122 – Resource consumption, EN15804:2012+A2:2019 (LCI)

RESOURCE CONSUMPTION PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
PERE	[MJ]	2.11E+00	8.63E-03	2.48E+00	2.39E-03	2.33E-03	0.00E+00	2.39E-03	0.00E+00	5.42E-04	-4.55E+00
PERM	[MJ]	1.46E+00	0.00E+00	1.71E+00	0.00E+00	-4.15E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	[MJ]	3.57E+00	8.63E-03	4.19E+00	2.39E-03	-4.14E+00	0.00E+00	2.39E-03	0.00E+00	5.42E-04	-4.55E+00
PENRE	[MJ]	7.67E+01	5.61E-01	1.52E+01	1.55E-01	5.52E-01	0.00E+00	1.55E-01	0.00E+00	2.11E-02	-7.16E-01
PENRM	[MJ]	2.29E+01	0.00E+00	-7.54E-02	0.00E+00	-2.85E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	[MJ]	9.96E+01	5.61E-01	1.51E+01	1.55E-01	2.67E-01	0.00E+00	1.55E-01	0.00E+00	2.11E-02	-7.16E-01
SM	[kg]	6.99E-01	0.00E+00	0.00E+00	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	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	0.00E+00	0.00E+00
FW	[m ³]	1.56E-02	8.41E-05	1.76E-02	2.33E-05	3.15E-04	0.00E+00	2.33E-05	0.00E+00	-3.12E-04	-7.26E-04
Abbreviation	PERE = Consumption of renewable primary energy; PERM = Consumption of renewable primary energy resources used as raw materials; PERT = Total consumption of renewable primary energy resources; PENRE = Consumption of non-renewable primary energy; PENRM = Consumption of non-renewable primary energy resources used as raw materials; PENRT = Total consumption of non-renewable primary energy resources; SM = Consumption of secondary material; RSF = Consumption of renewable secondary fuel; NRSF = Consumption of non-renewable secondary fuel; FW = Net freshwater consumption										

Tabel 123 – End of life, EN15804:2012+A2:2019 (LCI)

WASTE CATEGORIES AND OUTPUT FLOWS PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
HWD	[kg]	3.03E-04	3.68E-06	6.06E-05	1.02E-06	5.05E-06	0.00E+00	1.02E-06	0.00E+00	1.40E-07	-6.60E-06
NHWD	[kg]	3.31E-01	4.80E-02	7.47E-02	1.33E-02	2.40E-02	0.00E+00	1.33E-02	0.00E+00	1.00E-01	-1.67E-02
RWD	[kg]	5.85E-05	1.69E-07	3.69E-05	4.67E-08	1.32E-06	0.00E+00	4.67E-08	0.00E+00	7.14E-09	-1.88E-06
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	0.00E+00	0.00E+00
MFR	[kg]	0.00E+00	0.00E+00	5.09E-02	0.00E+00	2.33E-01	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	0.00E+00	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	1.75E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EET	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.50E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Abbreviation	HWD = Hazardous Waste Disposed; NHWD = Non-Hazardous Waste Disposed; RWD = Radioactive Waste Disposed; CRU = Components for Recycling; MFR = Material for Recycling; MER = Material for Energy Recovery; EEE = Exported Electrical Energy; EET = Exported Thermal Energy										

Tabel 124 - Biogenic carbon at the factory gate

BIOGENIC CARBON PER KG		
Parameter	Unit	At the factory gate
Biogenic carbon content in the product	[kg C]	0.00E+00
Biogenic carbon content in the accompanying packaging	[kg C]	1.15E-01
Note	1 kg of biogenic carbon is equivalent to 44/12 kg of CO ₂	

RESULTS FOR GROUP 25 ACCORDING TO EN15804:2012+A2:2019

Tabel 125 – Potential environmental impacts, EN15804:2012+A2:2019 (LCIA)

ENVIRONMENTAL IMPACTS PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
GWP-total	[kg CO ₂ eq.]	2.48E+00	8.98E-03	1.01E+00	1.07E-02	4.87E-01	0.00E+00	1.07E-02	0.00E+00	1.59E-04	-4.38E-02
GWP-fossil	[kg CO ₂ eq.]	2.66E+00	8.97E-03	1.07E+00	1.07E-02	6.13E-02	0.00E+00	1.07E-02	0.00E+00	1.59E-04	-4.36E-02
GWP-biogenic	[kg CO ₂ eq.]	-1.77E-01	0.00E+00	-6.47E-02	0.00E+00	4.26E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GWP-luluc	[kg CO ₂ eq.]	2.38E-03	3.09E-06	1.53E-03	3.67E-06	3.14E-05	0.00E+00	3.67E-06	0.00E+00	4.83E-09	-2.09E-04
ODP	[kg CFC 11 eq.]	1.73E-06	1.82E-10	2.09E-08	2.16E-10	6.81E-10	0.00E+00	2.16E-10	0.00E+00	5.62E-13	-1.06E-09
AP	[mol H ⁺ eq.]	9.73E-03	3.58E-05	3.64E-03	4.25E-05	2.95E-04	0.00E+00	4.25E-05	0.00E+00	1.17E-07	-3.05E-04
EP-freshwater	[kg P eq.]	5.38E-04	6.14E-07	3.66E-04	7.29E-07	1.10E-05	0.00E+00	7.29E-07	0.00E+00	1.25E-09	-1.70E-05
EP-marine	[kg N eq.]	1.79E-03	1.34E-05	8.27E-04	1.59E-05	1.12E-04	0.00E+00	1.59E-05	0.00E+00	3.51E-07	-1.02E-04
EP-terrestrial	[mol N eq.]	1.75E-02	1.46E-04	8.10E-03	1.73E-04	1.18E-03	0.00E+00	1.73E-04	0.00E+00	5.16E-07	-1.15E-03
POCP	[kg NMVOC eq.]	1.40E-02	5.65E-05	2.70E-03	6.70E-05	3.44E-04	0.00E+00	6.70E-05	0.00E+00	2.32E-07	-3.65E-04
ADPm ¹	[kg Sb eq.]	2.27E-05	2.44E-08	2.51E-06	2.89E-08	2.05E-07	0.00E+00	2.89E-08	0.00E+00	3.52E-11	-2.60E-07
ADPf ¹	[MJ]	8.07E+01	1.31E-01	1.56E+01	1.55E-01	5.18E-01	0.00E+00	1.55E-01	0.00E+00	4.11E-04	-7.13E-01
WDP ¹	[m ³ world eq. deprived]	1.17E+00	6.23E-04	2.21E-01	7.40E-04	4.75E-03	0.00E+00	7.40E-04	0.00E+00	-2.09E-06	-8.37E-03
Abbreviation	GWP-total = Global warming, total; GWP-fossil = Global warming, fossil fuels; GWP-biogenic = Global warming, biogenic; GWP-luluc = Global warming, land use and land conversion; ODP = Ozone depletion; AP = Acidification; EP-freshwater = Eutrophication (nutrient loading) – freshwater; EP-marine = Eutrophication (nutrient loading) – marine; EP-terrestrial = Eutrophication (nutrient loading) – terrestrial; POCP = Photochemical ozone creation; ADPm = Depletion of abiotic resources – minerals and metals; ADPf = Depletion of abiotic fossil resources; WDP = Water consumption										
Remark	¹ The results for this environmental indicator should be used with caution, as the uncertainty surrounding the results is high or because there is limited experience with the indicator.										

Tabel 126 – Potential environmental impacts, EN15804:2012+A2:2019 (LCIA)

ENVIRONMENTAL IMPACTS PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
PM	[Disease incidence]	7.68E-08	9.12E-10	4.67E-08	1.08E-09	4.87E-09	0.00E+00	1.08E-09	0.00E+00	2.81E-12	-4.42E-09
IRP ²	[kBq U235 eq.]	2.00E-01	1.59E-04	1.45E-01	1.89E-04	4.85E-03	0.00E+00	1.89E-04	0.00E+00	5.25E-07	-7.39E-03
ETP-fw ¹	[CTUe]	1.48E+01	3.10E-02	3.24E+00	3.68E-02	4.15E-01	0.00E+00	3.68E-02	0.00E+00	9.90E-05	-3.14E-01
HTP-c ¹	[CTUh]	1.00E-08	5.58E-11	2.00E-09	6.63E-11	2.18E-10	0.00E+00	6.63E-11	0.00E+00	9.88E-14	-1.97E-10
HTP-nc ¹	[CTUh]	2.25E-08	8.44E-11	8.36E-09	1.00E-10	6.04E-10	0.00E+00	1.00E-10	0.00E+00	4.84E-13	-5.22E-10
SQP ¹	-	1.22E+01	1.32E-01	2.12E+01	1.56E-01	3.44E-01	0.00E+00	1.56E-01	0.00E+00	9.52E-04	-2.55E+01
Abbreviation	PM = Particulate matter; IRP = Ionizing radiation - human health; ETP-fw = Ecotoxicity - freshwater; HTP-c = Human toxicity - cancer effects; HTP-nc = Human toxicity - non-cancer effects; SQP = Soil quality (Dimensionless) consumption										
Remark	¹ The results for this environmental indicator should be used with caution, as the uncertainty surrounding the results is high or because there is limited experience with the indicator. ² This impact category primarily addresses the potential impact of low dose ionizing radiation on human health associated with nuclear fuel cycles. It does not take into account effects from possible nuclear accidents, occupational exposure or disposal of radioactive waste in underground facilities. Potential ionizing radiation from the soil, from radon and from certain building materials is also not measured by this indicator.										

Tabel 127 – Resource consumption, EN15804:2012+A2:2019 (LCI)

RESOURCE CONSUMPTION PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
PERE	[MJ]	1.41E+00	2.01E-03	2.40E+00	2.39E-03	3.00E-03	0.00E+00	2.39E-03	0.00E+00	9.24E-06	-4.09E+00
PERM	[MJ]	1.46E+00	0.00E+00	1.60E+00	0.00E+00	-3.60E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	[MJ]	2.87E+00	2.01E-03	4.00E+00	2.39E-03	-3.59E+00	0.00E+00	2.39E-03	0.00E+00	9.24E-06	-4.09E+00
PENRE	[MJ]	4.70E+01	1.31E-01	1.51E+01	1.55E-01	5.18E-01	0.00E+00	1.55E-01	0.00E+00	4.11E-04	-7.13E-01
PENRM	[MJ]	3.37E+01	0.00E+00	2.46E-02	0.00E+00	-3.85E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	[MJ]	8.07E+01	1.31E-01	1.52E+01	1.55E-01	1.33E-01	0.00E+00	1.55E-01	0.00E+00	4.11E-04	-7.13E-01
SM	[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	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	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	0.00E+00	0.00E+00
FW	[m ³]	1.76E-02	1.96E-05	1.75E-02	2.33E-05	2.99E-04	0.00E+00	2.33E-05	0.00E+00	-5.73E-06	-7.18E-04
Abbreviation	PERE = Consumption of renewable primary energy; PERM = Consumption of renewable primary energy resources used as raw materials; PERT = Total consumption of renewable primary energy resources; PENRE = Consumption of non-renewable primary energy; PENRM = Consumption of non-renewable primary energy resources used as raw materials; PENRT = Total consumption of non-renewable primary energy resources; SM = Consumption of secondary material; RSF = Consumption of renewable secondary fuel; NRSF = Consumption of non-renewable secondary fuel; FW = Net freshwater consumption										

Tabel 128 – End of life, EN15804:2012+A2:2019 (LCI)

WASTE CATEGORIES AND OUTPUT FLOWS PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
HWD	[kg]	1.57E-03	8.59E-07	6.35E-05	1.02E-06	4.77E-06	0.00E+00	1.02E-06	0.00E+00	2.72E-09	-7.04E-06
NHWD	[kg]	1.44E-01	1.12E-02	7.39E-02	1.33E-02	2.26E-02	0.00E+00	1.33E-02	0.00E+00	2.00E-03	-1.55E-02
RWD	[kg]	5.25E-05	3.93E-08	3.64E-05	4.67E-08	1.24E-06	0.00E+00	4.67E-08	0.00E+00	1.24E-10	-1.81E-06
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	0.00E+00	0.00E+00
MFR	[kg]	0.00E+00	0.00E+00	5.09E-02	0.00E+00	1.98E-01	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	0.00E+00	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	1.74E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EET	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.46E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Abbreviation	HWD = Hazardous Waste Disposed; NHWD = Non-Hazardous Waste Disposed; RWD = Radioactive Waste Disposed; CRU = Components for Recycling; MFR = Material for Recycling; MER = Material for Energy Recovery; EEE = Exported Electrical Energy; EET = Exported Thermal Energy										

Tabel 129 - Biogenic carbon at the factory gate

BIOGENIC CARBON PER KG		
Parameter	Unit	At the factory gate
Biogenic carbon content in the product	[kg C]	0.00E+00
Biogenic carbon content in the accompanying packaging	[kg C]	9.91E-02
Note	1 kg of biogenic carbon is equivalent to 44/12 kg of CO ₂	

RESULTS FOR GROUP 26 ACCORDING TO EN15804:2012+A2:2019

Tabel 130 – Potential environmental impacts, EN15804:2012+A2:2019 (LCIA)

ENVIRONMENTAL IMPACTS PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
GWP-total	[kg CO ₂ eq.]	2.42E+00	8.98E-03	1.03E+00	1.07E-02	6.07E-01	0.00E+00	1.07E-02	0.00E+00	1.59E-04	-5.52E-02
GWP-fossil	[kg CO ₂ eq.]	2.60E+00	8.97E-03	1.16E+00	1.07E-02	7.83E-02	0.00E+00	1.07E-02	0.00E+00	1.59E-04	-5.50E-02
GWP-biogenic	[kg CO ₂ eq.]	-1.77E-01	0.00E+00	-1.26E-01	0.00E+00	5.28E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GWP-luluc	[kg CO ₂ eq.]	2.33E-03	3.09E-06	1.90E-03	3.67E-06	3.94E-05	0.00E+00	3.67E-06	0.00E+00	4.83E-09	-2.61E-04
ODP	[kg CFC 11 eq.]	1.22E-07	1.82E-10	2.29E-08	2.16E-10	8.53E-10	0.00E+00	2.16E-10	0.00E+00	5.62E-13	-1.35E-09
AP	[mol H ⁺ eq.]	8.72E-03	3.58E-05	4.08E-03	4.25E-05	3.69E-04	0.00E+00	4.25E-05	0.00E+00	1.17E-07	-3.83E-04
EP-freshwater	[kg P eq.]	5.19E-04	6.14E-07	4.02E-04	7.29E-07	1.37E-05	0.00E+00	7.29E-07	0.00E+00	1.25E-09	-2.14E-05
EP-marine	[kg N eq.]	1.72E-03	1.34E-05	9.28E-04	1.59E-05	1.41E-04	0.00E+00	1.59E-05	0.00E+00	3.51E-07	-1.28E-04
EP-terrestrial	[mol N eq.]	1.71E-02	1.46E-04	9.06E-03	1.73E-04	1.48E-03	0.00E+00	1.73E-04	0.00E+00	5.16E-07	-1.44E-03
POCP	[kg NMVOC eq.]	1.37E-02	5.65E-05	3.03E-03	6.70E-05	4.30E-04	0.00E+00	6.70E-05	0.00E+00	2.32E-07	-4.58E-04
ADPm ¹	[kg Sb eq.]	2.20E-05	2.44E-08	2.85E-06	2.89E-08	2.57E-07	0.00E+00	2.89E-08	0.00E+00	3.52E-11	-3.29E-07
ADPf ¹	[MJ]	7.96E+01	1.31E-01	1.71E+01	1.55E-01	6.49E-01	0.00E+00	1.55E-01	0.00E+00	4.11E-04	-9.04E-01
WDP ¹	[m ³ world eq. deprived]	1.21E+00	6.23E-04	2.57E-01	7.40E-04	5.96E-03	0.00E+00	7.40E-04	0.00E+00	-2.09E-06	-1.07E-02
Abbreviation	GWP-total = Global warming, total; GWP-fossil = Global warming, fossil fuels; GWP-biogenic = Global warming, biogenic; GWP-luluc = Global warming, land use and land conversion; ODP = Ozone depletion; AP = Acidification; EP-freshwater = Eutrophication (nutrient loading) – freshwater; EP-marine = Eutrophication (nutrient loading) – marine; EP-terrestrial = Eutrophication (nutrient loading) – terrestrial; POCP = Photochemical ozone creation; ADPm = Depletion of abiotic resources – minerals and metals; ADPf = Depletion of abiotic fossil resources; WDP = Water consumption										
Remark	¹ The results for this environmental indicator should be used with caution, as the uncertainty surrounding the results is high or because there is limited experience with the indicator.										

Tabel 131 – Potential environmental impacts, EN15804:2012+A2:2019 (LCIA)

ENVIRONMENTAL IMPACTS PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
PM	[Disease incidence]	6.85E-08	9.12E-10	5.64E-08	1.08E-09	6.10E-09	0.00E+00	1.08E-09	0.00E+00	2.81E-12	-5.54E-09
IRP ²	[kBq U235 eq.]	1.92E-01	1.59E-04	1.64E-01	1.89E-04	6.08E-03	0.00E+00	1.89E-04	0.00E+00	5.25E-07	-9.32E-03
ETP-fw ¹	[CTUe]	9.91E+00	3.10E-02	3.68E+00	3.68E-02	5.21E-01	0.00E+00	3.68E-02	0.00E+00	9.90E-05	-3.94E-01
HTP-c ¹	[CTUh]	9.49E-09	5.58E-11	2.25E-09	6.63E-11	2.74E-10	0.00E+00	6.63E-11	0.00E+00	9.88E-14	-2.48E-10
HTP-nc ¹	[CTUh]	2.19E-08	8.44E-11	9.34E-09	1.00E-10	7.60E-10	0.00E+00	1.00E-10	0.00E+00	4.84E-13	-6.59E-10
SQP ¹	-	1.21E+01	1.32E-01	2.63E+01	1.56E-01	4.31E-01	0.00E+00	1.56E-01	0.00E+00	9.52E-04	-3.19E+01
Abbreviation	PM = Particulate matter; IRP = Ionizing radiation - human health; ETP-fw = Ecotoxicity - freshwater; HTP-c = Human toxicity - cancer effects; HTP-nc = Human toxicity - non-cancer effects; SQP = Soil quality (Dimensionless)r consumption										
Remark	¹ The results for this environmental indicator should be used with caution, as the uncertainty surrounding the results is high or because there is limited experience with the indicator. ² This impact category primarily addresses the potential impact of low dose ionizing radiation on human health associated with nuclear fuel cycles. It does not take into account effects from possible nuclear accidents, occupational exposure or disposal of radioactive waste in underground facilities. Potential ionizing radiation from the soil, from radon and from certain building materials is also not measured by this indicator.										

Tabel 132 – Resource consumption, EN15804:2012+A2:2019 (LCI)

RESOURCE CONSUMPTION PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
PERE	[MJ]	1.33E+00	2.01E-03	2.88E+00	2.39E-03	3.94E-03	0.00E+00	2.39E-03	0.00E+00	9.24E-06	-5.10E+00
PERM	[MJ]	1.46E+00	0.00E+00	2.15E+00	0.00E+00	-4.48E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	[MJ]	2.79E+00	2.01E-03	5.03E+00	2.39E-03	-4.47E+00	0.00E+00	2.39E-03	0.00E+00	9.24E-06	-5.10E+00
PENRE	[MJ]	4.59E+01	1.31E-01	1.65E+01	1.55E-01	6.49E-01	0.00E+00	1.55E-01	0.00E+00	4.11E-04	-9.04E-01
PENRM	[MJ]	3.37E+01	0.00E+00	1.49E-01	0.00E+00	-5.10E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	[MJ]	7.96E+01	1.31E-01	1.67E+01	1.55E-01	1.39E-01	0.00E+00	1.55E-01	0.00E+00	4.11E-04	-9.04E-01
SM	[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	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	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	0.00E+00	0.00E+00
FW	[m ³]	1.69E-02	1.96E-05	1.88E-02	2.33E-05	3.75E-04	0.00E+00	2.33E-05	0.00E+00	-5.73E-06	-9.10E-04
Abbreviation	PERE = Consumption of renewable primary energy; PERM = Consumption of renewable primary energy resources used as raw materials; PERT = Total consumption of renewable primary energy resources; PENRE = Consumption of non-renewable primary energy; PENRM = Consumption of non-renewable primary energy resources used as raw materials; PENRT = Total consumption of non-renewable primary energy resources; SM = Consumption of secondary material; RSF = Consumption of renewable secondary fuel; NRSF = Consumption of non-renewable secondary fuel; FW = Net freshwater consumption										

Tabel 133 – End of life, EN15804:2012+A2:2019 (LCI)

WASTE CATEGORIES AND OUTPUT FLOWS PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
HWD	[kg]	1.55E-03	8.59E-07	7.43E-05	1.02E-06	5.98E-06	0.00E+00	1.02E-06	0.00E+00	2.72E-09	-9.02E-06
NHWD	[kg]	1.59E-01	1.12E-02	8.16E-02	1.33E-02	2.84E-02	0.00E+00	1.33E-02	0.00E+00	2.00E-03	-1.93E-02
RWD	[kg]	5.05E-05	3.93E-08	4.12E-05	4.67E-08	1.56E-06	0.00E+00	4.67E-08	0.00E+00	1.24E-10	-2.28E-06
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	0.00E+00	0.00E+00
MFR	[kg]	0.00E+00	0.00E+00	5.09E-02	0.00E+00	2.45E-01	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	0.00E+00	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	2.21E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EET	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.40E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Abbreviation	HWD = Hazardous Waste Disposed; NHWD = Non-Hazardous Waste Disposed; RWD = Radioactive Waste Disposed; CRU = Components for Recycling; MFR = Material for Recycling; MER = Material for Energy Recovery; EEE = Exported Electrical Energy; EET = Exported Thermal Energy										

Tabel 134 - Biogenic carbon at the factory gate

BIOGENIC CARBON PER KG		
Parameter	Unit	At the factory gate
Biogenic carbon content in the product	[kg C]	0.00E+00
Biogenic carbon content in the accompanying packaging	[kg C]	1.23E-01
Note	1 kg of biogenic carbon is equivalent to 44/12 kg of CO ₂	

RESULTS FOR GROUP 27 ACCORDING TO EN15804:2012+A2:2019

Tabel 135 – Potential environmental impacts, EN15804:2012+A2:2019 (LCIA)

ENVIRONMENTAL IMPACTS PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
GWP-total	[kg CO ₂ eq.]	7.55E-01	6.01E-03	1.01E+00	1.07E-02	5.99E-01	0.00E+00	1.07E-02	0.00E+00	9.21E-03	-5.10E-02
GWP-fossil	[kg CO ₂ eq.]	9.31E-01	6.01E-03	1.12E+00	1.07E-02	6.72E-02	0.00E+00	1.07E-02	0.00E+00	9.21E-03	-5.07E-02
GWP-biogenic	[kg CO ₂ eq.]	-1.77E-01	0.00E+00	-1.11E-01	0.00E+00	5.31E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GWP-luluc	[kg CO ₂ eq.]	1.89E-03	2.07E-06	1.80E-03	3.67E-06	3.74E-05	0.00E+00	3.67E-06	0.00E+00	2.00E-07	-2.52E-04
ODP	[kg CFC 11 eq.]	2.42E-08	1.22E-10	2.20E-08	2.16E-10	8.12E-10	0.00E+00	2.16E-10	0.00E+00	3.36E-11	-1.21E-09
AP	[mol H ⁺ eq.]	3.54E-03	2.40E-05	3.91E-03	4.25E-05	3.51E-04	0.00E+00	4.25E-05	0.00E+00	6.89E-06	-3.59E-04
EP-freshwater	[kg P eq.]	3.01E-04	4.11E-07	3.89E-04	7.29E-07	1.30E-05	0.00E+00	7.29E-07	0.00E+00	6.92E-08	-1.99E-05
EP-marine	[kg N eq.]	1.08E-03	8.98E-06	8.90E-04	1.59E-05	1.34E-04	0.00E+00	1.59E-05	0.00E+00	2.09E-04	-1.21E-04
EP-terrestrial	[mol N eq.]	9.03E-03	9.78E-05	8.69E-03	1.73E-04	1.40E-03	0.00E+00	1.73E-04	0.00E+00	3.05E-05	-1.36E-03
POCP	[kg NMVOC eq.]	3.37E-03	3.78E-05	2.88E-03	6.70E-05	4.10E-04	0.00E+00	6.70E-05	0.00E+00	1.38E-05	-4.30E-04
ADPm ¹	[kg Sb eq.]	5.43E-06	1.63E-08	2.68E-06	2.89E-08	2.43E-07	0.00E+00	2.89E-08	0.00E+00	2.21E-09	-2.96E-07
ADPf ¹	[MJ]	1.19E+02	8.76E-02	1.64E+01	1.55E-01	6.18E-01	0.00E+00	1.55E-01	0.00E+00	2.35E-02	-8.10E-01
WDP ¹	[m ³ world eq. deprived]	2.00E-01	4.18E-04	2.40E-01	7.40E-04	5.60E-03	0.00E+00	7.40E-04	0.00E+00	-5.19E-04	-9.25E-03
Abbreviation	GWP-total = Global warming, total; GWP-fossil = Global warming, fossil fuels; GWP-biogenic = Global warming, biogenic; GWP-luluc = Global warming, land use and land conversion; ODP = Ozone depletion; AP = Acidification; EP-freshwater = Eutrophication (nutrient loading) – freshwater; EP-marine = Eutrophication (nutrient loading) – marine; EP-terrestrial = Eutrophication (nutrient loading) – terrestrial; POCP = Photochemical ozone creation; ADPm = Depletion of abiotic resources – minerals and metals; ADPf = Depletion of abiotic fossil resources; WDP = Water consumption										
Remark	¹ The results for this environmental indicator should be used with caution, as the uncertainty surrounding the results is high or because there is limited experience with the indicator.										

Tabel 136 – Potential environmental impacts, EN15804:2012+A2:2019 (LCIA)

ENVIRONMENTAL IMPACTS PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
PM	[Disease incidence]	4.76E-08	6.11E-10	5.35E-08	1.08E-09	5.82E-09	0.00E+00	1.08E-09	0.00E+00	1.62E-10	-5.24E-09
IRP ²	[kBq U235 eq.]	1.38E-01	1.07E-04	1.57E-01	1.89E-04	5.78E-03	0.00E+00	1.89E-04	0.00E+00	3.91E-05	-8.60E-03
ETP-fw ¹	[CTUe]	5.33E+00	2.08E-02	3.48E+00	3.68E-02	4.93E-01	0.00E+00	3.68E-02	0.00E+00	2.92E-02	-3.70E-01
HTP-c ¹	[CTUh]	5.70E-09	3.74E-11	2.14E-09	6.63E-11	2.59E-10	0.00E+00	6.63E-11	0.00E+00	6.22E-12	-2.31E-10
HTP-nc ¹	[CTUh]	9.75E-09	5.65E-11	8.97E-09	1.00E-10	7.13E-10	0.00E+00	1.00E-10	0.00E+00	5.54E-11	-6.06E-10
SQP ¹	-	1.08E+01	8.82E-02	2.50E+01	1.56E-01	4.11E-01	0.00E+00	1.56E-01	0.00E+00	5.70E-02	-3.10E+01
Abbreviation	PM = Particulate matter; IRP = Ionizing radiation - human health; ETP-fw = Ecotoxicity - freshwater; HTP-c = Human toxicity - cancer effects; HTP-nc = Human toxicity - non-cancer effects; SQP = Soil quality (Dimensionless) consumption										
Remark	¹ The results for this environmental indicator should be used with caution, as the uncertainty surrounding the results is high or because there is limited experience with the indicator. ² This impact category primarily addresses the potential impact of low dose ionizing radiation on human health associated with nuclear fuel cycles. It does not take into account effects from possible nuclear accidents, occupational exposure or disposal of radioactive waste in underground facilities. Potential ionizing radiation from the soil, from radon and from certain building materials is also not measured by this indicator.										

Tabel 137 – Resource consumption, EN15804:2012+A2:2019 (LCI)

RESOURCE CONSUMPTION PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
PERE	[MJ]	7.44E-01	1.35E-03	2.74E+00	2.39E-03	2.83E-03	0.00E+00	2.39E-03	0.00E+00	7.11E-04	-4.97E+00
PERM	[MJ]	1.46E+00	0.00E+00	2.00E+00	0.00E+00	-4.42E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	[MJ]	2.21E+00	1.35E-03	4.74E+00	2.39E-03	-4.42E+00	0.00E+00	2.39E-03	0.00E+00	7.11E-04	-4.97E+00
PENRE	[MJ]	8.69E+01	8.76E-02	1.60E+01	1.55E-01	6.18E-01	0.00E+00	1.55E-01	0.00E+00	2.35E-02	-8.10E-01
PENRM	[MJ]	3.19E+01	0.00E+00	-7.06E-03	0.00E+00	-3.54E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	[MJ]	1.19E+02	8.76E-02	1.59E+01	1.55E-01	2.64E-01	0.00E+00	1.55E-01	0.00E+00	2.35E-02	-8.10E-01
SM	[kg]	1.00E+00	0.00E+00	0.00E+00	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	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	0.00E+00	0.00E+00
FW	[m ³]	7.58E-03	1.31E-05	1.83E-02	2.33E-05	3.54E-04	0.00E+00	2.33E-05	0.00E+00	-4.49E-04	-8.19E-04
Abbreviation	PERE = Consumption of renewable primary energy; PERM = Consumption of renewable primary energy resources used as raw materials; PERT = Total consumption of renewable primary energy resources; PENRE = Consumption of non-renewable primary energy; PENRM = Consumption of non-renewable primary energy resources used as raw materials; PENRT = Total consumption of non-renewable primary energy resources; SM = Consumption of secondary material; RSF = Consumption of renewable secondary fuel; NRSF = Consumption of non-renewable secondary fuel; FW = Net freshwater consumption										

Tabel 138 – End of life, EN15804:2012+A2:2019 (LCI)

WASTE CATEGORIES AND OUTPUT FLOWS PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
HWD	[kg]	1.03E-04	5.75E-07	6.63E-05	1.02E-06	5.68E-06	0.00E+00	1.02E-06	0.00E+00	1.58E-07	-7.63E-06
NHWD	[kg]	3.26E-01	7.50E-03	7.82E-02	1.33E-02	2.68E-02	0.00E+00	1.33E-02	0.00E+00	1.00E-01	-1.86E-02
RWD	[kg]	3.69E-05	2.63E-08	3.96E-05	4.67E-08	1.48E-06	0.00E+00	4.67E-08	0.00E+00	9.13E-09	-2.11E-06
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	0.00E+00	0.00E+00
MFR	[kg]	0.00E+00	0.00E+00	5.09E-02	0.00E+00	2.45E-01	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	0.00E+00	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	1.97E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EET	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.93E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Abbreviation	HWD = Hazardous Waste Disposed; NHWD = Non-Hazardous Waste Disposed; RWD = Radioactive Waste Disposed; CRU = Components for Recycling; MFR = Material for Recycling; MER = Material for Energy Recovery; EEE = Exported Electrical Energy; EET = Exported Thermal Energy										

Tabel 139 - Biogenic carbon at the factory gate

BIOGENIC CARBON PER KG		
Parameter	Unit	At the factory gate
Biogenic carbon content in the product	[kg C]	0.00E+00
Biogenic carbon content in the accompanying packaging	[kg C]	1.22E-01
Note	1 kg of biogenic carbon is equivalent to 44/12 kg of CO ₂	

RESULTS FOR GROUP 28 ACCORDING TO EN15804:2012+A2:2019

Tabel 140 – Potential environmental impacts, EN15804:2012+A2:2019 (LCIA)

ENVIRONMENTAL IMPACTS PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
GWP-total	[kg CO ₂ eq.]	7.45E-01	7.22E-03	1.00E+00	1.07E-02	5.07E-01	0.00E+00	1.07E-02	0.00E+00	9.21E-03	-4.36E-02
GWP-fossil	[kg CO ₂ eq.]	9.21E-01	7.21E-03	1.07E+00	1.07E-02	5.85E-02	0.00E+00	1.07E-02	0.00E+00	9.21E-03	-4.33E-02
GWP-biogenic	[kg CO ₂ eq.]	-1.77E-01	0.00E+00	-6.66E-02	0.00E+00	4.48E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GWP-luluc	[kg CO ₂ eq.]	1.88E-03	2.48E-06	1.54E-03	3.67E-06	3.17E-05	0.00E+00	3.67E-06	0.00E+00	2.00E-07	-2.14E-04
ODP	[kg CFC 11 eq.]	2.38E-08	1.46E-10	2.08E-08	2.16E-10	6.87E-10	0.00E+00	2.16E-10	0.00E+00	3.36E-11	-1.04E-09
AP	[mol H ⁺ eq.]	3.42E-03	2.88E-05	3.62E-03	4.25E-05	2.97E-04	0.00E+00	4.25E-05	0.00E+00	6.90E-06	-3.05E-04
EP-freshwater	[kg P eq.]	2.98E-04	4.94E-07	3.65E-04	7.29E-07	1.10E-05	0.00E+00	7.29E-07	0.00E+00	6.92E-08	-1.70E-05
EP-marine	[kg N eq.]	1.08E-03	1.08E-05	8.23E-04	1.59E-05	1.13E-04	0.00E+00	1.59E-05	0.00E+00	2.09E-04	-1.03E-04
EP-terrestrial	[mol N eq.]	8.95E-03	1.17E-04	8.06E-03	1.73E-04	1.19E-03	0.00E+00	1.73E-04	0.00E+00	3.06E-05	-1.15E-03
POCP	[kg NMVOC eq.]	3.32E-03	4.54E-05	2.68E-03	6.70E-05	3.46E-04	0.00E+00	6.70E-05	0.00E+00	1.38E-05	-3.66E-04
ADPm ¹	[kg Sb eq.]	5.37E-06	1.96E-08	2.48E-06	2.89E-08	2.06E-07	0.00E+00	2.89E-08	0.00E+00	2.22E-09	-2.54E-07
ADPf ¹	[MJ]	1.19E+02	1.05E-01	1.55E+01	1.55E-01	5.23E-01	0.00E+00	1.55E-01	0.00E+00	2.35E-02	-6.97E-01
WDP ¹	[m ³ world eq. deprived]	1.92E-01	5.01E-04	2.18E-01	7.40E-04	4.75E-03	0.00E+00	7.40E-04	0.00E+00	-5.20E-04	-8.04E-03
Abbreviation	GWP-total = Global warming, total; GWP-fossil = Global warming, fossil fuels; GWP-biogenic = Global warming, biogenic; GWP-luluc = Global warming, land use and land conversion; ODP = Ozone depletion; AP = Acidification; EP-freshwater = Eutrophication (nutrient loading) – freshwater; EP-marine = Eutrophication (nutrient loading) – marine; EP-terrestrial = Eutrophication (nutrient loading) – terrestrial; POCP = Photochemical ozone creation; ADPm = Depletion of abiotic resources – minerals and metals; ADPf = Depletion of abiotic fossil resources; WDP = Water consumption										
Remark	¹ The results for this environmental indicator should be used with caution, as the uncertainty surrounding the results is high or because there is limited experience with the indicator.										

Tabel 141 – Potential environmental impacts, EN15804:2012+A2:2019 (LCIA)

ENVIRONMENTAL IMPACTS PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
PM	[Disease incidence]	4.71E-08	7.33E-10	4.67E-08	1.08E-09	4.92E-09	0.00E+00	1.08E-09	0.00E+00	1.62E-10	-4.44E-09
IRP ²	[kBq U235 eq.]	1.37E-01	1.28E-04	1.45E-01	1.89E-04	4.89E-03	0.00E+00	1.89E-04	0.00E+00	3.92E-05	-7.34E-03
ETP-fw ¹	[CTUe]	5.25E+00	2.49E-02	3.21E+00	3.68E-02	4.17E-01	0.00E+00	3.68E-02	0.00E+00	2.93E-02	-3.14E-01
HTP-c ¹	[CTUh]	5.67E-09	4.49E-11	1.98E-09	6.63E-11	2.20E-10	0.00E+00	6.63E-11	0.00E+00	6.23E-12	-1.97E-10
HTP-nc ¹	[CTUh]	9.67E-09	6.78E-11	8.33E-09	1.00E-10	6.05E-10	0.00E+00	1.00E-10	0.00E+00	5.55E-11	-5.18E-10
SQP ¹	-	1.08E+01	1.06E-01	2.13E+01	1.56E-01	3.48E-01	0.00E+00	1.56E-01	0.00E+00	5.70E-02	-2.61E+01
Abbreviation	PM = Particulate matter; IRP = Ionizing radiation - human health; ETP-fw = Ecotoxicity - freshwater; HTP-c = Human toxicity - cancer effects; HTP-nc = Human toxicity - non-cancer effects; SQP = Soil quality (Dimensionless) consumption										
Remark	¹ The results for this environmental indicator should be used with caution, as the uncertainty surrounding the results is high or because there is limited experience with the indicator. ² This impact category primarily addresses the potential impact of low dose ionizing radiation on human health associated with nuclear fuel cycles. It does not take into account effects from possible nuclear accidents, occupational exposure or disposal of radioactive waste in underground facilities. Potential ionizing radiation from the soil, from radon and from certain building materials is also not measured by this indicator.										

Tabel 142 – Resource consumption, EN15804:2012+A2:2019 (LCI)

RESOURCE CONSUMPTION PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
PERE	[MJ]	7.27E-01	1.62E-03	2.40E+00	2.39E-03	2.61E-03	0.00E+00	2.39E-03	0.00E+00	7.12E-04	-4.20E+00
PERM	[MJ]	1.46E+00	0.00E+00	1.61E+00	0.00E+00	-3.73E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	[MJ]	2.19E+00	1.62E-03	4.01E+00	2.39E-03	-3.73E+00	0.00E+00	2.39E-03	0.00E+00	7.12E-04	-4.20E+00
PENRE	[MJ]	8.70E+01	1.05E-01	1.51E+01	1.55E-01	5.23E-01	0.00E+00	1.55E-01	0.00E+00	2.35E-02	-6.97E-01
PENRM	[MJ]	3.20E+01	0.00E+00	-3.19E-02	0.00E+00	-3.29E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	[MJ]	1.19E+02	1.05E-01	1.50E+01	1.55E-01	1.94E-01	0.00E+00	1.55E-01	0.00E+00	2.35E-02	-6.97E-01
SM	[kg]	1.00E+00	0.00E+00	0.00E+00	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	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	0.00E+00	0.00E+00
FW	[m ³]	7.38E-03	1.58E-05	1.74E-02	2.33E-05	3.00E-04	0.00E+00	2.33E-05	0.00E+00	-4.49E-04	-7.04E-04
Abbreviation	PERE = Consumption of renewable primary energy; PERM = Consumption of renewable primary energy resources used as raw materials; PERT = Total consumption of renewable primary energy resources; PENRE = Consumption of non-renewable primary energy; PENRM = Consumption of non-renewable primary energy resources used as raw materials; PENRT = Total consumption of non-renewable primary energy resources; SM = Consumption of secondary material; RSF = Consumption of renewable secondary fuel; NRSF = Consumption of non-renewable secondary fuel; FW = Net freshwater consumption										

Tabel 143 – End of life, EN15804:2012+A2:2019 (LCI)

WASTE CATEGORIES AND OUTPUT FLOWS PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
HWD	[kg]	1.00E-04	6.90E-07	6.12E-05	1.02E-06	4.80E-06	0.00E+00	1.02E-06	0.00E+00	1.58E-07	-6.67E-06
NHWD	[kg]	3.23E-01	9.00E-03	7.37E-02	1.33E-02	2.27E-02	0.00E+00	1.33E-02	0.00E+00	1.00E-01	-1.57E-02
RWD	[kg]	3.65E-05	3.16E-08	3.63E-05	4.67E-08	1.25E-06	0.00E+00	4.67E-08	0.00E+00	9.14E-09	-1.80E-06
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	0.00E+00	0.00E+00
MFR	[kg]	0.00E+00	0.00E+00	5.09E-02	0.00E+00	2.07E-01	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	0.00E+00	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	1.70E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EET	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.39E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Abbreviation	HWD = Hazardous Waste Disposed; NHWD = Non-Hazardous Waste Disposed; RWD = Radioactive Waste Disposed; CRU = Components for Recycling; MFR = Material for Recycling; MER = Material for Energy Recovery; EEE = Exported Electrical Energy; EET = Exported Thermal Energy										

Tabel 144 - Biogenic carbon at the factory gate

BIOGENIC CARBON PER KG		
Parameter	Unit	At the factory gate
Biogenic carbon content in the product	[kg C]	0.00E+00
Biogenic carbon content in the accompanying packaging	[kg C]	1.03E-01
Note	1 kg of biogenic carbon is equivalent to 44/12 kg of CO ₂	

RESULTS FOR GROUP 29 ACCORDING TO EN15804:2012+A2:2019

Tabel 145 – Potential environmental impacts, EN15804:2012+A2:2019 (LCIA)

ENVIRONMENTAL IMPACTS PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
GWP-total	[kg CO ₂ eq.]	7.45E-01	7.22E-03	9.86E-01	1.07E-02	4.80E-01	0.00E+00	1.07E-02	0.00E+00	9.21E-03	-3.82E-02
GWP-fossil	[kg CO ₂ eq.]	9.21E-01	7.21E-03	1.02E+00	1.07E-02	4.86E-02	0.00E+00	1.07E-02	0.00E+00	9.21E-03	-3.80E-02
GWP-biogenic	[kg CO ₂ eq.]	-1.77E-01	0.00E+00	-3.83E-02	0.00E+00	4.32E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GWP-luluc	[kg CO ₂ eq.]	1.88E-03	2.48E-06	1.36E-03	3.67E-06	2.81E-05	0.00E+00	3.67E-06	0.00E+00	2.00E-07	-1.96E-04
ODP	[kg CFC 11 eq.]	2.38E-08	1.46E-10	1.97E-08	2.16E-10	6.11E-10	0.00E+00	2.16E-10	0.00E+00	3.36E-11	-8.92E-10
AP	[mol H ⁺ eq.]	3.42E-03	2.88E-05	3.39E-03	4.25E-05	2.63E-04	0.00E+00	4.25E-05	0.00E+00	6.90E-06	-2.68E-04
EP-freshwater	[kg P eq.]	2.98E-04	4.94E-07	3.46E-04	7.29E-07	9.78E-06	0.00E+00	7.29E-07	0.00E+00	6.92E-08	-1.50E-05
EP-marine	[kg N eq.]	1.08E-03	1.08E-05	7.72E-04	1.59E-05	1.00E-04	0.00E+00	1.59E-05	0.00E+00	2.09E-04	-9.10E-05
EP-terrestrial	[mol N eq.]	8.95E-03	1.17E-04	7.57E-03	1.73E-04	1.05E-03	0.00E+00	1.73E-04	0.00E+00	3.06E-05	-1.02E-03
POCP	[kg NMVOC eq.]	3.32E-03	4.54E-05	2.50E-03	6.70E-05	3.07E-04	0.00E+00	6.70E-05	0.00E+00	1.38E-05	-3.24E-04
ADPm ¹	[kg Sb eq.]	5.37E-06	1.96E-08	2.29E-06	2.89E-08	1.81E-07	0.00E+00	2.89E-08	0.00E+00	2.22E-09	-2.18E-07
ADPf ¹	[MJ]	1.19E+02	1.05E-01	1.47E+01	1.55E-01	4.65E-01	0.00E+00	1.55E-01	0.00E+00	2.35E-02	-6.00E-01
WDP ¹	[m ³ world eq. deprived]	1.92E-01	5.01E-04	1.99E-01	7.40E-04	4.17E-03	0.00E+00	7.40E-04	0.00E+00	-5.20E-04	-6.74E-03
Abbreviation	GWP-total = Global warming, total; GWP-fossil = Global warming, fossil fuels; GWP-biogenic = Global warming, biogenic; GWP-luluc = Global warming, land use and land conversion; ODP = Ozone depletion; AP = Acidification; EP-freshwater = Eutrophication (nutrient loading) – freshwater; EP-marine = Eutrophication (nutrient loading) – marine; EP-terrestrial = Eutrophication (nutrient loading) – terrestrial; POCP = Photochemical ozone creation; ADPm = Depletion of abiotic resources – minerals and metals; ADPf = Depletion of abiotic fossil resources; WDP = Water consumption										
Remark	¹ The results for this environmental indicator should be used with caution, as the uncertainty surrounding the results is high or because there is limited experience with the indicator.										

Tabel 146 – Potential environmental impacts, EN15804:2012+A2:2019 (LCIA)

ENVIRONMENTAL IMPACTS PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
PM	[Disease incidence]	4.71E-08	7.33E-10	4.19E-08	1.08E-09	4.36E-09	0.00E+00	1.08E-09	0.00E+00	1.62E-10	-3.93E-09
IRP ²	[kBq U235 eq.]	1.37E-01	1.28E-04	1.35E-01	1.89E-04	4.34E-03	0.00E+00	1.89E-04	0.00E+00	3.92E-05	-6.42E-03
ETP-fw ¹	[CTUe]	5.25E+00	2.49E-02	2.98E+00	3.68E-02	3.67E-01	0.00E+00	3.68E-02	0.00E+00	2.93E-02	-2.77E-01
HTP-c ¹	[CTUh]	5.67E-09	4.49E-11	1.85E-09	6.63E-11	1.95E-10	0.00E+00	6.63E-11	0.00E+00	6.23E-12	-1.74E-10
HTP-nc ¹	[CTUh]	9.67E-09	6.78E-11	7.84E-09	1.00E-10	5.34E-10	0.00E+00	1.00E-10	0.00E+00	5.55E-11	-4.52E-10
SQP ¹	-	1.08E+01	1.06E-01	1.89E+01	1.56E-01	3.10E-01	0.00E+00	1.56E-01	0.00E+00	5.70E-02	-2.38E+01
Abbreviation	PM = Particulate matter; IRP = Ionizing radiation - human health; ETP-fw = Ecotoxicity - freshwater; HTP-c = Human toxicity - cancer effects; HTP-nc = Human toxicity - non-cancer effects; SQP = Soil quality (Dimensionless) consumption										
Remark	¹ The results for this environmental indicator should be used with caution, as the uncertainty surrounding the results is high or because there is limited experience with the indicator. ² This impact category primarily addresses the potential impact of low dose ionizing radiation on human health associated with nuclear fuel cycles. It does not take into account effects from possible nuclear accidents, occupational exposure or disposal of radioactive waste in underground facilities. Potential ionizing radiation from the soil, from radon and from certain building materials is also not measured by this indicator.										

Tabel 147 – Resource consumption, EN15804:2012+A2:2019 (LCI)

RESOURCE CONSUMPTION PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
PERE	[MJ]	7.27E-01	1.62E-03	2.17E+00	2.39E-03	1.90E-03	0.00E+00	2.39E-03	0.00E+00	7.12E-04	-3.85E+00
PERM	[MJ]	1.46E+00	0.00E+00	1.35E+00	0.00E+00	-3.51E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	[MJ]	2.19E+00	1.62E-03	3.52E+00	2.39E-03	-3.51E+00	0.00E+00	2.39E-03	0.00E+00	7.12E-04	-3.85E+00
PENRE	[MJ]	8.70E+01	1.05E-01	1.44E+01	1.55E-01	4.65E-01	0.00E+00	1.55E-01	0.00E+00	2.35E-02	-6.00E-01
PENRM	[MJ]	3.20E+01	0.00E+00	-1.29E-01	0.00E+00	-2.32E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	[MJ]	1.19E+02	1.05E-01	1.42E+01	1.55E-01	2.34E-01	0.00E+00	1.55E-01	0.00E+00	2.35E-02	-6.00E-01
SM	[kg]	1.00E+00	0.00E+00	0.00E+00	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	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	0.00E+00	0.00E+00
FW	[m ³]	7.38E-03	1.58E-05	1.67E-02	2.33E-05	2.65E-04	0.00E+00	2.33E-05	0.00E+00	-4.49E-04	-6.09E-04
Abbreviation	PERE = Consumption of renewable primary energy; PERM = Consumption of renewable primary energy resources used as raw materials; PERT = Total consumption of renewable primary energy resources; PENRE = Consumption of non-renewable primary energy; PENRM = Consumption of non-renewable primary energy resources used as raw materials; PENRT = Total consumption of non-renewable primary energy resources; SM = Consumption of secondary material; RSF = Consumption of renewable secondary fuel; NRSF = Consumption of non-renewable secondary fuel; FW = Net freshwater consumption										

Tabel 148 – End of life, EN15804:2012+A2:2019 (LCI)

WASTE CATEGORIES AND OUTPUT FLOWS PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
HWD	[kg]	1.00E-04	6.90E-07	5.46E-05	1.02E-06	4.25E-06	0.00E+00	1.02E-06	0.00E+00	1.58E-07	-5.50E-06
NHWD	[kg]	3.23E-01	9.00E-03	6.99E-02	1.33E-02	2.02E-02	0.00E+00	1.33E-02	0.00E+00	1.00E-01	-1.41E-02
RWD	[kg]	3.65E-05	3.16E-08	3.39E-05	4.67E-08	1.11E-06	0.00E+00	4.67E-08	0.00E+00	9.14E-09	-1.58E-06
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	0.00E+00	0.00E+00
MFR	[kg]	0.00E+00	0.00E+00	5.09E-02	0.00E+00	1.98E-01	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	0.00E+00	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	1.47E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EET	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.93E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Abbreviation	HWD = Hazardous Waste Disposed; NHWD = Non-Hazardous Waste Disposed; RWD = Radioactive Waste Disposed; CRU = Components for Recycling; MFR = Material for Recycling; MER = Material for Energy Recovery; EEE = Exported Electrical Energy; EET = Exported Thermal Energy										

Tabel 149 - Biogenic carbon at the factory gate

BIOGENIC CARBON PER KG		
Parameter	Unit	At the factory gate
Biogenic carbon content in the product	[kg C]	0.00E+00
Biogenic carbon content in the accompanying packaging	[kg C]	9.77E-02
Note	1 kg of biogenic carbon is equivalent to 44/12 kg of CO ₂	

RESULTS FOR GROUP 30 ACCORDING TO EN15804:2012+A2:2019

Tabel 150 – Potential environmental impacts, EN15804:2012+A2:2019 (LCIA)

ENVIRONMENTAL IMPACTS PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
GWP-total	[kg CO ₂ eq.]	2.51E+00	8.98E-03	1.01E+00	1.07E-02	5.95E-01	0.00E+00	1.07E-02	0.00E+00	1.18E-02	-4.95E-02
GWP-fossil	[kg CO ₂ eq.]	2.68E+00	8.97E-03	1.11E+00	1.07E-02	6.54E-02	0.00E+00	1.07E-02	0.00E+00	1.18E-02	-4.93E-02
GWP-biogenic	[kg CO ₂ eq.]	-1.77E-01	0.00E+00	-9.97E-02	0.00E+00	5.29E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GWP-luluc	[kg CO ₂ eq.]	2.49E-03	3.09E-06	1.73E-03	3.67E-06	3.60E-05	0.00E+00	3.67E-06	0.00E+00	1.99E-07	-2.47E-04
ODP	[kg CFC 11 eq.]	5.26E-07	1.82E-10	2.17E-08	2.16E-10	7.82E-10	0.00E+00	2.16E-10	0.00E+00	3.34E-11	-1.17E-09
AP	[mol H ⁺ eq.]	9.27E-03	3.58E-05	3.84E-03	4.25E-05	3.37E-04	0.00E+00	4.25E-05	0.00E+00	6.56E-06	-3.46E-04
EP-freshwater	[kg P eq.]	5.64E-04	6.14E-07	3.83E-04	7.29E-07	1.25E-05	0.00E+00	7.29E-07	0.00E+00	6.84E-08	-1.93E-05
EP-marine	[kg N eq.]	1.78E-03	1.34E-05	8.73E-04	1.59E-05	1.28E-04	0.00E+00	1.59E-05	0.00E+00	2.60E-05	-1.17E-04
EP-terrestrial	[mol N eq.]	1.76E-02	1.46E-04	8.53E-03	1.73E-04	1.35E-03	0.00E+00	1.73E-04	0.00E+00	2.97E-05	-1.31E-03
POCP	[kg NMVOC eq.]	1.42E-02	5.65E-05	2.83E-03	6.70E-05	3.94E-04	0.00E+00	6.70E-05	0.00E+00	1.42E-05	-4.17E-04
ADPm ¹	[kg Sb eq.]	2.27E-05	2.44E-08	2.63E-06	2.89E-08	2.33E-07	0.00E+00	2.89E-08	0.00E+00	2.17E-09	-2.87E-07
ADPf ¹	[MJ]	8.03E+01	1.31E-01	1.62E+01	1.55E-01	5.96E-01	0.00E+00	1.55E-01	0.00E+00	2.33E-02	-7.89E-01
WDP ¹	[m ³ world eq. deprived]	1.42E+00	6.23E-04	2.35E-01	7.40E-04	5.38E-03	0.00E+00	7.40E-04	0.00E+00	-5.14E-04	-9.02E-03
Abbreviation	GWP-total = Global warming, total; GWP-fossil = Global warming, fossil fuels; GWP-biogenic = Global warming, biogenic; GWP-luluc = Global warming, land use and land conversion; ODP = Ozone depletion; AP = Acidification; EP-freshwater = Eutrophication (nutrient loading) – freshwater; EP-marine = Eutrophication (nutrient loading) – marine; EP-terrestrial = Eutrophication (nutrient loading) – terrestrial; POCP = Photochemical ozone creation; ADPm = Depletion of abiotic resources – minerals and metals; ADPf = Depletion of abiotic fossil resources; WDP = Water consumption										
Remark	¹ The results for this environmental indicator should be used with caution, as the uncertainty surrounding the results is high or because there is limited experience with the indicator.										

Tabel 151 – Potential environmental impacts, EN15804:2012+A2:2019 (LCIA)

ENVIRONMENTAL IMPACTS PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
PM	[Disease incidence]	7.40E-08	9.12E-10	5.16E-08	1.08E-09	5.59E-09	0.00E+00	1.08E-09	0.00E+00	1.61E-10	-5.05E-09
IRP ²	[kBq U235 eq.]	2.21E-01	1.59E-04	1.54E-01	1.89E-04	5.57E-03	0.00E+00	1.89E-04	0.00E+00	3.50E-05	-8.33E-03
ETP-fw ¹	[CTUe]	1.15E+01	3.10E-02	3.41E+00	3.68E-02	4.73E-01	0.00E+00	3.68E-02	0.00E+00	6.46E-03	-3.57E-01
HTP-c ¹	[CTUh]	1.03E-08	5.58E-11	2.10E-09	6.63E-11	2.51E-10	0.00E+00	6.63E-11	0.00E+00	6.06E-12	-2.24E-10
HTP-nc ¹	[CTUh]	2.25E-08	8.44E-11	8.81E-09	1.00E-10	6.88E-10	0.00E+00	1.00E-10	0.00E+00	3.56E-11	-5.88E-10
SQP ¹	-	1.22E+01	1.32E-01	2.40E+01	1.56E-01	3.96E-01	0.00E+00	1.56E-01	0.00E+00	5.68E-02	-3.00E+01
Abbreviation	PM = Particulate matter; IRP = Ionizing radiation - human health; ETP-fw = Ecotoxicity - freshwater; HTP-c = Human toxicity - cancer effects; HTP-nc = Human toxicity - non-cancer effects; SQP = Soil quality (Dimensionless) consumption										
Remark	¹ The results for this environmental indicator should be used with caution, as the uncertainty surrounding the results is high or because there is limited experience with the indicator. ² This impact category primarily addresses the potential impact of low dose ionizing radiation on human health associated with nuclear fuel cycles. It does not take into account effects from possible nuclear accidents, occupational exposure or disposal of radioactive waste in underground facilities. Potential ionizing radiation from the soil, from radon and from certain building materials is also not measured by this indicator.										

Tabel 152 – Resource consumption, EN15804:2012+A2:2019 (LCI)

RESOURCE CONSUMPTION PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
PERE	[MJ]	1.58E+00	2.01E-03	2.65E+00	2.39E-03	2.83E-03	0.00E+00	2.39E-03	0.00E+00	6.34E-04	-4.84E+00
PERM	[MJ]	1.46E+00	0.00E+00	1.90E+00	0.00E+00	-4.37E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	[MJ]	3.05E+00	2.01E-03	4.55E+00	2.39E-03	-4.36E+00	0.00E+00	2.39E-03	0.00E+00	6.34E-04	-4.84E+00
PENRE	[MJ]	3.71E+01	1.31E-01	1.57E+01	1.55E-01	5.96E-01	0.00E+00	1.55E-01	0.00E+00	2.33E-02	-7.89E-01
PENRM	[MJ]	4.32E+01	0.00E+00	-6.82E-03	0.00E+00	-3.54E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	[MJ]	8.03E+01	1.31E-01	1.57E+01	1.55E-01	2.42E-01	0.00E+00	1.55E-01	0.00E+00	2.33E-02	-7.89E-01
SM	[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	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	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	0.00E+00	0.00E+00
FW	[m ³]	2.05E-02	1.96E-05	1.80E-02	2.33E-05	3.41E-04	0.00E+00	2.33E-05	0.00E+00	-4.46E-04	-7.99E-04
Abbreviation	PERE = Consumption of renewable primary energy; PERM = Consumption of renewable primary energy resources used as raw materials; PERT = Total consumption of renewable primary energy resources; PENRE = Consumption of non-renewable primary energy; PENRM = Consumption of non-renewable primary energy resources used as raw materials; PENRT = Total consumption of non-renewable primary energy resources; SM = Consumption of secondary material; RSF = Consumption of renewable secondary fuel; NRSF = Consumption of non-renewable secondary fuel; FW = Net freshwater consumption										

Tabel 153 – End of life, EN15804:2012+A2:2019 (LCI)

WASTE CATEGORIES AND OUTPUT FLOWS PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
HWD	[kg]	1.51E-03	8.59E-07	6.54E-05	1.02E-06	5.46E-06	0.00E+00	1.02E-06	0.00E+00	1.57E-07	-7.45E-06
NHWD	[kg]	1.52E-01	1.12E-02	7.75E-02	1.33E-02	2.59E-02	0.00E+00	1.33E-02	0.00E+00	1.00E-01	-1.79E-02
RWD	[kg]	5.79E-05	3.93E-08	3.87E-05	4.67E-08	1.43E-06	0.00E+00	4.67E-08	0.00E+00	8.18E-09	-2.04E-06
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	0.00E+00	0.00E+00
MFR	[kg]	0.00E+00	0.00E+00	5.09E-02	0.00E+00	2.43E-01	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	0.00E+00	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	1.93E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EET	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.85E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Abbreviation	HWD = Hazardous Waste Disposed; NHWD = Non-Hazardous Waste Disposed; RWD = Radioactive Waste Disposed; CRU = Components for Recycling; MFR = Material for Recycling; MER = Material for Energy Recovery; EEE = Exported Electrical Energy; EET = Exported Thermal Energy										

Tabel 154 - Biogenic carbon at the factory gate

BIOGENIC CARBON PER KG		
Parameter	Unit	At the factory gate
Biogenic carbon content in the product	[kg C]	0.00E+00
Biogenic carbon content in the accompanying packaging	[kg C]	1.21E-01
Note	1 kg of biogenic carbon is equivalent to 44/12 kg of CO ₂	

RESULTS FOR GROUP 31 ACCORDING TO EN15804:2012+A2:2019

Tabel 155 – Potential environmental impacts, EN15804:2012+A2:2019 (LCIA)

ENVIRONMENTAL IMPACTS PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
GWP-total	[kg CO ₂ eq.]	2.47E+00	8.98E-03	1.05E+00	1.07E-02	7.48E-01	0.00E+00	1.07E-02	0.00E+00	1.18E-02	-6.69E-02
GWP-fossil	[kg CO ₂ eq.]	2.65E+00	8.97E-03	1.24E+00	1.07E-02	9.33E-02	0.00E+00	1.07E-02	0.00E+00	1.18E-02	-6.66E-02
GWP-biogenic	[kg CO ₂ eq.]	-1.77E-01	0.00E+00	-1.93E-01	0.00E+00	6.54E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GWP-luluc	[kg CO ₂ eq.]	2.44E-03	3.09E-06	2.29E-03	3.67E-06	4.78E-05	0.00E+00	3.67E-06	0.00E+00	1.99E-07	-3.19E-04
ODP	[kg CFC 11 eq.]	1.23E-07	1.82E-10	2.49E-08	2.16E-10	1.04E-09	0.00E+00	2.16E-10	0.00E+00	3.34E-11	-1.63E-09
AP	[mol H ⁺ eq.]	8.92E-03	3.58E-05	4.55E-03	4.25E-05	4.49E-04	0.00E+00	4.25E-05	0.00E+00	6.56E-06	-4.65E-04
EP-freshwater	[kg P eq.]	5.52E-04	6.14E-07	4.41E-04	7.29E-07	1.67E-05	0.00E+00	7.29E-07	0.00E+00	6.84E-08	-2.60E-05
EP-marine	[kg N eq.]	1.75E-03	1.34E-05	1.03E-03	1.59E-05	1.71E-04	0.00E+00	1.59E-05	0.00E+00	2.60E-05	-1.56E-04
EP-terrestrial	[mol N eq.]	1.74E-02	1.46E-04	1.01E-02	1.73E-04	1.79E-03	0.00E+00	1.73E-04	0.00E+00	2.97E-05	-1.75E-03
POCP	[kg NMVOC eq.]	1.40E-02	5.65E-05	3.36E-03	6.70E-05	5.23E-04	0.00E+00	6.70E-05	0.00E+00	1.42E-05	-5.56E-04
ADPm ¹	[kg Sb eq.]	2.19E-05	2.44E-08	3.18E-06	2.89E-08	3.11E-07	0.00E+00	2.89E-08	0.00E+00	2.17E-09	-3.96E-07
ADPf ¹	[MJ]	7.97E+01	1.31E-01	1.86E+01	1.55E-01	7.88E-01	0.00E+00	1.55E-01	0.00E+00	2.33E-02	-1.09E+00
WDP ¹	[m ³ world eq. deprived]	1.41E+00	6.23E-04	2.94E-01	7.40E-04	7.22E-03	0.00E+00	7.40E-04	0.00E+00	-5.14E-04	-1.28E-02
Abbreviation	GWP-total = Global warming, total; GWP-fossil = Global warming, fossil fuels; GWP-biogenic = Global warming, biogenic; GWP-luluc = Global warming, land use and land conversion; ODP = Ozone depletion; AP = Acidification; EP-freshwater = Eutrophication (nutrient loading) – freshwater; EP-marine = Eutrophication (nutrient loading) – marine; EP-terrestrial = Eutrophication (nutrient loading) – terrestrial; POCP = Photochemical ozone creation; ADPm = Depletion of abiotic resources – minerals and metals; ADPf = Depletion of abiotic fossil resources; WDP = Water consumption										
Remark	¹ The results for this environmental indicator should be used with caution, as the uncertainty surrounding the results is high or because there is limited experience with the indicator.										

Tabel 156 – Potential environmental impacts, EN15804:2012+A2:2019 (LCIA)

ENVIRONMENTAL IMPACTS PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
PM	[Disease incidence]	7.04E-08	9.12E-10	6.67E-08	1.08E-09	7.41E-09	0.00E+00	1.08E-09	0.00E+00	1.61E-10	-6.73E-09
IRP ²	[kBq U235 eq.]	2.16E-01	1.59E-04	1.84E-01	1.89E-04	7.38E-03	0.00E+00	1.89E-04	0.00E+00	3.50E-05	-1.13E-02
ETP-fw ¹	[CTUe]	1.02E+01	3.10E-02	4.12E+00	3.68E-02	6.32E-01	0.00E+00	3.68E-02	0.00E+00	6.46E-03	-4.78E-01
HTP-c ¹	[CTUh]	9.97E-09	5.58E-11	2.51E-09	6.63E-11	3.33E-10	0.00E+00	6.63E-11	0.00E+00	6.06E-12	-3.00E-10
HTP-nc ¹	[CTUh]	2.22E-08	8.44E-11	1.04E-08	1.00E-10	9.26E-10	0.00E+00	1.00E-10	0.00E+00	3.56E-11	-7.99E-10
SQP ¹	-	1.22E+01	1.32E-01	3.19E+01	1.56E-01	5.24E-01	0.00E+00	1.56E-01	0.00E+00	5.68E-02	-3.89E+01
Abbreviation	PM = Particulate matter; IRP = Ionizing radiation - human health; ETP-fw = Ecotoxicity - freshwater; HTP-c = Human toxicity - cancer effects; HTP-nc = Human toxicity - non-cancer effects; SQP = Soil quality (Dimensionless) consumption										
Remark	¹ The results for this environmental indicator should be used with caution, as the uncertainty surrounding the results is high or because there is limited experience with the indicator. ² This impact category primarily addresses the potential impact of low dose ionizing radiation on human health associated with nuclear fuel cycles. It does not take into account effects from possible nuclear accidents, occupational exposure or disposal of radioactive waste in underground facilities. Potential ionizing radiation from the soil, from radon and from certain building materials is also not measured by this indicator.										

Tabel 157 – Resource consumption, EN15804:2012+A2:2019 (LCI)

RESOURCE CONSUMPTION PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
PERE	[MJ]	1.53E+00	2.01E-03	3.38E+00	2.39E-03	4.55E-03	0.00E+00	2.39E-03	0.00E+00	6.34E-04	-6.24E+00
PERM	[MJ]	1.46E+00	0.00E+00	2.75E+00	0.00E+00	-5.53E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	[MJ]	2.99E+00	2.01E-03	6.13E+00	2.39E-03	-5.53E+00	0.00E+00	2.39E-03	0.00E+00	6.34E-04	-6.24E+00
PENRE	[MJ]	3.65E+01	1.31E-01	1.79E+01	1.55E-01	7.88E-01	0.00E+00	1.55E-01	0.00E+00	2.33E-02	-1.09E+00
PENRM	[MJ]	4.32E+01	0.00E+00	2.24E-01	0.00E+00	-5.85E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	[MJ]	7.97E+01	1.31E-01	1.82E+01	1.55E-01	2.03E-01	0.00E+00	1.55E-01	0.00E+00	2.33E-02	-1.09E+00
SM	[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	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	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	0.00E+00	0.00E+00
FW	[m ³]	1.99E-02	1.96E-05	2.01E-02	2.33E-05	4.56E-04	0.00E+00	2.33E-05	0.00E+00	-4.46E-04	-1.10E-03
Abbreviation	PERE = Consumption of renewable primary energy; PERM = Consumption of renewable primary energy resources used as raw materials; PERT = Total consumption of renewable primary energy resources; PENRE = Consumption of non-renewable primary energy; PENRM = Consumption of non-renewable primary energy resources used as raw materials; PENRT = Total consumption of non-renewable primary energy resources; SM = Consumption of secondary material; RSF = Consumption of renewable secondary fuel; NRSF = Consumption of non-renewable secondary fuel; FW = Net freshwater consumption										

Tabel 158 – End of life, EN15804:2012+A2:2019 (LCI)

WASTE CATEGORIES AND OUTPUT FLOWS PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
HWD	[kg]	1.50E-03	8.59E-07	8.43E-05	1.02E-06	7.25E-06	0.00E+00	1.02E-06	0.00E+00	1.57E-07	-1.07E-05
NHWD	[kg]	1.58E-01	1.12E-02	8.97E-02	1.33E-02	3.47E-02	0.00E+00	1.33E-02	0.00E+00	1.00E-01	-2.35E-02
RWD	[kg]	5.65E-05	3.93E-08	4.63E-05	4.67E-08	1.89E-06	0.00E+00	4.67E-08	0.00E+00	8.18E-09	-2.77E-06
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	0.00E+00	0.00E+00
MFR	[kg]	0.00E+00	0.00E+00	5.09E-02	0.00E+00	3.02E-01	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	0.00E+00	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	2.69E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EET	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.36E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Abbreviation	HWD = Hazardous Waste Disposed; NHWD = Non-Hazardous Waste Disposed; RWD = Radioactive Waste Disposed; CRU = Components for Recycling; MFR = Material for Recycling; MER = Material for Energy Recovery; EEE = Exported Electrical Energy; EET = Exported Thermal Energy										

Tabel 159 - Biogenic carbon at the factory gate

BIOGENIC CARBON PER KG		
Parameter	Unit	At the factory gate
Biogenic carbon content in the product	[kg C]	0.00E+00
Biogenic carbon content in the accompanying packaging	[kg C]	1.52E-01
Note	1 kg of biogenic carbon is equivalent to 44/12 kg of CO ₂	

RESULTS FOR GROUP 32 ACCORDING TO EN15804:2012+A2:2019

Tabel 160 – Potential environmental impacts, EN15804:2012+A2:2019 (LCIA)

ENVIRONMENTAL IMPACTS PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
GWP-total	[kg CO ₂ eq.]	2.51E+00	8.98E-03	1.05E+00	1.07E-02	6.24E-01	0.00E+00	1.07E-02	0.00E+00	1.18E-02	-5.35E-02
GWP-fossil	[kg CO ₂ eq.]	2.69E+00	8.97E-03	1.10E+00	1.07E-02	1.44E-01	0.00E+00	1.07E-02	0.00E+00	1.18E-02	-5.32E-02
GWP-biogenic	[kg CO ₂ eq.]	-1.77E-01	0.00E+00	-4.83E-02	0.00E+00	4.80E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GWP-luluc	[kg CO ₂ eq.]	2.49E-03	3.09E-06	1.51E-03	3.67E-06	3.73E-05	0.00E+00	3.67E-06	0.00E+00	1.99E-07	-2.44E-04
ODP	[kg CFC 11 eq.]	5.27E-07	1.82E-10	2.27E-08	2.16E-10	7.60E-10	0.00E+00	2.16E-10	0.00E+00	3.34E-11	-1.45E-09
AP	[mol H ⁺ eq.]	9.48E-03	3.58E-05	3.71E-03	4.25E-05	3.12E-04	0.00E+00	4.25E-05	0.00E+00	6.56E-06	-3.47E-04
EP-freshwater	[kg P eq.]	5.65E-04	6.14E-07	3.75E-04	7.29E-07	1.25E-05	0.00E+00	7.29E-07	0.00E+00	6.84E-08	-2.08E-05
EP-marine	[kg N eq.]	1.79E-03	1.34E-05	8.43E-04	1.59E-05	1.18E-04	0.00E+00	1.59E-05	0.00E+00	2.60E-05	-1.11E-04
EP-terrestrial	[mol N eq.]	1.77E-02	1.46E-04	8.23E-03	1.73E-04	1.22E-03	0.00E+00	1.73E-04	0.00E+00	2.97E-05	-1.27E-03
POCP	[kg NMVOC eq.]	1.42E-02	5.65E-05	2.86E-03	6.70E-05	3.61E-04	0.00E+00	6.70E-05	0.00E+00	1.42E-05	-4.10E-04
ADPm ¹	[kg Sb eq.]	2.31E-05	2.44E-08	2.80E-06	2.89E-08	2.36E-07	0.00E+00	2.89E-08	0.00E+00	2.17E-09	-3.39E-07
ADPf ¹	[MJ]	8.04E+01	1.31E-01	1.66E+01	1.55E-01	5.92E-01	0.00E+00	1.55E-01	0.00E+00	2.33E-02	-9.44E-01
WDP ¹	[m ³ world eq. deprived]	1.41E+00	6.23E-04	2.36E-01	7.40E-04	5.72E-03	0.00E+00	7.40E-04	0.00E+00	-5.14E-04	-1.14E-02
Abbreviation	GWP-total = Global warming, total; GWP-fossil = Global warming, fossil fuels; GWP-biogenic = Global warming, biogenic; GWP-luluc = Global warming, land use and land conversion; ODP = Ozone depletion; AP = Acidification; EP-freshwater = Eutrophication (nutrient loading) – freshwater; EP-marine = Eutrophication (nutrient loading) – marine; EP-terrestrial = Eutrophication (nutrient loading) – terrestrial; POCP = Photochemical ozone creation; ADPm = Depletion of abiotic resources – minerals and metals; ADPf = Depletion of abiotic fossil resources; WDP = Water consumption										
Remark	¹ The results for this environmental indicator should be used with caution, as the uncertainty surrounding the results is high or because there is limited experience with the indicator.										

Tabel 161 – Potential environmental impacts, EN15804:2012+A2:2019 (LCIA)

ENVIRONMENTAL IMPACTS PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
PM	[Disease incidence]	7.59E-08	9.12E-10	4.58E-08	1.08E-09	5.00E-09	0.00E+00	1.08E-09	0.00E+00	1.61E-10	-4.74E-09
IRP ²	[kBq U235 eq.]	2.21E-01	1.59E-04	1.55E-01	1.89E-04	5.78E-03	0.00E+00	1.89E-04	0.00E+00	3.50E-05	-9.42E-03
ETP-fw ¹	[CTUe]	1.18E+01	3.10E-02	3.35E+00	3.68E-02	4.43E-01	0.00E+00	3.68E-02	0.00E+00	6.46E-03	-3.46E-01
HTP-c ¹	[CTUh]	1.03E-08	5.58E-11	2.26E-09	6.63E-11	2.69E-10	0.00E+00	6.63E-11	0.00E+00	6.06E-12	-2.40E-10
HTP-nc ¹	[CTUh]	2.26E-08	8.44E-11	8.54E-09	1.00E-10	7.21E-10	0.00E+00	1.00E-10	0.00E+00	3.56E-11	-6.64E-10
SQP ¹	-	1.22E+01	1.32E-01	2.02E+01	1.56E-01	3.85E-01	0.00E+00	1.56E-01	0.00E+00	5.68E-02	-2.59E+01
Abbreviation	PM = Particulate matter; IRP = Ionizing radiation - human health; ETP-fw = Ecotoxicity - freshwater; HTP-c = Human toxicity - cancer effects; HTP-nc = Human toxicity - non-cancer effects; SQP = Soil quality (Dimensionless)r consumption										
Remark	¹ The results for this environmental indicator should be used with caution, as the uncertainty surrounding the results is high or because there is limited experience with the indicator. ² This impact category primarily addresses the potential impact of low dose ionizing radiation on human health associated with nuclear fuel cycles. It does not take into account effects from possible nuclear accidents, occupational exposure or disposal of radioactive waste in underground facilities. Potential ionizing radiation from the soil, from radon and from certain building materials is also not measured by this indicator.										

Tabel 162 – Resource consumption, EN15804:2012+A2:2019 (LCI)

RESOURCE CONSUMPTION PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
PERE	[MJ]	1.59E+00	2.01E-03	2.42E+00	2.39E-03	2.46E-03	0.00E+00	2.39E-03	0.00E+00	6.34E-04	-4.34E+00
PERM	[MJ]	1.46E+00	0.00E+00	1.44E+00	0.00E+00	-3.97E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	[MJ]	3.05E+00	2.01E-03	3.86E+00	2.39E-03	-3.97E+00	0.00E+00	2.39E-03	0.00E+00	6.34E-04	-4.34E+00
PENRE	[MJ]	3.72E+01	1.31E-01	1.49E+01	1.55E-01	5.92E-01	0.00E+00	1.55E-01	0.00E+00	2.33E-02	-9.44E-01
PENRM	[MJ]	4.32E+01	0.00E+00	1.28E+00	0.00E+00	-1.64E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	[MJ]	8.04E+01	1.31E-01	1.62E+01	1.55E-01	-1.05E+00	0.00E+00	1.55E-01	0.00E+00	2.33E-02	-9.44E-01
SM	[kg]	0.00E+00	0.00E+00	1.17E-02	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	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	0.00E+00	0.00E+00
FW	[m ³]	2.04E-02	1.96E-05	1.75E-02	2.33E-05	3.48E-04	0.00E+00	2.33E-05	0.00E+00	-4.46E-04	-1.04E-03
Abbreviation	PERE = Consumption of renewable primary energy; PERM = Consumption of renewable primary energy resources used as raw materials; PERT = Total consumption of renewable primary energy resources; PENRE = Consumption of non-renewable primary energy; PENRM = Consumption of non-renewable primary energy resources used as raw materials; PENRT = Total consumption of non-renewable primary energy resources; SM = Consumption of secondary material; RSF = Consumption of renewable secondary fuel; NRSF = Consumption of non-renewable secondary fuel; FW = Net freshwater consumption										

Tabel 163 – End of life, EN15804:2012+A2:2019 (LCI)

WASTE CATEGORIES AND OUTPUT FLOWS PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
HWD	[kg]	1.52E-03	8.59E-07	8.07E-05	1.02E-06	5.19E-06	0.00E+00	1.02E-06	0.00E+00	1.57E-07	-1.01E-05
NHWD	[kg]	1.48E-01	1.12E-02	8.39E-02	1.33E-02	2.56E-02	0.00E+00	1.33E-02	0.00E+00	1.00E-01	-1.60E-02
RWD	[kg]	5.79E-05	3.93E-08	3.89E-05	4.67E-08	1.48E-06	0.00E+00	4.67E-08	0.00E+00	8.18E-09	-2.28E-06
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	0.00E+00	0.00E+00
MFR	[kg]	0.00E+00	0.00E+00	5.09E-02	0.00E+00	2.28E-01	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	0.00E+00	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	2.93E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EET	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.77E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Abbreviation	HWD = Hazardous Waste Disposed; NHWD = Non-Hazardous Waste Disposed; RWD = Radioactive Waste Disposed; CRU = Components for Recycling; MFR = Material for Recycling; MER = Material for Energy Recovery; EEE = Exported Electrical Energy; EET = Exported Thermal Energy										

Tabel 164 - Biogenic carbon at the factory gate

BIOGENIC CARBON PER KG		
Parameter	Unit	At the factory gate
Biogenic carbon content in the product	[kg C]	0.00E+00
Biogenic carbon content in the accompanying packaging	[kg C]	1.07E-01
Note	1 kg of biogenic carbon is equivalent to 44/12 kg of CO ₂	

RESULTS FOR GROUP 33 ACCORDING TO EN15804:2012+A2:2019

Tabel 165 – Potential environmental impacts, EN15804:2012+A2:2019 (LCIA)

ENVIRONMENTAL IMPACTS PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
GWP-total	[kg CO ₂ eq.]	2.52E+00	8.98E-03	1.01E+00	1.07E-02	5.41E-01	0.00E+00	1.07E-02	0.00E+00	1.18E-02	-4.75E-02
GWP-fossil	[kg CO ₂ eq.]	2.69E+00	8.97E-03	1.10E+00	1.07E-02	6.48E-02	0.00E+00	1.07E-02	0.00E+00	1.18E-02	-4.72E-02
GWP-biogenic	[kg CO ₂ eq.]	-1.77E-01	0.00E+00	-8.74E-02	0.00E+00	4.77E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GWP-luluc	[kg CO ₂ eq.]	2.51E-03	3.09E-06	1.66E-03	3.67E-06	3.42E-05	0.00E+00	3.67E-06	0.00E+00	1.99E-07	-2.30E-04
ODP	[kg CFC 11 eq.]	1.24E-07	1.82E-10	2.15E-08	2.16E-10	7.42E-10	0.00E+00	2.16E-10	0.00E+00	3.34E-11	-1.14E-09
AP	[mol H ⁺ eq.]	8.91E-03	3.58E-05	3.78E-03	4.25E-05	3.21E-04	0.00E+00	4.25E-05	0.00E+00	6.56E-06	-3.31E-04
EP-freshwater	[kg P eq.]	5.67E-04	6.14E-07	3.78E-04	7.29E-07	1.19E-05	0.00E+00	7.29E-07	0.00E+00	6.84E-08	-1.85E-05
EP-marine	[kg N eq.]	1.78E-03	1.34E-05	8.61E-04	1.59E-05	1.22E-04	0.00E+00	1.59E-05	0.00E+00	2.60E-05	-1.11E-04
EP-terrestrial	[mol N eq.]	1.78E-02	1.46E-04	8.42E-03	1.73E-04	1.28E-03	0.00E+00	1.73E-04	0.00E+00	2.97E-05	-1.25E-03
POCP	[kg NMVOC eq.]	1.41E-02	5.65E-05	2.80E-03	6.70E-05	3.75E-04	0.00E+00	6.70E-05	0.00E+00	1.42E-05	-3.97E-04
ADPm ¹	[kg Sb eq.]	2.43E-05	2.44E-08	2.60E-06	2.89E-08	2.22E-07	0.00E+00	2.89E-08	0.00E+00	2.17E-09	-2.79E-07
ADPf ¹	[MJ]	8.04E+01	1.31E-01	1.60E+01	1.55E-01	5.65E-01	0.00E+00	1.55E-01	0.00E+00	2.33E-02	-7.65E-01
WDP ¹	[m ³ world eq. deprived]	1.43E+00	6.23E-04	2.32E-01	7.40E-04	5.16E-03	0.00E+00	7.40E-04	0.00E+00	-5.14E-04	-8.90E-03
Abbreviation	GWP-total = Global warming, total; GWP-fossil = Global warming, fossil fuels; GWP-biogenic = Global warming, biogenic; GWP-luluc = Global warming, land use and land conversion; ODP = Ozone depletion; AP = Acidification; EP-freshwater = Eutrophication (nutrient loading) – freshwater; EP-marine = Eutrophication (nutrient loading) – marine; EP-terrestrial = Eutrophication (nutrient loading) – terrestrial; POCP = Photochemical ozone creation; ADPm = Depletion of abiotic resources – minerals and metals; ADPf = Depletion of abiotic fossil resources; WDP = Water consumption										
Remark	¹ The results for this environmental indicator should be used with caution, as the uncertainty surrounding the results is high or because there is limited experience with the indicator.										

Tabel 166 – Potential environmental impacts, EN15804:2012+A2:2019 (LCIA)

ENVIRONMENTAL IMPACTS PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
PM	[Disease incidence]	7.41E-08	9.12E-10	5.01E-08	1.08E-09	5.31E-09	0.00E+00	1.08E-09	0.00E+00	1.61E-10	-4.81E-09
IRP ²	[kBq U235 eq.]	2.21E-01	1.59E-04	1.52E-01	1.89E-04	5.29E-03	0.00E+00	1.89E-04	0.00E+00	3.50E-05	-8.02E-03
ETP-fw ¹	[CTUe]	1.05E+01	3.10E-02	3.37E+00	3.68E-02	4.52E-01	0.00E+00	3.68E-02	0.00E+00	6.46E-03	-3.41E-01
HTP-c ¹	[CTUh]	1.04E-08	5.58E-11	2.08E-09	6.63E-11	2.38E-10	0.00E+00	6.63E-11	0.00E+00	6.06E-12	-2.14E-10
HTP-nc ¹	[CTUh]	2.27E-08	8.44E-11	8.69E-09	1.00E-10	6.59E-10	0.00E+00	1.00E-10	0.00E+00	3.56E-11	-5.66E-10
SQP ¹	-	1.22E+01	1.32E-01	2.31E+01	1.56E-01	3.76E-01	0.00E+00	1.56E-01	0.00E+00	5.68E-02	-2.80E+01
Abbreviation	PM = Particulate matter; IRP = Ionizing radiation - human health; ETP-fw = Ecotoxicity - freshwater; HTP-c = Human toxicity - cancer effects; HTP-nc = Human toxicity - non-cancer effects; SQP = Soil quality (Dimensionless) consumption										
Remark	¹ The results for this environmental indicator should be used with caution, as the uncertainty surrounding the results is high or because there is limited experience with the indicator. ² This impact category primarily addresses the potential impact of low dose ionizing radiation on human health associated with nuclear fuel cycles. It does not take into account effects from possible nuclear accidents, occupational exposure or disposal of radioactive waste in underground facilities. Potential ionizing radiation from the soil, from radon and from certain building materials is also not measured by this indicator.										

Tabel 167 – Resource consumption, EN15804:2012+A2:2019 (LCI)

RESOURCE CONSUMPTION PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
PERE	[MJ]	1.59E+00	2.01E-03	2.57E+00	2.39E-03	3.01E-03	0.00E+00	2.39E-03	0.00E+00	6.34E-04	-4.50E+00
PERM	[MJ]	1.46E+00	0.00E+00	1.80E+00	0.00E+00	-4.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	[MJ]	3.05E+00	2.01E-03	4.37E+00	2.39E-03	-4.00E+00	0.00E+00	2.39E-03	0.00E+00	6.34E-04	-4.50E+00
PENRE	[MJ]	3.71E+01	1.31E-01	1.56E+01	1.55E-01	5.65E-01	0.00E+00	1.55E-01	0.00E+00	2.33E-02	-7.65E-01
PENRM	[MJ]	4.32E+01	0.00E+00	2.26E-02	0.00E+00	-3.83E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	[MJ]	8.04E+01	1.31E-01	1.56E+01	1.55E-01	1.82E-01	0.00E+00	1.55E-01	0.00E+00	2.33E-02	-7.65E-01
SM	[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	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	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	0.00E+00	0.00E+00
FW	[m ³]	2.05E-02	1.96E-05	1.79E-02	2.33E-05	3.26E-04	0.00E+00	2.33E-05	0.00E+00	-4.46E-04	-7.76E-04
Abbreviation	PERE = Consumption of renewable primary energy; PERM = Consumption of renewable primary energy resources used as raw materials; PERT = Total consumption of renewable primary energy resources; PENRE = Consumption of non-renewable primary energy; PENRM = Consumption of non-renewable primary energy resources used as raw materials; PENRT = Total consumption of non-renewable primary energy resources; SM = Consumption of secondary material; RSF = Consumption of renewable secondary fuel; NRSF = Consumption of non-renewable secondary fuel; FW = Net freshwater consumption										

Tabel 168 – End of life, EN15804:2012+A2:2019 (LCI)

WASTE CATEGORIES AND OUTPUT FLOWS PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
HWD	[kg]	1.51E-03	8.59E-07	6.59E-05	1.02E-06	5.20E-06	0.00E+00	1.02E-06	0.00E+00	1.57E-07	-7.41E-06
NHWD	[kg]	1.45E-01	1.12E-02	7.65E-02	1.33E-02	2.47E-02	0.00E+00	1.33E-02	0.00E+00	1.00E-01	-1.69E-02
RWD	[kg]	5.79E-05	3.93E-08	3.81E-05	4.67E-08	1.35E-06	0.00E+00	4.67E-08	0.00E+00	8.18E-09	-1.97E-06
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	0.00E+00	0.00E+00
MFR	[kg]	0.00E+00	0.00E+00	5.09E-02	0.00E+00	2.20E-01	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	0.00E+00	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	1.88E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EET	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.76E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Abbreviation	HWD = Hazardous Waste Disposed; NHWD = Non-Hazardous Waste Disposed; RWD = Radioactive Waste Disposed; CRU = Components for Recycling; MFR = Material for Recycling; MER = Material for Energy Recovery; EEE = Exported Electrical Energy; EET = Exported Thermal Energy										

Tabel 169 - Biogenic carbon at the factory gate

BIOGENIC CARBON PER KG		
Parameter	Unit	At the factory gate
Biogenic carbon content in the product	[kg C]	0.00E+00
Biogenic carbon content in the accompanying packaging	[kg C]	1.10E-01
Note	1 kg of biogenic carbon is equivalent to 44/12 kg of CO ₂	

RESULTS FOR GROUP 34 ACCORDING TO EN15804:2012+A2:2019

Tabel 170 – Potential environmental impacts, EN15804:2012+A2:2019 (LCIA)

ENVIRONMENTAL IMPACTS PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
GWP-total	[kg CO ₂ eq.]	2.51E+00	8.98E-03	1.03E+00	1.07E-02	6.34E-01	0.00E+00	1.07E-02	0.00E+00	1.18E-02	-5.67E-02
GWP-fossil	[kg CO ₂ eq.]	2.68E+00	8.97E-03	1.17E+00	1.07E-02	7.96E-02	0.00E+00	1.07E-02	0.00E+00	1.18E-02	-5.64E-02
GWP-biogenic	[kg CO ₂ eq.]	-1.77E-01	0.00E+00	-1.35E-01	0.00E+00	5.54E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GWP-luluc	[kg CO ₂ eq.]	2.49E-03	3.09E-06	1.95E-03	3.67E-06	4.05E-05	0.00E+00	3.67E-06	0.00E+00	1.99E-07	-2.70E-04
ODP	[kg CFC 11 eq.]	5.19E-07	1.82E-10	2.31E-08	2.16E-10	8.77E-10	0.00E+00	2.16E-10	0.00E+00	3.34E-11	-1.38E-09
AP	[mol H ⁺ eq.]	9.27E-03	3.58E-05	4.14E-03	4.25E-05	3.80E-04	0.00E+00	4.25E-05	0.00E+00	6.56E-06	-3.93E-04
EP-freshwater	[kg P eq.]	5.63E-04	6.14E-07	4.07E-04	7.29E-07	1.41E-05	0.00E+00	7.29E-07	0.00E+00	6.84E-08	-2.20E-05
EP-marine	[kg N eq.]	1.78E-03	1.34E-05	9.40E-04	1.59E-05	1.45E-04	0.00E+00	1.59E-05	0.00E+00	2.60E-05	-1.32E-04
EP-terrestrial	[mol N eq.]	1.76E-02	1.46E-04	9.18E-03	1.73E-04	1.52E-03	0.00E+00	1.73E-04	0.00E+00	2.97E-05	-1.48E-03
POCP	[kg NMVOC eq.]	1.42E-02	5.65E-05	3.07E-03	6.70E-05	4.42E-04	0.00E+00	6.70E-05	0.00E+00	1.42E-05	-4.71E-04
ADPm ¹	[kg Sb eq.]	2.27E-05	2.44E-08	2.88E-06	2.89E-08	2.63E-07	0.00E+00	2.89E-08	0.00E+00	2.17E-09	-3.36E-07
ADPf ¹	[MJ]	8.03E+01	1.31E-01	1.73E+01	1.55E-01	6.67E-01	0.00E+00	1.55E-01	0.00E+00	2.33E-02	-9.25E-01
WDP ¹	[m ³ world eq. deprived]	1.42E+00	6.23E-04	2.61E-01	7.40E-04	6.11E-03	0.00E+00	7.40E-04	0.00E+00	-5.14E-04	-1.09E-02
Abbreviation	GWP-total = Global warming, total; GWP-fossil = Global warming, fossil fuels; GWP-biogenic = Global warming, biogenic; GWP-luluc = Global warming, land use and land conversion; ODP = Ozone depletion; AP = Acidification; EP-freshwater = Eutrophication (nutrient loading) – freshwater; EP-marine = Eutrophication (nutrient loading) – marine; EP-terrestrial = Eutrophication (nutrient loading) – terrestrial; POCP = Photochemical ozone creation; ADPm = Depletion of abiotic resources – minerals and metals; ADPf = Depletion of abiotic fossil resources; WDP = Water consumption										
Remark	¹ The results for this environmental indicator should be used with caution, as the uncertainty surrounding the results is high or because there is limited experience with the indicator.										

Tabel 171 – Potential environmental impacts, EN15804:2012+A2:2019 (LCIA)

ENVIRONMENTAL IMPACTS PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
PM	[Disease incidence]	7.39E-08	9.12E-10	5.76E-08	1.08E-09	6.27E-09	0.00E+00	1.08E-09	0.00E+00	1.61E-10	-5.69E-09
IRP ²	[kBq U235 eq.]	2.21E-01	1.59E-04	1.66E-01	1.89E-04	6.25E-03	0.00E+00	1.89E-04	0.00E+00	3.50E-05	-9.57E-03
ETP-fw ¹	[CTUe]	1.15E+01	3.10E-02	3.73E+00	3.68E-02	5.34E-01	0.00E+00	3.68E-02	0.00E+00	6.46E-03	-4.05E-01
HTP-c ¹	[CTUh]	1.03E-08	5.58E-11	2.28E-09	6.63E-11	2.82E-10	0.00E+00	6.63E-11	0.00E+00	6.06E-12	-2.55E-10
HTP-nc ¹	[CTUh]	2.25E-08	8.44E-11	9.46E-09	1.00E-10	7.82E-10	0.00E+00	1.00E-10	0.00E+00	3.56E-11	-6.76E-10
SQP ¹	-	1.22E+01	1.32E-01	2.71E+01	1.56E-01	4.44E-01	0.00E+00	1.56E-01	0.00E+00	5.68E-02	-3.29E+01
Abbreviation	PM = Particulate matter; IRP = Ionizing radiation - human health; ETP-fw = Ecotoxicity - freshwater; HTP-c = Human toxicity - cancer effects; HTP-nc = Human toxicity - non-cancer effects; SQP = Soil quality (Dimensionless) consumption										
Remark	¹ The results for this environmental indicator should be used with caution, as the uncertainty surrounding the results is high or because there is limited experience with the indicator. ² This impact category primarily addresses the potential impact of low dose ionizing radiation on human health associated with nuclear fuel cycles. It does not take into account effects from possible nuclear accidents, occupational exposure or disposal of radioactive waste in underground facilities. Potential ionizing radiation from the soil, from radon and from certain building materials is also not measured by this indicator.										

Tabel 172 – Resource consumption, EN15804:2012+A2:2019 (LCI)

RESOURCE CONSUMPTION PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
PERE	[MJ]	1.58E+00	2.01E-03	2.94E+00	2.39E-03	3.94E-03	0.00E+00	2.39E-03	0.00E+00	6.34E-04	-5.28E+00
PERM	[MJ]	1.46E+00	0.00E+00	2.23E+00	0.00E+00	-4.67E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	[MJ]	3.05E+00	2.01E-03	5.17E+00	2.39E-03	-4.67E+00	0.00E+00	2.39E-03	0.00E+00	6.34E-04	-5.28E+00
PENRE	[MJ]	3.71E+01	1.31E-01	1.67E+01	1.55E-01	6.67E-01	0.00E+00	1.55E-01	0.00E+00	2.33E-02	-9.25E-01
PENRM	[MJ]	4.32E+01	0.00E+00	1.46E-01	0.00E+00	-5.07E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	[MJ]	8.03E+01	1.31E-01	1.68E+01	1.55E-01	1.60E-01	0.00E+00	1.55E-01	0.00E+00	2.33E-02	-9.25E-01
SM	[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	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	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	0.00E+00	0.00E+00
FW	[m ³]	2.05E-02	1.96E-05	1.90E-02	2.33E-05	3.86E-04	0.00E+00	2.33E-05	0.00E+00	-4.46E-04	-9.34E-04
Abbreviation	PERE = Consumption of renewable primary energy; PERM = Consumption of renewable primary energy resources used as raw materials; PERT = Total consumption of renewable primary energy resources; PENRE = Consumption of non-renewable primary energy; PENRM = Consumption of non-renewable primary energy resources used as raw materials; PENRT = Total consumption of non-renewable primary energy resources; SM = Consumption of secondary material; RSF = Consumption of renewable secondary fuel; NRSF = Consumption of non-renewable secondary fuel; FW = Net freshwater consumption										

Tabel 173 – End of life, EN15804:2012+A2:2019 (LCI)

WASTE CATEGORIES AND OUTPUT FLOWS PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
HWD	[kg]	1.51E-03	8.59E-07	7.52E-05	1.02E-06	6.14E-06	0.00E+00	1.02E-06	0.00E+00	1.57E-07	-9.15E-06
NHWD	[kg]	1.52E-01	1.12E-02	8.26E-02	1.33E-02	2.92E-02	0.00E+00	1.33E-02	0.00E+00	1.00E-01	-1.99E-02
RWD	[kg]	5.78E-05	3.93E-08	4.18E-05	4.67E-08	1.60E-06	0.00E+00	4.67E-08	0.00E+00	8.18E-09	-2.35E-06
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	0.00E+00	0.00E+00
MFR	[kg]	0.00E+00	0.00E+00	5.09E-02	0.00E+00	2.56E-01	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	0.00E+00	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	2.27E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EET	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.52E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Abbreviation	HWD = Hazardous Waste Disposed; NHWD = Non-Hazardous Waste Disposed; RWD = Radioactive Waste Disposed; CRU = Components for Recycling; MFR = Material for Recycling; MER = Material for Energy Recovery; EEE = Exported Electrical Energy; EET = Exported Thermal Energy										

Tabel 174 - Biogenic carbon at the factory gate

BIOGENIC CARBON PER KG		
Parameter	Unit	At the factory gate
Biogenic carbon content in the product	[kg C]	0.00E+00
Biogenic carbon content in the accompanying packaging	[kg C]	1.29E-01
Note	1 kg of biogenic carbon is equivalent to 44/12 kg of CO ₂	

RESULTS FOR GROUP 35 ACCORDING TO EN15804:2012+A2:2019

Tabel 175 – Potential environmental impacts, EN15804:2012+A2:2019 (LCIA)

ENVIRONMENTAL IMPACTS PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
GWP-total	[kg CO ₂ eq.]	2.52E+00	8.98E-03	1.03E+00	1.07E-02	6.31E-01	0.00E+00	1.07E-02	0.00E+00	1.18E-02	-5.53E-02
GWP-fossil	[kg CO ₂ eq.]	2.70E+00	8.97E-03	1.16E+00	1.07E-02	7.62E-02	0.00E+00	1.07E-02	0.00E+00	1.18E-02	-5.50E-02
GWP-biogenic	[kg CO ₂ eq.]	-1.77E-01	0.00E+00	-1.29E-01	0.00E+00	5.55E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GWP-luluc	[kg CO ₂ eq.]	2.53E-03	3.09E-06	1.91E-03	3.67E-06	3.97E-05	0.00E+00	3.67E-06	0.00E+00	1.99E-07	-2.67E-04
ODP	[kg CFC 11 eq.]	1.24E-07	1.82E-10	2.29E-08	2.16E-10	8.60E-10	0.00E+00	2.16E-10	0.00E+00	3.34E-11	-1.34E-09
AP	[mol H ⁺ eq.]	9.13E-03	3.58E-05	4.09E-03	4.25E-05	3.72E-04	0.00E+00	4.25E-05	0.00E+00	6.56E-06	-3.85E-04
EP-freshwater	[kg P eq.]	5.69E-04	6.14E-07	4.03E-04	7.29E-07	1.38E-05	0.00E+00	7.29E-07	0.00E+00	6.84E-08	-2.15E-05
EP-marine	[kg N eq.]	1.78E-03	1.34E-05	9.28E-04	1.59E-05	1.42E-04	0.00E+00	1.59E-05	0.00E+00	2.60E-05	-1.29E-04
EP-terrestrial	[mol N eq.]	1.78E-02	1.46E-04	9.06E-03	1.73E-04	1.49E-03	0.00E+00	1.73E-04	0.00E+00	2.97E-05	-1.45E-03
POCP	[kg NMVOC eq.]	1.42E-02	5.65E-05	3.02E-03	6.70E-05	4.34E-04	0.00E+00	6.70E-05	0.00E+00	1.42E-05	-4.61E-04
ADPm ¹	[kg Sb eq.]	2.35E-05	2.44E-08	2.83E-06	2.89E-08	2.58E-07	0.00E+00	2.89E-08	0.00E+00	2.17E-09	-3.26E-07
ADPf ¹	[MJ]	8.06E+01	1.31E-01	1.70E+01	1.55E-01	6.55E-01	0.00E+00	1.55E-01	0.00E+00	2.33E-02	-8.95E-01
WDP ¹	[m ³ world eq. deprived]	1.45E+00	6.23E-04	2.56E-01	7.40E-04	5.98E-03	0.00E+00	7.40E-04	0.00E+00	-5.14E-04	-1.05E-02
Abbreviation	GWP-total = Global warming, total; GWP-fossil = Global warming, fossil fuels; GWP-biogenic = Global warming, biogenic; GWP-luluc = Global warming, land use and land conversion; ODP = Ozone depletion; AP = Acidification; EP-freshwater = Eutrophication (nutrient loading) – freshwater; EP-marine = Eutrophication (nutrient loading) – marine; EP-terrestrial = Eutrophication (nutrient loading) – terrestrial; POCP = Photochemical ozone creation; ADPm = Depletion of abiotic resources – minerals and metals; ADPf = Depletion of abiotic fossil resources; WDP = Water consumption										
Remark	¹ The results for this environmental indicator should be used with caution, as the uncertainty surrounding the results is high or because there is limited experience with the indicator.										

Tabel 176 – Potential environmental impacts, EN15804:2012+A2:2019 (LCIA)

ENVIRONMENTAL IMPACTS PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
PM	[Disease incidence]	7.43E-08	9.12E-10	5.66E-08	1.08E-09	6.15E-09	0.00E+00	1.08E-09	0.00E+00	1.61E-10	-5.58E-09
IRP ²	[kBq U235 eq.]	2.24E-01	1.59E-04	1.64E-01	1.89E-04	6.13E-03	0.00E+00	1.89E-04	0.00E+00	3.50E-05	-9.34E-03
ETP-fw ¹	[CTUe]	1.05E+01	3.10E-02	3.66E+00	3.68E-02	5.23E-01	0.00E+00	3.68E-02	0.00E+00	6.46E-03	-3.96E-01
HTP-c ¹	[CTUh]	1.04E-08	5.58E-11	2.25E-09	6.63E-11	2.76E-10	0.00E+00	6.63E-11	0.00E+00	6.06E-12	-2.49E-10
HTP-nc ¹	[CTUh]	2.26E-08	8.44E-11	9.34E-09	1.00E-10	7.66E-10	0.00E+00	1.00E-10	0.00E+00	3.56E-11	-6.60E-10
SQP ¹	-	1.23E+01	1.32E-01	2.66E+01	1.56E-01	4.35E-01	0.00E+00	1.56E-01	0.00E+00	5.68E-02	-3.25E+01
Abbreviation	PM = Particulate matter; IRP = Ionizing radiation - human health; ETP-fw = Ecotoxicity - freshwater; HTP-c = Human toxicity - cancer effects; HTP-nc = Human toxicity - non-cancer effects; SQP = Soil quality (Dimensionless) consumption										
Remark	¹ The results for this environmental indicator should be used with caution, as the uncertainty surrounding the results is high or because there is limited experience with the indicator. ² This impact category primarily addresses the potential impact of low dose ionizing radiation on human health associated with nuclear fuel cycles. It does not take into account effects from possible nuclear accidents, occupational exposure or disposal of radioactive waste in underground facilities. Potential ionizing radiation from the soil, from radon and from certain building materials is also not measured by this indicator.										

Tabel 177 – Resource consumption, EN15804:2012+A2:2019 (LCI)

RESOURCE CONSUMPTION PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
PERE	[MJ]	1.62E+00	2.01E-03	2.89E+00	2.39E-03	3.63E-03	0.00E+00	2.39E-03	0.00E+00	6.34E-04	-5.22E+00
PERM	[MJ]	1.46E+00	0.00E+00	2.18E+00	0.00E+00	-4.66E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	[MJ]	3.08E+00	2.01E-03	5.07E+00	2.39E-03	-4.65E+00	0.00E+00	2.39E-03	0.00E+00	6.34E-04	-5.22E+00
PENRE	[MJ]	3.73E+01	1.31E-01	1.65E+01	1.55E-01	6.55E-01	0.00E+00	1.55E-01	0.00E+00	2.33E-02	-8.96E-01
PENRM	[MJ]	4.32E+01	0.00E+00	1.02E-01	0.00E+00	-4.63E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	[MJ]	8.06E+01	1.31E-01	1.66E+01	1.55E-01	1.92E-01	0.00E+00	1.55E-01	0.00E+00	2.33E-02	-8.96E-01
SM	[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	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	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	0.00E+00	0.00E+00
FW	[m ³]	2.09E-02	1.96E-05	1.88E-02	2.33E-05	3.78E-04	0.00E+00	2.33E-05	0.00E+00	-4.46E-04	-9.08E-04
Abbreviation	PERE = Consumption of renewable primary energy; PERM = Consumption of renewable primary energy resources used as raw materials; PERT = Total consumption of renewable primary energy resources; PENRE = Consumption of non-renewable primary energy; PENRM = Consumption of non-renewable primary energy resources used as raw materials; PENRT = Total consumption of non-renewable primary energy resources; SM = Consumption of secondary material; RSF = Consumption of renewable secondary fuel; NRSF = Consumption of non-renewable secondary fuel; FW = Net freshwater consumption										

Tabel 178 – End of life, EN15804:2012+A2:2019 (LCI)

WASTE CATEGORIES AND OUTPUT FLOWS PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
HWD	[kg]	1.51E-03	8.59E-07	7.31E-05	1.02E-06	6.02E-06	0.00E+00	1.02E-06	0.00E+00	1.57E-07	-8.73E-06
NHWD	[kg]	1.50E-01	1.12E-02	8.17E-02	1.33E-02	2.87E-02	0.00E+00	1.33E-02	0.00E+00	1.00E-01	-1.96E-02
RWD	[kg]	5.87E-05	3.93E-08	4.13E-05	4.67E-08	1.57E-06	0.00E+00	4.67E-08	0.00E+00	8.18E-09	-2.29E-06
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	0.00E+00	0.00E+00
MFR	[kg]	0.00E+00	0.00E+00	5.09E-02	0.00E+00	2.56E-01	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	0.00E+00	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	2.21E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EET	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.40E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Abbreviation	HWD = Hazardous Waste Disposed; NHWD = Non-Hazardous Waste Disposed; RWD = Radioactive Waste Disposed; CRU = Components for Recycling; MFR = Material for Recycling; MER = Material for Energy Recovery; EEE = Exported Electrical Energy; EET = Exported Thermal Energy										

Tabel 179 - Biogenic carbon at the factory gate

BIOGENIC CARBON PER KG		
Parameter	Unit	At the factory gate
Biogenic carbon content in the product	[kg C]	0.00E+00
Biogenic carbon content in the accompanying packaging	[kg C]	1.28E-01
Note	1 kg of biogenic carbon is equivalent to 44/12 kg of CO ₂	

RESULTS FOR GROUP 36 ACCORDING TO EN15804:2012+A2:2019

Tabel 180 – Potential environmental impacts, EN15804:2012+A2:2019 (LCIA)

ENVIRONMENTAL IMPACTS PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
GWP-total	[kg CO ₂ eq.]	2.47E+00	8.98E-03	1.06E+00	1.07E-02	7.80E-01	0.00E+00	1.07E-02	0.00E+00	1.18E-02	-7.00E-02
GWP-fossil	[kg CO ₂ eq.]	2.65E+00	8.97E-03	1.27E+00	1.07E-02	9.80E-02	0.00E+00	1.07E-02	0.00E+00	1.18E-02	-6.97E-02
GWP-biogenic	[kg CO ₂ eq.]	-1.77E-01	0.00E+00	-2.10E-01	0.00E+00	6.82E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GWP-luluc	[kg CO ₂ eq.]	2.44E-03	3.09E-06	2.39E-03	3.67E-06	4.99E-05	0.00E+00	3.67E-06	0.00E+00	1.99E-07	-3.34E-04
ODP	[kg CFC 11 eq.]	1.23E-07	1.82E-10	2.55E-08	2.16E-10	1.08E-09	0.00E+00	2.16E-10	0.00E+00	3.34E-11	-1.71E-09
AP	[mol H ⁺ eq.]	8.92E-03	3.58E-05	4.68E-03	4.25E-05	4.69E-04	0.00E+00	4.25E-05	0.00E+00	6.56E-06	-4.86E-04
EP-freshwater	[kg P eq.]	5.52E-04	6.14E-07	4.51E-04	7.29E-07	1.74E-05	0.00E+00	7.29E-07	0.00E+00	6.84E-08	-2.72E-05
EP-marine	[kg N eq.]	1.75E-03	1.34E-05	1.06E-03	1.59E-05	1.79E-04	0.00E+00	1.59E-05	0.00E+00	2.60E-05	-1.63E-04
EP-terrestrial	[mol N eq.]	1.74E-02	1.46E-04	1.03E-02	1.73E-04	1.87E-03	0.00E+00	1.73E-04	0.00E+00	2.97E-05	-1.83E-03
POCP	[kg NMVOC eq.]	1.40E-02	5.65E-05	3.45E-03	6.70E-05	5.47E-04	0.00E+00	6.70E-05	0.00E+00	1.42E-05	-5.81E-04
ADPm ¹	[kg Sb eq.]	2.19E-05	2.44E-08	3.28E-06	2.89E-08	3.25E-07	0.00E+00	2.89E-08	0.00E+00	2.17E-09	-4.16E-07
ADPf ¹	[MJ]	7.97E+01	1.31E-01	1.90E+01	1.55E-01	8.24E-01	0.00E+00	1.55E-01	0.00E+00	2.33E-02	-1.14E+00
WDP ¹	[m ³ world eq. deprived]	1.41E+00	6.23E-04	3.04E-01	7.40E-04	7.56E-03	0.00E+00	7.40E-04	0.00E+00	-5.14E-04	-1.34E-02
Abbreviation	GWP-total = Global warming, total; GWP-fossil = Global warming, fossil fuels; GWP-biogenic = Global warming, biogenic; GWP-luluc = Global warming, land use and land conversion; ODP = Ozone depletion; AP = Acidification; EP-freshwater = Eutrophication (nutrient loading) – freshwater; EP-marine = Eutrophication (nutrient loading) – marine; EP-terrestrial = Eutrophication (nutrient loading) – terrestrial; POCP = Photochemical ozone creation; ADPm = Depletion of abiotic resources – minerals and metals; ADPf = Depletion of abiotic fossil resources; WDP = Water consumption										
Remark	¹ The results for this environmental indicator should be used with caution, as the uncertainty surrounding the results is high or because there is limited experience with the indicator.										

Tabel 181 – Potential environmental impacts, EN15804:2012+A2:2019 (LCIA)

ENVIRONMENTAL IMPACTS PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
PM	[Disease incidence]	7.04E-08	9.12E-10	6.93E-08	1.08E-09	7.74E-09	0.00E+00	1.08E-09	0.00E+00	1.61E-10	-7.04E-09
IRP ²	[kBq U235 eq.]	2.16E-01	1.59E-04	1.89E-01	1.89E-04	7.71E-03	0.00E+00	1.89E-04	0.00E+00	3.50E-05	-1.18E-02
ETP-fw ¹	[CTUe]	1.02E+01	3.10E-02	4.24E+00	3.68E-02	6.61E-01	0.00E+00	3.68E-02	0.00E+00	6.46E-03	-5.00E-01
HTP-c ¹	[CTUh]	9.97E-09	5.58E-11	2.58E-09	6.63E-11	3.48E-10	0.00E+00	6.63E-11	0.00E+00	6.06E-12	-3.14E-10
HTP-nc ¹	[CTUh]	2.22E-08	8.44E-11	1.06E-08	1.00E-10	9.69E-10	0.00E+00	1.00E-10	0.00E+00	3.56E-11	-8.37E-10
SQP ¹	-	1.22E+01	1.32E-01	3.33E+01	1.56E-01	5.48E-01	0.00E+00	1.56E-01	0.00E+00	5.68E-02	-4.06E+01
Abbreviation	PM = Particulate matter; IRP = Ionizing radiation - human health; ETP-fw = Ecotoxicity - freshwater; HTP-c = Human toxicity - cancer effects; HTP-nc = Human toxicity - non-cancer effects; SQP = Soil quality (Dimensionless) consumption										
Remark	¹ The results for this environmental indicator should be used with caution, as the uncertainty surrounding the results is high or because there is limited experience with the indicator. ² This impact category primarily addresses the potential impact of low dose ionizing radiation on human health associated with nuclear fuel cycles. It does not take into account effects from possible nuclear accidents, occupational exposure or disposal of radioactive waste in underground facilities. Potential ionizing radiation from the soil, from radon and from certain building materials is also not measured by this indicator.										

Tabel 182 – Resource consumption, EN15804:2012+A2:2019 (LCI)

RESOURCE CONSUMPTION PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
PERE	[MJ]	1.53E+00	2.01E-03	3.51E+00	2.39E-03	4.83E-03	0.00E+00	2.39E-03	0.00E+00	6.34E-04	-6.51E+00
PERM	[MJ]	1.46E+00	0.00E+00	2.90E+00	0.00E+00	-5.77E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	[MJ]	2.99E+00	2.01E-03	6.42E+00	2.39E-03	-5.77E+00	0.00E+00	2.39E-03	0.00E+00	6.34E-04	-6.51E+00
PENRE	[MJ]	3.65E+01	1.31E-01	1.83E+01	1.55E-01	8.24E-01	0.00E+00	1.55E-01	0.00E+00	2.33E-02	-1.14E+00
PENRM	[MJ]	4.32E+01	0.00E+00	2.61E-01	0.00E+00	-6.21E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	[MJ]	7.97E+01	1.31E-01	1.86E+01	1.55E-01	2.02E-01	0.00E+00	1.55E-01	0.00E+00	2.33E-02	-1.14E+00
SM	[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	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	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	0.00E+00	0.00E+00
FW	[m ³]	1.99E-02	1.96E-05	2.05E-02	2.33E-05	4.77E-04	0.00E+00	2.33E-05	0.00E+00	-4.46E-04	-1.16E-03
Abbreviation	PERE = Consumption of renewable primary energy; PERM = Consumption of renewable primary energy resources used as raw materials; PERT = Total consumption of renewable primary energy resources; PENRE = Consumption of non-renewable primary energy; PENRM = Consumption of non-renewable primary energy resources used as raw materials; PENRT = Total consumption of non-renewable primary energy resources; SM = Consumption of secondary material; RSF = Consumption of renewable secondary fuel; NRSF = Consumption of non-renewable secondary fuel; FW = Net freshwater consumption										

Tabel 183 – End of life, EN15804:2012+A2:2019 (LCI)

WASTE CATEGORIES AND OUTPUT FLOWS PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
HWD	[kg]	1.50E-03	8.59E-07	8.74E-05	1.02E-06	7.58E-06	0.00E+00	1.02E-06	0.00E+00	1.57E-07	-1.13E-05
NHWD	[kg]	1.58E-01	1.12E-02	9.18E-02	1.33E-02	3.63E-02	0.00E+00	1.33E-02	0.00E+00	1.00E-01	-2.46E-02
RWD	[kg]	5.65E-05	3.93E-08	4.76E-05	4.67E-08	1.98E-06	0.00E+00	4.67E-08	0.00E+00	8.18E-09	-2.90E-06
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	0.00E+00	0.00E+00
MFR	[kg]	0.00E+00	0.00E+00	5.09E-02	0.00E+00	3.15E-01	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	0.00E+00	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	2.83E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EET	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.63E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Abbreviation	HWD = Hazardous Waste Disposed; NHWD = Non-Hazardous Waste Disposed; RWD = Radioactive Waste Disposed; CRU = Components for Recycling; MFR = Material for Recycling; MER = Material for Energy Recovery; EEE = Exported Electrical Energy; EET = Exported Thermal Energy										

Tabel 184 - Biogenic carbon at the factory gate

BIOGENIC CARBON PER KG		
Parameter	Unit	At the factory gate
Biogenic carbon content in the product	[kg C]	0.00E+00
Biogenic carbon content in the accompanying packaging	[kg C]	1.59E-01
Note	1 kg of biogenic carbon is equivalent to 44/12 kg of CO ₂	

RESULTS FOR GROUP 37 ACCORDING TO EN15804:2012+A2:2019

Tabel 185 – Potential environmental impacts, EN15804:2012+A2:2019 (LCIA)

ENVIRONMENTAL IMPACTS PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
GWP-total	[kg CO ₂ eq.]	2.47E+00	8.98E-03	1.01E+00	1.07E-02	6.20E-01	0.00E+00	1.07E-02	0.00E+00	1.18E-02	-5.01E-02
GWP-fossil	[kg CO ₂ eq.]	2.65E+00	8.97E-03	1.11E+00	1.07E-02	6.44E-02	0.00E+00	1.07E-02	0.00E+00	1.18E-02	-4.98E-02
GWP-biogenic	[kg CO ₂ eq.]	-1.77E-01	0.00E+00	-1.05E-01	0.00E+00	5.55E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GWP-luluc	[kg CO ₂ eq.]	2.44E-03	3.09E-06	1.75E-03	3.67E-06	3.67E-05	0.00E+00	3.67E-06	0.00E+00	1.99E-07	-2.54E-04
ODP	[kg CFC 11 eq.]	1.23E-07	1.82E-10	2.18E-08	2.16E-10	7.97E-10	0.00E+00	2.16E-10	0.00E+00	3.34E-11	-1.17E-09
AP	[mol H ⁺ eq.]	8.92E-03	3.58E-05	3.85E-03	4.25E-05	3.43E-04	0.00E+00	4.25E-05	0.00E+00	6.56E-06	-3.51E-04
EP-freshwater	[kg P eq.]	5.52E-04	6.14E-07	3.84E-04	7.29E-07	1.28E-05	0.00E+00	7.29E-07	0.00E+00	6.84E-08	-1.96E-05
EP-marine	[kg N eq.]	1.75E-03	1.34E-05	8.77E-04	1.59E-05	1.31E-04	0.00E+00	1.59E-05	0.00E+00	2.60E-05	-1.19E-04
EP-terrestrial	[mol N eq.]	1.74E-02	1.46E-04	8.57E-03	1.73E-04	1.37E-03	0.00E+00	1.73E-04	0.00E+00	2.97E-05	-1.33E-03
POCP	[kg NMVOC eq.]	1.40E-02	5.65E-05	2.83E-03	6.70E-05	4.01E-04	0.00E+00	6.70E-05	0.00E+00	1.42E-05	-4.23E-04
ADPm ¹	[kg Sb eq.]	2.19E-05	2.44E-08	2.63E-06	2.89E-08	2.37E-07	0.00E+00	2.89E-08	0.00E+00	2.17E-09	-2.87E-07
ADPf ¹	[MJ]	7.97E+01	1.31E-01	1.62E+01	1.55E-01	6.07E-01	0.00E+00	1.55E-01	0.00E+00	2.33E-02	-7.90E-01
WDP ¹	[m ³ world eq. deprived]	1.41E+00	6.23E-04	2.34E-01	7.40E-04	5.45E-03	0.00E+00	7.40E-04	0.00E+00	-5.14E-04	-8.93E-03
Abbreviation	GWP-total = Global warming, total; GWP-fossil = Global warming, fossil fuels; GWP-biogenic = Global warming, biogenic; GWP-luluc = Global warming, land use and land conversion; ODP = Ozone depletion; AP = Acidification; EP-freshwater = Eutrophication (nutrient loading) – freshwater; EP-marine = Eutrophication (nutrient loading) – marine; EP-terrestrial = Eutrophication (nutrient loading) – terrestrial; POCP = Photochemical ozone creation; ADPm = Depletion of abiotic resources – minerals and metals; ADPf = Depletion of abiotic fossil resources; WDP = Water consumption										
Remark	¹ The results for this environmental indicator should be used with caution, as the uncertainty surrounding the results is high or because there is limited experience with the indicator.										

Tabel 186 – Potential environmental impacts, EN15804:2012+A2:2019 (LCIA)

ENVIRONMENTAL IMPACTS PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
PM	[Disease incidence]	7.04E-08	9.12E-10	5.22E-08	1.08E-09	5.69E-09	0.00E+00	1.08E-09	0.00E+00	1.61E-10	-5.13E-09
IRP ²	[kBq U235 eq.]	2.16E-01	1.59E-04	1.55E-01	1.89E-04	5.67E-03	0.00E+00	1.89E-04	0.00E+00	3.50E-05	-8.42E-03
ETP-fw ¹	[CTUe]	1.02E+01	3.10E-02	3.42E+00	3.68E-02	4.80E-01	0.00E+00	3.68E-02	0.00E+00	6.46E-03	-3.62E-01
HTP-c ¹	[CTUh]	9.97E-09	5.58E-11	2.11E-09	6.63E-11	2.55E-10	0.00E+00	6.63E-11	0.00E+00	6.06E-12	-2.28E-10
HTP-nc ¹	[CTUh]	2.22E-08	8.44E-11	8.84E-09	1.00E-10	6.99E-10	0.00E+00	1.00E-10	0.00E+00	3.56E-11	-5.93E-10
SQP ¹	-	1.22E+01	1.32E-01	2.43E+01	1.56E-01	4.04E-01	0.00E+00	1.56E-01	0.00E+00	5.68E-02	-3.09E+01
Abbreviation	PM = Particulate matter; IRP = Ionizing radiation - human health; ETP-fw = Ecotoxicity - freshwater; HTP-c = Human toxicity - cancer effects; HTP-nc = Human toxicity - non-cancer effects; SQP = Soil quality (Dimensionless) consumption										
Remark	¹ The results for this environmental indicator should be used with caution, as the uncertainty surrounding the results is high or because there is limited experience with the indicator. ² This impact category primarily addresses the potential impact of low dose ionizing radiation on human health associated with nuclear fuel cycles. It does not take into account effects from possible nuclear accidents, occupational exposure or disposal of radioactive waste in underground facilities. Potential ionizing radiation from the soil, from radon and from certain building materials is also not measured by this indicator.										

Tabel 187 – Resource consumption, EN15804:2012+A2:2019 (LCI)

RESOURCE CONSUMPTION PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
PERE	[MJ]	1.53E+00	2.01E-03	2.68E+00	2.39E-03	2.61E-03	0.00E+00	2.39E-03	0.00E+00	6.34E-04	-4.99E+00
PERM	[MJ]	1.46E+00	0.00E+00	1.94E+00	0.00E+00	-4.54E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	[MJ]	2.99E+00	2.01E-03	4.61E+00	2.39E-03	-4.54E+00	0.00E+00	2.39E-03	0.00E+00	6.34E-04	-4.99E+00
PENRE	[MJ]	3.65E+01	1.31E-01	1.58E+01	1.55E-01	6.07E-01	0.00E+00	1.55E-01	0.00E+00	2.33E-02	-7.90E-01
PENRM	[MJ]	4.32E+01	0.00E+00	-3.96E-02	0.00E+00	-3.21E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	[MJ]	7.97E+01	1.31E-01	1.57E+01	1.55E-01	2.86E-01	0.00E+00	1.55E-01	0.00E+00	2.33E-02	-7.90E-01
SM	[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	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	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	0.00E+00	0.00E+00
FW	[m ³]	1.99E-02	1.96E-05	1.81E-02	2.33E-05	3.46E-04	0.00E+00	2.33E-05	0.00E+00	-4.46E-04	-8.02E-04
Abbreviation	PERE = Consumption of renewable primary energy; PERM = Consumption of renewable primary energy resources used as raw materials; PERT = Total consumption of renewable primary energy resources; PENRE = Consumption of non-renewable primary energy; PENRM = Consumption of non-renewable primary energy resources used as raw materials; PENRT = Total consumption of non-renewable primary energy resources; SM = Consumption of secondary material; RSF = Consumption of renewable secondary fuel; NRSF = Consumption of non-renewable secondary fuel; FW = Net freshwater consumption										

Tabel 188 – End of life, EN15804:2012+A2:2019 (LCI)

WASTE CATEGORIES AND OUTPUT FLOWS PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
HWD	[kg]	1.50E-03	8.59E-07	6.44E-05	1.02E-06	5.55E-06	0.00E+00	1.02E-06	0.00E+00	1.57E-07	-7.31E-06
NHWD	[kg]	1.58E-01	1.12E-02	7.78E-02	1.33E-02	2.64E-02	0.00E+00	1.33E-02	0.00E+00	1.00E-01	-1.83E-02
RWD	[kg]	5.65E-05	3.93E-08	3.89E-05	4.67E-08	1.45E-06	0.00E+00	4.67E-08	0.00E+00	8.18E-09	-2.07E-06
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	0.00E+00	0.00E+00
MFR	[kg]	0.00E+00	0.00E+00	5.09E-02	0.00E+00	2.54E-01	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	0.00E+00	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	1.94E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EET	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.86E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Abbreviation	HWD = Hazardous Waste Disposed; NHWD = Non-Hazardous Waste Disposed; RWD = Radioactive Waste Disposed; CRU = Components for Recycling; MFR = Material for Recycling; MER = Material for Energy Recovery; EEE = Exported Electrical Energy; EET = Exported Thermal Energy										

Tabel 189 - Biogenic carbon at the factory gate

BIOGENIC CARBON PER KG		
Parameter	Unit	At the factory gate
Biogenic carbon content in the product	[kg C]	0.00E+00
Biogenic carbon content in the accompanying packaging	[kg C]	1.26E-01
Note	1 kg of biogenic carbon is equivalent to 44/12 kg of CO ₂	

RESULTS FOR GROUP 38 ACCORDING TO EN15804:2012+A2:2019

Tabel 190 – Potential environmental impacts, EN15804:2012+A2:2019 (LCIA)

ENVIRONMENTAL IMPACTS PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
GWP-total	[kg CO ₂ eq.]	2.45E+00	8.98E-03	1.00E+00	1.07E-02	5.39E-01	0.00E+00	1.07E-02	0.00E+00	1.18E-02	-4.60E-02
GWP-fossil	[kg CO ₂ eq.]	2.62E+00	8.97E-03	1.09E+00	1.07E-02	5.98E-02	0.00E+00	1.07E-02	0.00E+00	1.18E-02	-4.58E-02
GWP-biogenic	[kg CO ₂ eq.]	-1.77E-01	0.00E+00	-8.60E-02	0.00E+00	4.80E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GWP-luluc	[kg CO ₂ eq.]	2.43E-03	3.09E-06	1.65E-03	3.67E-06	3.40E-05	0.00E+00	3.67E-06	0.00E+00	1.99E-07	-2.28E-04
ODP	[kg CFC 11 eq.]	1.23E-07	1.82E-10	2.12E-08	2.16E-10	7.40E-10	0.00E+00	2.16E-10	0.00E+00	3.34E-11	-1.08E-09
AP	[mol H ⁺ eq.]	8.30E-03	3.58E-05	3.73E-03	4.25E-05	3.20E-04	0.00E+00	4.25E-05	0.00E+00	6.56E-06	-3.25E-04
EP-freshwater	[kg P eq.]	5.43E-04	6.14E-07	3.74E-04	7.29E-07	1.19E-05	0.00E+00	7.29E-07	0.00E+00	6.84E-08	-1.80E-05
EP-marine	[kg N eq.]	1.72E-03	1.34E-05	8.48E-04	1.59E-05	1.22E-04	0.00E+00	1.59E-05	0.00E+00	2.60E-05	-1.10E-04
EP-terrestrial	[mol N eq.]	1.72E-02	1.46E-04	8.30E-03	1.73E-04	1.28E-03	0.00E+00	1.73E-04	0.00E+00	2.97E-05	-1.24E-03
POCP	[kg NMVOC eq.]	1.39E-02	5.65E-05	2.74E-03	6.70E-05	3.74E-04	0.00E+00	6.70E-05	0.00E+00	1.42E-05	-3.90E-04
ADPm ¹	[kg Sb eq.]	2.18E-05	2.44E-08	2.53E-06	2.89E-08	2.21E-07	0.00E+00	2.89E-08	0.00E+00	2.17E-09	-2.66E-07
ADPf ¹	[MJ]	7.94E+01	1.31E-01	1.58E+01	1.55E-01	5.63E-01	0.00E+00	1.55E-01	0.00E+00	2.33E-02	-7.26E-01
WDP ¹	[m ³ world eq. deprived]	1.38E+00	6.23E-04	2.24E-01	7.40E-04	5.10E-03	0.00E+00	7.40E-04	0.00E+00	-5.14E-04	-8.24E-03
Abbreviation	GWP-total = Global warming, total; GWP-fossil = Global warming, fossil fuels; GWP-biogenic = Global warming, biogenic; GWP-luluc = Global warming, land use and land conversion; ODP = Ozone depletion; AP = Acidification; EP-freshwater = Eutrophication (nutrient loading) – freshwater; EP-marine = Eutrophication (nutrient loading) – marine; EP-terrestrial = Eutrophication (nutrient loading) – terrestrial; POCP = Photochemical ozone creation; ADPm = Depletion of abiotic resources – minerals and metals; ADPf = Depletion of abiotic fossil resources; WDP = Water consumption										
Remark	¹ The results for this environmental indicator should be used with caution, as the uncertainty surrounding the results is high or because there is limited experience with the indicator.										

Tabel 191 – Potential environmental impacts, EN15804:2012+A2:2019 (LCIA)

ENVIRONMENTAL IMPACTS PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
PM	[Disease incidence]	6.77E-08	9.12E-10	4.96E-08	1.08E-09	5.32E-09	0.00E+00	1.08E-09	0.00E+00	1.61E-10	-4.77E-09
IRP ²	[kBq U235 eq.]	2.13E-01	1.59E-04	1.50E-01	1.89E-04	5.26E-03	0.00E+00	1.89E-04	0.00E+00	3.50E-05	-7.76E-03
ETP-fw ¹	[CTUe]	9.80E+00	3.10E-02	3.30E+00	3.68E-02	4.50E-01	0.00E+00	3.68E-02	0.00E+00	6.46E-03	-3.36E-01
HTP-c ¹	[CTUh]	9.86E-09	5.58E-11	2.03E-09	6.63E-11	2.35E-10	0.00E+00	6.63E-11	0.00E+00	6.06E-12	-2.08E-10
HTP-nc ¹	[CTUh]	2.19E-08	8.44E-11	8.57E-09	1.00E-10	6.46E-10	0.00E+00	1.00E-10	0.00E+00	3.56E-11	-5.47E-10
SQP ¹	-	1.20E+01	1.32E-01	2.28E+01	1.56E-01	3.75E-01	0.00E+00	1.56E-01	0.00E+00	5.68E-02	-2.82E+01
Abbreviation	PM = Particulate matter; IRP = Ionizing radiation - human health; ETP-fw = Ecotoxicity - freshwater; HTP-c = Human toxicity - cancer effects; HTP-nc = Human toxicity - non-cancer effects; SQP = Soil quality (Dimensionless) consumption										
Remark	¹ The results for this environmental indicator should be used with caution, as the uncertainty surrounding the results is high or because there is limited experience with the indicator. ² This impact category primarily addresses the potential impact of low dose ionizing radiation on human health associated with nuclear fuel cycles. It does not take into account effects from possible nuclear accidents, occupational exposure or disposal of radioactive waste in underground facilities. Potential ionizing radiation from the soil, from radon and from certain building materials is also not measured by this indicator.										

Tabel 192 – Resource consumption, EN15804:2012+A2:2019 (LCI)

RESOURCE CONSUMPTION PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
PERE	[MJ]	1.50E+00	2.01E-03	2.54E+00	2.39E-03	2.41E-03	0.00E+00	2.39E-03	0.00E+00	6.34E-04	-4.52E+00
PERM	[MJ]	1.46E+00	0.00E+00	1.77E+00	0.00E+00	-4.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	[MJ]	2.96E+00	2.01E-03	4.31E+00	2.39E-03	-3.99E+00	0.00E+00	2.39E-03	0.00E+00	6.34E-04	-4.52E+00
PENRE	[MJ]	3.61E+01	1.31E-01	1.54E+01	1.55E-01	5.63E-01	0.00E+00	1.55E-01	0.00E+00	2.33E-02	-7.26E-01
PENRM	[MJ]	4.32E+01	0.00E+00	-6.26E-02	0.00E+00	-2.98E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	[MJ]	7.94E+01	1.31E-01	1.53E+01	1.55E-01	2.65E-01	0.00E+00	1.55E-01	0.00E+00	2.33E-02	-7.26E-01
SM	[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	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	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	0.00E+00	0.00E+00
FW	[m ³]	1.91E-02	1.96E-05	1.77E-02	2.33E-05	3.22E-04	0.00E+00	2.33E-05	0.00E+00	-4.46E-04	-7.34E-04
Abbreviation	PERE = Consumption of renewable primary energy; PERM = Consumption of renewable primary energy resources used as raw materials; PERT = Total consumption of renewable primary energy resources; PENRE = Consumption of non-renewable primary energy; PENRM = Consumption of non-renewable primary energy resources used as raw materials; PENRT = Total consumption of non-renewable primary energy resources; SM = Consumption of secondary material; RSF = Consumption of renewable secondary fuel; NRSF = Consumption of non-renewable secondary fuel; FW = Net freshwater consumption										

Tabel 193 – End of life, EN15804:2012+A2:2019 (LCI)

WASTE CATEGORIES AND OUTPUT FLOWS PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
HWD	[kg]	1.50E-03	8.59E-07	6.16E-05	1.02E-06	5.18E-06	0.00E+00	1.02E-06	0.00E+00	1.57E-07	-6.78E-06
NHWD	[kg]	1.40E-01	1.12E-02	7.56E-02	1.33E-02	2.43E-02	0.00E+00	1.33E-02	0.00E+00	1.00E-01	-1.69E-02
RWD	[kg]	5.59E-05	3.93E-08	3.76E-05	4.67E-08	1.35E-06	0.00E+00	4.67E-08	0.00E+00	8.18E-09	-1.91E-06
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	0.00E+00	0.00E+00
MFR	[kg]	0.00E+00	0.00E+00	5.09E-02	0.00E+00	2.22E-01	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	0.00E+00	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	1.76E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EET	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.51E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Abbreviation	HWD = Hazardous Waste Disposed; NHWD = Non-Hazardous Waste Disposed; RWD = Radioactive Waste Disposed; CRU = Components for Recycling; MFR = Material for Recycling; MER = Material for Energy Recovery; EEE = Exported Electrical Energy; EET = Exported Thermal Energy										

Tabel 194 - Biogenic carbon at the factory gate

BIOGENIC CARBON PER KG		
Parameter	Unit	At the factory gate
Biogenic carbon content in the product	[kg C]	0.00E+00
Biogenic carbon content in the accompanying packaging	[kg C]	1.11E-01
Note	1 kg of biogenic carbon is equivalent to 44/12 kg of CO ₂	

RESULTS FOR GROUP 39 ACCORDING TO EN15804:2012+A2:2019

Tabel 195 – Potential environmental impacts, EN15804:2012+A2:2019 (LCIA)

ENVIRONMENTAL IMPACTS PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
GWP-total	[kg CO ₂ eq.]	2.66E+00	8.98E-03	9.85E-01	1.07E-02	4.73E-01	0.00E+00	1.07E-02	0.00E+00	1.18E-02	-3.76E-02
GWP-fossil	[kg CO ₂ eq.]	2.83E+00	8.97E-03	1.02E+00	1.07E-02	4.78E-02	0.00E+00	1.07E-02	0.00E+00	1.18E-02	-3.74E-02
GWP-biogenic	[kg CO ₂ eq.]	-1.77E-01	0.00E+00	-3.49E-02	0.00E+00	4.25E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GWP-luluc	[kg CO ₂ eq.]	3.76E-03	3.09E-06	1.34E-03	3.67E-06	2.77E-05	0.00E+00	3.67E-06	0.00E+00	1.99E-07	-1.93E-04
ODP	[kg CFC 11 eq.]	1.28E-07	1.82E-10	1.96E-08	2.16E-10	6.02E-10	0.00E+00	2.16E-10	0.00E+00	3.34E-11	-8.77E-10
AP	[mol H ⁺ eq.]	1.06E-02	3.58E-05	3.37E-03	4.25E-05	2.59E-04	0.00E+00	4.25E-05	0.00E+00	6.56E-06	-2.64E-04
EP-freshwater	[kg P eq.]	6.36E-04	6.14E-07	3.44E-04	7.29E-07	9.62E-06	0.00E+00	7.29E-07	0.00E+00	6.84E-08	-1.47E-05
EP-marine	[kg N eq.]	1.98E-03	1.34E-05	7.67E-04	1.59E-05	9.84E-05	0.00E+00	1.59E-05	0.00E+00	2.60E-05	-8.96E-05
EP-terrestrial	[mol N eq.]	1.93E-02	1.46E-04	7.52E-03	1.73E-04	1.03E-03	0.00E+00	1.73E-04	0.00E+00	2.97E-05	-1.00E-03
POCP	[kg NMVOC eq.]	1.48E-02	5.65E-05	2.48E-03	6.70E-05	3.02E-04	0.00E+00	6.70E-05	0.00E+00	1.42E-05	-3.19E-04
ADPm ¹	[kg Sb eq.]	6.96E-05	2.44E-08	2.27E-06	2.89E-08	1.78E-07	0.00E+00	2.89E-08	0.00E+00	2.17E-09	-2.15E-07
ADPf ¹	[MJ]	8.37E+01	1.31E-01	1.46E+01	1.55E-01	4.58E-01	0.00E+00	1.55E-01	0.00E+00	2.33E-02	-5.90E-01
WDP ¹	[m ³ world eq. deprived]	3.48E+00	6.23E-04	1.97E-01	7.40E-04	4.10E-03	0.00E+00	7.40E-04	0.00E+00	-5.14E-04	-6.63E-03
Abbreviation	GWP-total = Global warming, total; GWP-fossil = Global warming, fossil fuels; GWP-biogenic = Global warming, biogenic; GWP-luluc = Global warming, land use and land conversion; ODP = Ozone depletion; AP = Acidification; EP-freshwater = Eutrophication (nutrient loading) – freshwater; EP-marine = Eutrophication (nutrient loading) – marine; EP-terrestrial = Eutrophication (nutrient loading) – terrestrial; POCP = Photochemical ozone creation; ADPm = Depletion of abiotic resources – minerals and metals; ADPf = Depletion of abiotic fossil resources; WDP = Water consumption										
Remark	¹ The results for this environmental indicator should be used with caution, as the uncertainty surrounding the results is high or because there is limited experience with the indicator.										

Tabel 196 – Potential environmental impacts, EN15804:2012+A2:2019 (LCIA)

ENVIRONMENTAL IMPACTS PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
PM	[Disease incidence]	9.43E-08	9.12E-10	4.14E-08	1.08E-09	4.29E-09	0.00E+00	1.08E-09	0.00E+00	1.61E-10	-3.87E-09
IRP ²	[kBq U235 eq.]	3.20E-01	1.59E-04	1.34E-01	1.89E-04	4.28E-03	0.00E+00	1.89E-04	0.00E+00	3.50E-05	-6.32E-03
ETP-fw ¹	[CTUe]	1.34E+01	3.10E-02	2.95E+00	3.68E-02	3.61E-01	0.00E+00	3.68E-02	0.00E+00	6.46E-03	-2.72E-01
HTP-c ¹	[CTUh]	1.12E-08	5.58E-11	1.84E-09	6.63E-11	1.92E-10	0.00E+00	6.63E-11	0.00E+00	6.06E-12	-1.71E-10
HTP-nc ¹	[CTUh]	3.36E-08	8.44E-11	7.78E-09	1.00E-10	5.25E-10	0.00E+00	1.00E-10	0.00E+00	3.56E-11	-4.45E-10
SQP ¹	-	1.31E+01	1.32E-01	1.86E+01	1.56E-01	3.05E-01	0.00E+00	1.56E-01	0.00E+00	5.68E-02	-2.34E+01
Abbreviation	PM = Particulate matter; IRP = Ionizing radiation - human health; ETP-fw = Ecotoxicity - freshwater; HTP-c = Human toxicity - cancer effects; HTP-nc = Human toxicity - non-cancer effects; SQP = Soil quality (Dimensionless)r consumption										
Remark	¹ The results for this environmental indicator should be used with caution, as the uncertainty surrounding the results is high or because there is limited experience with the indicator. ² This impact category primarily addresses the potential impact of low dose ionizing radiation on human health associated with nuclear fuel cycles. It does not take into account effects from possible nuclear accidents, occupational exposure or disposal of radioactive waste in underground facilities. Potential ionizing radiation from the soil, from radon and from certain building materials is also not measured by this indicator.										

Tabel 197 – Resource consumption, EN15804:2012+A2:2019 (LCI)

RESOURCE CONSUMPTION PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
PERE	[MJ]	8.09E+00	2.01E-03	2.15E+00	2.39E-03	1.87E-03	0.00E+00	2.39E-03	0.00E+00	6.34E-04	-3.79E+00
PERM	[MJ]	1.46E+00	0.00E+00	1.32E+00	0.00E+00	-3.46E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	[MJ]	9.55E+00	2.01E-03	3.46E+00	2.39E-03	-3.46E+00	0.00E+00	2.39E-03	0.00E+00	6.34E-04	-3.79E+00
PENRE	[MJ]	4.05E+01	1.31E-01	1.43E+01	1.55E-01	4.58E-01	0.00E+00	1.55E-01	0.00E+00	2.33E-02	-5.90E-01
PENRM	[MJ]	4.32E+01	0.00E+00	-1.33E-01	0.00E+00	-2.28E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	[MJ]	8.37E+01	1.31E-01	1.42E+01	1.55E-01	2.31E-01	0.00E+00	1.55E-01	0.00E+00	2.33E-02	-5.90E-01
SM	[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	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	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	0.00E+00	0.00E+00
FW	[m³]	6.86E-02	1.96E-05	1.67E-02	2.33E-05	2.61E-04	0.00E+00	2.33E-05	0.00E+00	-4.46E-04	-5.99E-04
Abbreviation	PERE = Consumption of renewable primary energy; PERM = Consumption of renewable primary energy resources used as raw materials; PERT = Total consumption of renewable primary energy resources; PENRE = Consumption of non-renewable primary energy; PENRM = Consumption of non-renewable primary energy resources used as raw materials; PENRT = Total consumption of non-renewable primary energy resources; SM = Consumption of secondary material; RSF = Consumption of renewable secondary fuel; NRSF = Consumption of non-renewable secondary fuel; FW = Net freshwater consumption										

Tabel 198 – End of life, EN15804:2012+A2:2019 (LCI)

WASTE CATEGORIES AND OUTPUT FLOWS PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
HWD	[kg]	1.52E-03	8.59E-07	5.41E-05	1.02E-06	4.19E-06	0.00E+00	1.02E-06	0.00E+00	1.57E-07	-5.41E-06
NHWD	[kg]	3.81E-01	1.12E-02	6.95E-02	1.33E-02	1.99E-02	0.00E+00	1.33E-02	0.00E+00	1.00E-01	-1.38E-02
RWD	[kg]	8.93E-05	3.93E-08	3.36E-05	4.67E-08	1.10E-06	0.00E+00	4.67E-08	0.00E+00	8.18E-09	-1.55E-06
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	0.00E+00	0.00E+00
MFR	[kg]	0.00E+00	0.00E+00	5.09E-02	0.00E+00	1.95E-01	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	0.00E+00	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	1.44E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EET	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.88E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Abbreviation	HWD = Hazardous Waste Disposed; NHWD = Non-Hazardous Waste Disposed; RWD = Radioactive Waste Disposed; CRU = Components for Recycling; MFR = Material for Recycling; MER = Material for Energy Recovery; EEE = Exported Electrical Energy; EET = Exported Thermal Energy										

Tabel 199 - Biogenic carbon at the factory gate

BIOGENIC CARBON PER KG		
Parameter	Unit	At the factory gate
Biogenic carbon content in the product	[kg C]	0.00E+00
Biogenic carbon content in the accompanying packaging	[kg C]	9.62E-02
Note	1 kg of biogenic carbon is equivalent to 44/12 kg of CO ₂	

RESULTS FOR GROUP 40 ACCORDING TO EN15804:2012+A2:2019

Tabel 200 – Potential environmental impacts, EN15804:2012+A2:2019 (LCIA)

ENVIRONMENTAL IMPACTS PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
GWP-total	[kg CO ₂ eq.]	4.05E+00	8.55E-02	4.97E-01	1.07E-02	1.09E-01	0.00E+00	1.07E-02	5.37E-01	0.00E+00	-2.21E+00
GWP-fossil	[kg CO ₂ eq.]	4.23E+00	8.54E-02	3.71E-01	1.07E-02	1.20E-02	0.00E+00	1.07E-02	5.36E-01	0.00E+00	-2.21E+00
GWP-biogenic	[kg CO ₂ eq.]	-1.77E-01	0.00E+00	1.26E-01	0.00E+00	9.69E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GWP-luluc	[kg CO ₂ eq.]	4.07E-03	2.94E-05	3.51E-04	3.67E-06	6.69E-06	0.00E+00	3.67E-06	7.44E-04	0.00E+00	-8.42E-04
ODP	[kg CFC 11 eq.]	5.83E-08	1.73E-09	8.94E-09	2.16E-10	1.45E-10	0.00E+00	2.16E-10	6.34E-09	0.00E+00	-1.18E-08
AP	[mol H ⁺ eq.]	3.83E-02	3.41E-04	9.11E-04	4.25E-05	6.28E-05	0.00E+00	4.25E-05	2.39E-03	0.00E+00	-8.87E-03
EP-freshwater	[kg P eq.]	1.91E-03	5.85E-06	8.12E-05	7.29E-07	2.33E-06	0.00E+00	7.29E-07	2.86E-04	0.00E+00	-1.00E-03
EP-marine	[kg N eq.]	4.63E-03	1.28E-04	2.35E-04	1.59E-05	2.39E-05	0.00E+00	1.59E-05	5.20E-04	0.00E+00	-1.96E-03
EP-terrestrial	[mol N eq.]	1.33E-01	1.39E-03	2.32E-03	1.73E-04	2.51E-04	0.00E+00	1.73E-04	5.37E-03	0.00E+00	-2.12E-02
POCP	[kg NMVOC eq.]	1.36E-02	5.38E-04	8.52E-04	6.70E-05	7.33E-05	0.00E+00	6.70E-05	1.72E-03	0.00E+00	-7.13E-03
ADPm ¹	[kg Sb eq.]	9.48E-05	2.32E-07	6.89E-07	2.89E-08	4.34E-08	0.00E+00	2.89E-08	3.06E-06	0.00E+00	-1.80E-05
ADPf ¹	[MJ]	5.32E+01	1.24E+00	5.02E+00	1.55E-01	1.11E-01	0.00E+00	1.55E-01	7.64E+00	0.00E+00	-2.28E+01
WDP ¹	[m ³ world eq. deprived]	9.92E-01	5.94E-03	6.47E-02	7.40E-04	1.00E-03	0.00E+00	7.40E-04	2.84E-01	0.00E+00	-4.23E-01
Abbreviation	GWP-total = Global warming, total; GWP-fossil = Global warming, fossil fuels; GWP-biogenic = Global warming, biogenic; GWP-luluc = Global warming, land use and land conversion; ODP = Ozone depletion; AP = Acidification; EP-freshwater = Eutrophication (nutrient loading) – freshwater; EP-marine = Eutrophication (nutrient loading) – marine; EP-terrestrial = Eutrophication (nutrient loading) – terrestrial; POCP = Photochemical ozone creation; ADPm = Depletion of abiotic resources – minerals and metals; ADPf = Depletion of abiotic fossil resources; WDP = Water consumption										
Remark	¹ The results for this environmental indicator should be used with caution, as the uncertainty surrounding the results is high or because there is limited experience with the indicator.										

Tabel 201 – Potential environmental impacts, EN15804:2012+A2:2019 (LCIA)

ENVIRONMENTAL IMPACTS PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
PM	[Disease incidence]	4.64E-07	8.69E-09	1.19E-08	1.08E-09	1.04E-09	0.00E+00	1.08E-09	5.61E-08	0.00E+00	-1.65E-07
IRP ²	[kBq U235 eq.]	4.17E-01	1.51E-03	3.21E-02	1.89E-04	1.03E-03	0.00E+00	1.89E-04	1.38E-01	0.00E+00	-7.42E-02
ETP-fw ¹	[CTUe]	1.77E+02	2.95E-01	9.89E-01	3.68E-02	8.80E-02	0.00E+00	3.68E-02	3.21E+00	0.00E+00	-1.33E+02
HTP-c ¹	[CTUh]	5.53E-07	5.31E-10	7.27E-10	6.63E-11	4.64E-11	0.00E+00	6.63E-11	6.54E-09	0.00E+00	-4.97E-07
HTP-nc ¹	[CTUh]	5.65E-08	8.03E-10	2.40E-09	1.00E-10	1.28E-10	0.00E+00	1.00E-10	9.02E-09	0.00E+00	-2.04E-08
SQP ¹	-	2.31E+01	1.25E+00	4.65E+00	1.56E-01	7.36E-02	0.00E+00	1.56E-01	2.68E+00	0.00E+00	-1.25E+01
Abbreviation	PM = Particulate matter; IRP = Ionizing radiation - human health; ETP-fw = Ecotoxicity - freshwater; HTP-c = Human toxicity - cancer effects; HTP-nc = Human toxicity - non-cancer effects; SQP = Soil quality (Dimensionless)r consumption										
Remark	¹ The results for this environmental indicator should be used with caution, as the uncertainty surrounding the results is high or because there is limited experience with the indicator. ² This impact category primarily addresses the potential impact of low dose ionizing radiation on human health associated with nuclear fuel cycles. It does not take into account effects from possible nuclear accidents, occupational exposure or disposal of radioactive waste in underground facilities. Potential ionizing radiation from the soil, from radon and from certain building materials is also not measured by this indicator.										

Tabel 202 – Resource consumption, EN15804:2012+A2:2019 (LCI)

RESOURCE CONSUMPTION PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
PERE	[MJ]	5.34E+00	1.92E-02	5.19E-01	2.39E-03	5.02E-04	0.00E+00	2.39E-03	1.26E+00	0.00E+00	-3.11E+00
PERM	[MJ]	1.46E+00	0.00E+00	-9.05E-02	0.00E+00	-8.02E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	[MJ]	6.80E+00	1.92E-02	4.28E-01	2.39E-03	-8.02E-01	0.00E+00	2.39E-03	1.26E+00	0.00E+00	-3.11E+00
PENRE	[MJ]	5.22E+01	1.24E+00	4.87E+00	1.55E-01	1.11E-01	0.00E+00	1.55E-01	7.65E+00	0.00E+00	-2.28E+01
PENRM	[MJ]	9.69E-01	0.00E+00	-2.98E-01	0.00E+00	-6.25E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	[MJ]	5.32E+01	1.24E+00	4.58E+00	1.55E-01	4.81E-02	0.00E+00	1.55E-01	7.65E+00	0.00E+00	-2.28E+01
SM	[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	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	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	0.00E+00	0.00E+00
FW	[m ³]	3.47E-02	1.87E-04	3.86E-03	2.33E-05	6.33E-05	0.00E+00	2.33E-05	9.48E-03	0.00E+00	-1.31E-02
Abbreviation	PERE = Consumption of renewable primary energy; PERM = Consumption of renewable primary energy resources used as raw materials; PERT = Total consumption of renewable primary energy resources; PENRE = Consumption of non-renewable primary energy; PENRM = Consumption of non-renewable primary energy resources used as raw materials; PENRT = Total consumption of non-renewable primary energy resources; SM = Consumption of secondary material; RSF = Consumption of renewable secondary fuel; NRSF = Consumption of non-renewable secondary fuel; FW = Net freshwater consumption										

Tabel 203 – End of life, EN15804:2012+A2:2019 (LCI)

WASTE CATEGORIES AND OUTPUT FLOWS PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
HWD	[kg]	7.52E-04	8.18E-06	2.26E-05	1.02E-06	1.02E-06	0.00E+00	1.02E-06	1.93E-05	0.00E+00	-1.93E-04
NHWD	[kg]	3.56E-01	1.07E-01	4.20E-02	1.33E-02	4.80E-03	0.00E+00	1.33E-02	5.89E-02	0.00E+00	-1.10E-01
RWD	[kg]	1.08E-04	3.74E-07	8.07E-06	4.67E-08	2.65E-07	0.00E+00	4.67E-08	3.53E-05	0.00E+00	-1.88E-05
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	0.00E+00	0.00E+00
MFR	[kg]	0.00E+00	0.00E+00	5.09E-02	0.00E+00	4.47E-02	0.00E+00	0.00E+00	1.00E+00	0.00E+00	0.00E+00
MER	[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	0.00E+00	0.00E+00
EEE	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.54E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EET	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.05E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Abbreviation	HWD = Hazardous Waste Disposed; NHWD = Non-Hazardous Waste Disposed; RWD = Radioactive Waste Disposed; CRU = Components for Recycling; MFR = Material for Recycling; MER = Material for Energy Recovery; EEE = Exported Electrical Energy; EET = Exported Thermal Energy										

Tabel 204 - Biogenic carbon at the factory gate

BIOGENIC CARBON PER KG		
Parameter	Unit	At the factory gate
Biogenic carbon content in the product	[kg C]	0.00E+00
Biogenic carbon content in the accompanying packaging	[kg C]	2.22E-02
Note	1 kg of biogenic carbon is equivalent to 44/12 kg of CO ₂	

RESULTS FOR GROUP 41 ACCORDING TO EN15804:2012+A2:2019

Tabel 205 – Potential environmental impacts, EN15804:2012+A2:2019 (LCIA)

ENVIRONMENTAL IMPACTS PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
GWP-total	[kg CO ₂ eq.]	4.05E+00	2.60E-01	4.82E-01	1.07E-02	6.41E-03	0.00E+00	1.07E-02	5.37E-01	0.00E+00	-2.20E+00
GWP-fossil	[kg CO ₂ eq.]	4.23E+00	2.60E-01	3.05E-01	1.07E-02	9.45E-05	0.00E+00	1.07E-02	5.36E-01	0.00E+00	-2.20E+00
GWP-biogenic	[kg CO ₂ eq.]	-1.77E-01	0.00E+00	1.77E-01	0.00E+00	6.32E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GWP-luluc	[kg CO ₂ eq.]	4.07E-03	8.95E-05	4.75E-05	3.67E-06	7.76E-08	0.00E+00	3.67E-06	7.44E-04	0.00E+00	-7.98E-04
ODP	[kg CFC 11 eq.]	5.83E-08	5.26E-09	7.38E-09	2.16E-10	1.76E-12	0.00E+00	2.16E-10	6.34E-09	0.00E+00	-1.16E-08
AP	[mol H ⁺ eq.]	3.83E-02	1.04E-03	5.57E-04	4.25E-05	4.84E-07	0.00E+00	4.25E-05	2.39E-03	0.00E+00	-8.81E-03
EP-freshwater	[kg P eq.]	1.91E-03	1.78E-05	5.24E-05	7.29E-07	2.29E-08	0.00E+00	7.29E-07	2.86E-04	0.00E+00	-9.96E-04
EP-marine	[kg N eq.]	4.63E-03	3.88E-04	1.55E-04	1.59E-05	1.85E-07	0.00E+00	1.59E-05	5.20E-04	0.00E+00	-1.94E-03
EP-terrestrial	[mol N eq.]	1.33E-01	4.23E-03	1.56E-03	1.73E-04	1.89E-06	0.00E+00	1.73E-04	5.37E-03	0.00E+00	-2.10E-02
POCP	[kg NMVOC eq.]	1.36E-02	1.64E-03	6.01E-04	6.70E-05	6.24E-07	0.00E+00	6.70E-05	1.72E-03	0.00E+00	-7.05E-03
ADPm ¹	[kg Sb eq.]	9.48E-05	7.06E-07	4.34E-07	2.89E-08	2.65E-10	0.00E+00	2.89E-08	3.06E-06	0.00E+00	-1.79E-05
ADPf ¹	[MJ]	5.32E+01	3.79E+00	3.88E+00	1.55E-01	1.44E-03	0.00E+00	1.55E-01	7.64E+00	0.00E+00	-2.27E+01
WDP ¹	[m ³ world eq. deprived]	9.92E-01	1.81E-02	3.77E-02	7.40E-04	6.21E-06	0.00E+00	7.40E-04	2.84E-01	0.00E+00	-4.21E-01
Abbreviation	GWP-total = Global warming, total; GWP-fossil = Global warming, fossil fuels; GWP-biogenic = Global warming, biogenic; GWP-luluc = Global warming, land use and land conversion; ODP = Ozone depletion; AP = Acidification; EP-freshwater = Eutrophication (nutrient loading) – freshwater; EP-marine = Eutrophication (nutrient loading) – marine; EP-terrestrial = Eutrophication (nutrient loading) – terrestrial; POCP = Photochemical ozone creation; ADPm = Depletion of abiotic resources – minerals and metals; ADPf = Depletion of abiotic fossil resources; WDP = Water consumption										
Remark	¹ The results for this environmental indicator should be used with caution, as the uncertainty surrounding the results is high or because there is limited experience with the indicator.										

Tabel 206 – Potential environmental impacts, EN15804:2012+A2:2019 (LCIA)

ENVIRONMENTAL IMPACTS PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
PM	[Disease incidence]	4.64E-07	2.64E-08	4.00E-09	1.08E-09	7.90E-12	0.00E+00	1.08E-09	5.61E-08	0.00E+00	-1.64E-07
IRP ²	[kBq U235 eq.]	4.17E-01	4.60E-03	1.70E-02	1.89E-04	1.26E-05	0.00E+00	1.89E-04	1.38E-01	0.00E+00	-7.27E-02
ETP-fw ¹	[CTUe]	1.77E+02	8.98E-01	6.53E-01	3.68E-02	4.88E-04	0.00E+00	3.68E-02	3.21E+00	0.00E+00	-1.33E+02
HTP-c ¹	[CTUh]	5.53E-07	1.62E-09	5.34E-10	6.63E-11	7.45E-13	0.00E+00	6.63E-11	6.54E-09	0.00E+00	-4.97E-07
HTP-nc ¹	[CTUh]	5.65E-08	2.44E-09	1.63E-09	1.00E-10	1.75E-12	0.00E+00	1.00E-10	9.02E-09	0.00E+00	-2.03E-08
SQP ¹	-	2.31E+01	3.81E+00	4.24E-01	1.56E-01	8.86E-04	0.00E+00	1.56E-01	2.68E+00	0.00E+00	-7.10E+00
Abbreviation	PM = Particulate matter; IRP = Ionizing radiation - human health; ETP-fw = Ecotoxicity - freshwater; HTP-c = Human toxicity - cancer effects; HTP-nc = Human toxicity - non-cancer effects; SQP = Soil quality (Dimensionless)r consumption										
Remark	¹ The results for this environmental indicator should be used with caution, as the uncertainty surrounding the results is high or because there is limited experience with the indicator. ² This impact category primarily addresses the potential impact of low dose ionizing radiation on human health associated with nuclear fuel cycles. It does not take into account effects from possible nuclear accidents, occupational exposure or disposal of radioactive waste in underground facilities. Potential ionizing radiation from the soil, from radon and from certain building materials is also not measured by this indicator.										

Tabel 207 – Resource consumption, EN15804:2012+A2:2019 (LCI)

RESOURCE CONSUMPTION PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
PERE	[MJ]	5.34E+00	5.83E-02	1.28E-01	2.39E-03	3.03E-06	0.00E+00	2.39E-03	1.26E+00	0.00E+00	-2.24E+00
PERM	[MJ]	1.46E+00	0.00E+00	-5.41E-01	0.00E+00	-4.10E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	[MJ]	6.80E+00	5.83E-02	-4.14E-01	2.39E-03	-4.10E-02	0.00E+00	2.39E-03	1.26E+00	0.00E+00	-2.24E+00
PENRE	[MJ]	5.22E+01	3.79E+00	3.80E+00	1.55E-01	1.44E-03	0.00E+00	1.55E-01	7.65E+00	0.00E+00	-2.27E+01
PENRM	[MJ]	9.69E-01	0.00E+00	-3.61E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	[MJ]	5.32E+01	3.79E+00	3.44E+00	1.55E-01	1.44E-03	0.00E+00	1.55E-01	7.65E+00	0.00E+00	-2.27E+01
SM	[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	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	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	0.00E+00	0.00E+00
FW	[m ³]	3.47E-02	5.68E-04	2.85E-03	2.33E-05	6.40E-07	0.00E+00	2.33E-05	9.48E-03	0.00E+00	-1.30E-02
Abbreviation	PERE = Consumption of renewable primary energy; PERM = Consumption of renewable primary energy resources used as raw materials; PERT = Total consumption of renewable primary energy resources; PENRE = Consumption of non-renewable primary energy; PENRM = Consumption of non-renewable primary energy resources used as raw materials; PENRT = Total consumption of non-renewable primary energy resources; SM = Consumption of secondary material; RSF = Consumption of renewable secondary fuel; NRSF = Consumption of non-renewable secondary fuel; FW = Net freshwater consumption										

Tabel 208 – End of life, EN15804:2012+A2:2019 (LCI)

WASTE CATEGORIES AND OUTPUT FLOWS PER KG											
Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
HWD	[kg]	7.52E-04	2.49E-05	1.54E-05	1.02E-06	8.36E-09	0.00E+00	1.02E-06	1.93E-05	0.00E+00	-1.92E-04
NHWD	[kg]	3.56E-01	3.24E-01	3.59E-02	1.33E-02	8.64E-05	0.00E+00	1.33E-02	5.89E-02	0.00E+00	-1.06E-01
RWD	[kg]	1.08E-04	1.14E-06	4.23E-06	4.67E-08	3.22E-09	0.00E+00	4.67E-08	3.53E-05	0.00E+00	-1.84E-05
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	0.00E+00	0.00E+00
MFR	[kg]	0.00E+00	0.00E+00	5.09E-02	0.00E+00	2.56E-03	0.00E+00	0.00E+00	1.00E+00	0.00E+00	0.00E+00
MER	[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	0.00E+00	0.00E+00
EEE	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.55E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EET	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.72E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Abbreviation	HWD = Hazardous Waste Disposed; NHWD = Non-Hazardous Waste Disposed; RWD = Radioactive Waste Disposed; CRU = Components for Recycling; MFR = Material for Recycling; MER = Material for Energy Recovery; EEE = Exported Electrical Energy; EET = Exported Thermal Energy										

Tabel 209 - Biogenic carbon at the factory gate

BIOGENIC CARBON PER KG		
Parameter	Unit	At the factory gate
Biogenic carbon content in the product	[kg C]	0.00E+00
Biogenic carbon content in the accompanying packaging	[kg C]	1.17E-03
Note	1 kg of biogenic carbon is equivalent to 44/12 kg of CO ₂	

Additional information

LCA interpretation

Figure 7 shows LCIA contributions for the different life cycle modules for group 1. Although the figure is only made for group 1, the other groups show a similar pattern, with module A1 (production of purchased raw materials) contributing the most to the majority of the 13 indicators. The second most important module is A3, which covers Tillex's production, and the third most important module is typically C3, which covers incineration/recycling of the materials after end-of-life. The other modules involving transport (A2, A4 and C2) contribute typically 1% in total, and the installation in A5 (disposal of product packaging) contributes with negligible emissions.

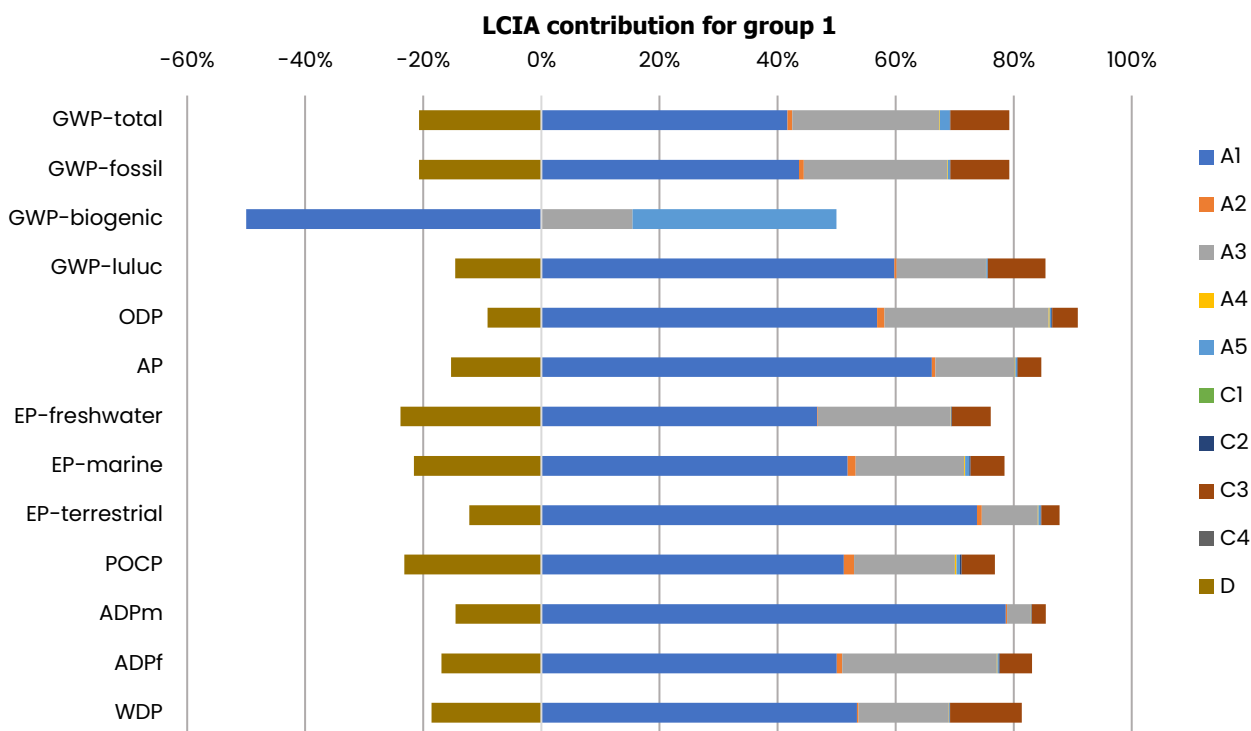


Figure 7– LCIA contribution for group 1.

Figure 8 shows the contribution of all modules to the GWP total for all groups. In general, the figure shows that module A1, module A3 and C3 contribute most to the groups that include cable clips, while the contribution from A5 is more prominent for the groups that include plugs, as these products are disposed of in C4 without any influence from C3 (incineration/recycling). The avoided emissions in module D mainly come from the avoided production of cast steel when nails and screws from cable clips are recycled.

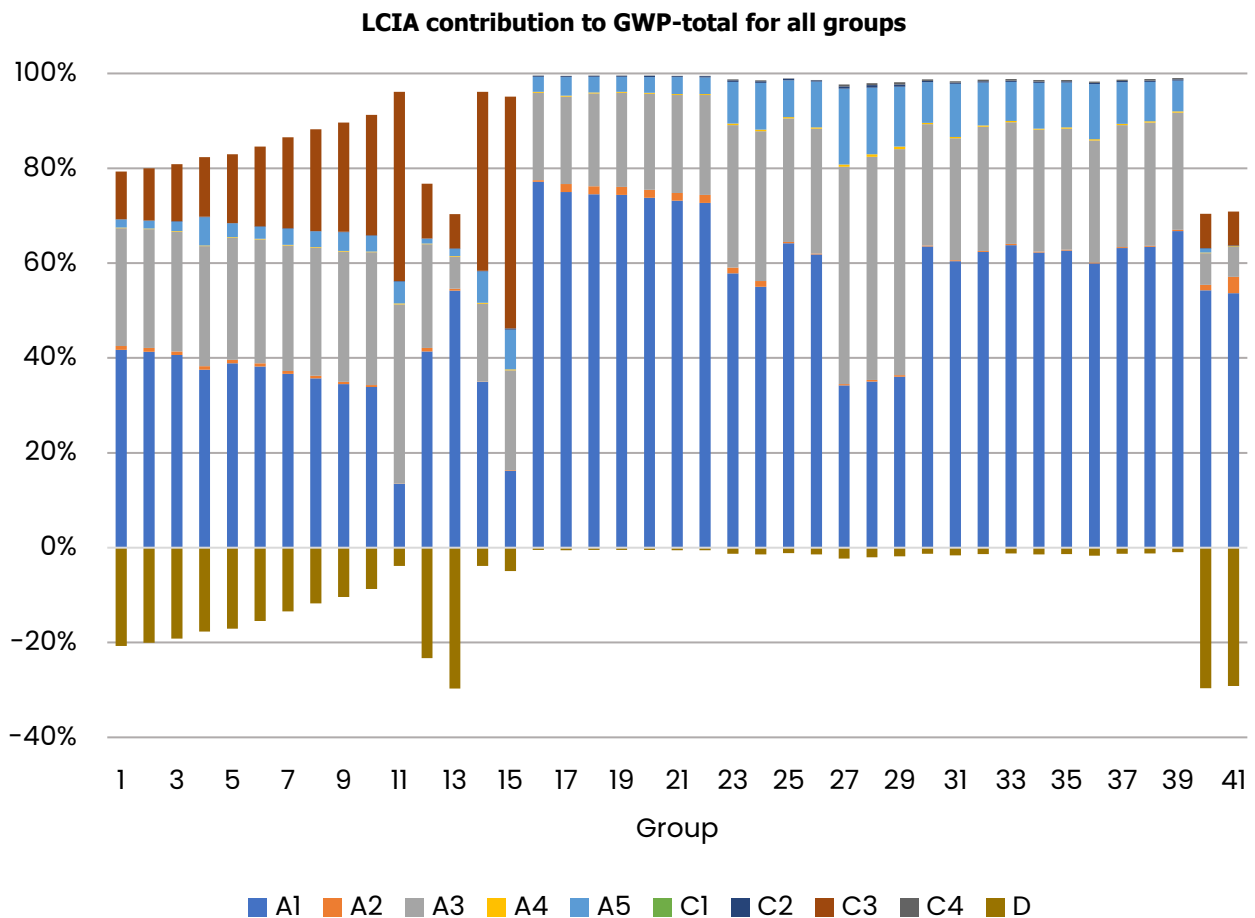


Figure 8– LCIA contribution to GWP total for all groups.

Technical information about underlying scenarios

Transport to the construction site (A4)

Name	Value	Unit
Fuel quantity and type (alternatively: transport type)	>32 ton truck (EURO4)	
Transport distance	Diesel consumption: 0.02 kg/h*km	-
Capacity utilization (incl. empty return run)	100	km
Gross density of transported product	61	%
Capacity utilization, volume factor	Varies from product to product	kg/m3

Installation in the building (A5)

Name	Value	Unit
Installation support materials	0	kg
Water consumption	0	m ³
Other resources	0	kg
Energy type and consumption (e.g. electricity consumption including grid-mix type)	0	kWh
Waste materials	Different for individual products. See table on sales packaging per kg in Table 4.	-
Output materials in connection with waste management on site	0	kg
Direct emissions to air, soil and water	0	kg

End of life/Disposal (C1-C4)

Group no.	Separated waste (kg/kg)	Mixed waste (kg/kg)	Recycling (kg/kg)	Reuse (kg/kg)	Energy recovery (kg/kg)	Landfill (kg/kg)
1	1.00E+00	0.00E+00	0.00E+00	8.23E-01	1.77E-01	0.00E+00
2	1.00E+00	0.00E+00	0.00E+00	7.86E-01	2.14E-01	0.00E+00
3	1.00E+00	0.00E+00	0.00E+00	7.41E-01	2.59E-01	0.00E+00
4	1.00E+00	0.00E+00	0.00E+00	6.89E-01	3.11E-01	0.00E+00
5	1.00E+00	0.00E+00	0.00E+00	6.39E-01	3.61E-01	0.00E+00
6	1.00E+00	0.00E+00	0.00E+00	5.56E-01	4.44E-01	0.00E+00
7	1.00E+00	0.00E+00	0.00E+00	4.59E-01	5.41E-01	0.00E+00
8	1.00E+00	0.00E+00	0.00E+00	3.80E-01	6.20E-01	0.00E+00
9	1.00E+00	0.00E+00	0.00E+00	3.16E-01	6.84E-01	0.00E+00
10	1.00E+00	0.00E+00	0.00E+00	2.42E-01	7.58E-01	0.00E+00
11	1.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E+00	0.00E+00
12	1.00E+00	0.00E+00	0.00E+00	1.00E+00	0.00E+00	0.00E+00
13	1.00E+00	0.00E+00	0.00E+00	1.00E+00	0.00E+00	0.00E+00
14	1.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E+00	0.00E+00
15	1.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E+00	0.00E+00
16	0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E-01
17	0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E-01
18	0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E-01
19	0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E-01
20	0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E-01
21	0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E-01
22	0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E-01
23	0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E-01
24	0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E-01
25	0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	2.00E-03
26	0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	2.00E-03
27	0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E-01
28	0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E-01
29	0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E-01
30	0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E-01
31	0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E-01
32	0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E-01
33	0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E-01
34	0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E-01
35	0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E-01
36	0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E-01
37	0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E-01
38	0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E-01
39	0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E-01
40	1.00E+00	0.00E+00	0.00E+00	1.00E+00	0.00E+00	0.00E+00
41	1.00E+00	0.00E+00	0.00E+00	1.00E+00	0.00E+00	0.00E+00

Reuse, recycling and/or reuse potential (D)

Overview of the amount of electricity and heat production (MJ/kg) that can be substituted by incinerating packaging in module A5 and plastic in C3.

Group no.	Substitution of electricity (MJ/kg)	Heat substitution (MJ/kg)
1	-8.08E-01	-1.57E+00
2	-9.58E-01	-1.86E+00
3	-1.16E+00	-2.27E+00
4	-1.62E+00	-3.16E+00
5	-1.68E+00	-3.26E+00
6	-1.99E+00	-3.87E+00
7	-2.40E+00	-4.68E+00
8	-2.76E+00	-5.37E+00
9	-3.10E+00	-6.02E+00
10	-3.39E+00	-6.59E+00
11	-4.08E+00	-7.97E+00
12	-5.87E-02	-1.17E-01
13	-6.18E-02	-1.23E-01
14	-4.51E+00	-8.77E+00
15	-4.15E+00	-8.10E+00
16	-9.48E-02	-1.89E-01
17	-1.15E-01	-2.29E-01

Group no.	Substitution of electricity (MJ/kg)	Heat substitution (MJ/kg)
18	-9,01E-02	-1.80E-01
19	-8.44E-02	-1.69E-01
20	-8.68E-02	-1.73E-01
21	-9,19E-02	-1.84E-01
22	-8.99E-02	-1.79E-01
23	-1.64E-01	-3.27E-01
24	-1.75E-01	-3.50E-01
25	-2.21E-01	-4.40E-01
26	-1.74E-01	-3.46E-01
27	-1.95E-01	-3.88E-01
28	-1,49E-01	-2,98E-01
29	-2,24E-01	-4,46E-01
30	-3,03E-01	-5,97E-01
31	-4,14E-01	-8,25E-01
32	-2,24E-01	-4,46E-01
33	-2,22E-01	-4,42E-01
34	-2,57E-01	-5,07E-01
35	-2,01E-01	-4,00E-01
36	-1,76E-01	-3,51E-01
37	-1,44E-01	-2,88E-01
38	-1,52E-01	-3,03E-01
39	-1,62E-01	-3,24E-01
40	-3,54E-02	-7,05E-02
41	-8,55E-04	-1,72E-03

How much production of new materials can be replaced by recycling packaging in module A5 and metal in C3.

Group no.	Wood chips (kg/kg)	LDPE granules (kg/kg)	Sulfate pulp (kg/kg)	PP granules (kg/kg)	Cast steel (kg/kg)	Cast zinc (kg/kg)
1	4.61E-02	6.30E-04	5.30E-02	0.00E+00	8,23E-01	0,00E+00
2	4,42E-02	6,02E-04	5,08E-02	0,00E+00	7,86E-01	0,00E+00
3	5,83E-02	8,69E-04	6,05E-02	0,00E+00	7,41E-01	0,00E+00
4	1,35E-01	4,37E-03	1,90E-01	0,00E+00	6,89E-01	0,00E+00
5	7,51E-02	1,31E-03	7,40E-02	4,22E-03	6,39E-01	0,00E+00
6	6,97E-02	8,96E-04	6,53E-02	3,60E-03	5,56E-01	0,00E+00
7	8,76E-02	1,45E-03	9,73E-02	1,23E-03	4,59E-01	0,00E+00
8	9,14E-02	9,77E-04	7,79E-02	5,64E-03	3,80E-01	0,00E+00
9	1,05E-01	1,04E-03	8,19E-02	9,74E-03	3,16E-01	0,00E+00
10	8,60E-02	6,24E-04	5,33E-02	1,21E-02	2,42E-01	0,00E+00
11	1,14E-01	1,50E-03	9,54E-02	0,00E+00	0,00E+00	0,00E+00
12	3,44E-02	5,53E-04	3,58E-02	0,00E+00	4,99E-01	5,01E-01
13	4,02E-02	4,73E-04	3,96E-02	0,00E+00	1,00E+00	0,00E+00
14	1,26E-01	1,74E-03	1,10E-01	1,40E-02	0,00E+00	0,00E+00
15	0,00E+00	0,00E+00	1,49E-01	0,00E+00	0,00E+00	0,00E+00
16	4,60E-02	1,00E-03	5,80E-02	0,00E+00	0,00E+00	0,00E+00
17	7,49E-02	8,95E-04	7,25E-02	0,00E+00	0,00E+00	0,00E+00
18	6,02E-02	6,86E-04	5,72E-02	0,00E+00	0,00E+00	0,00E+00
19	5,72E-02	5,91E-04	5,42E-02	0,00E+00	0,00E+00	0,00E+00
20	5,41E-02	6,55E-04	5,55E-02	0,00E+00	0,00E+00	0,00E+00
21	5,78E-02	7,04E-04	5,85E-02	0,00E+00	0,00E+00	0,00E+00
22	6,00E-02	6,84E-04	5,71E-02	0,00E+00	0,00E+00	0,00E+00
23	8,51E-02	1,35E-03	1,03E-01	0,00E+00	0,00E+00	0,00E+00
24	1,08E-01	1,45E-03	1,10E-01	0,00E+00	0,00E+00	0,00E+00
25	9,69E-02	2,60E-03	1,30E-01	0,00E+00	0,00E+00	0,00E+00
26	7,92E-02	1,96E-03	1,04E-01	0,00E+00	0,00E+00	0,00E+00
27	1,01E-01	1,88E-03	1,21E-01	0,00E+00	0,00E+00	0,00E+00
28	8,90E-02	1,23E-03	9,50E-02	0,00E+00	0,00E+00	0,00E+00
29	1,14E-01	2,03E-03	1,43E-01	0,00E+00	0,00E+00	0,00E+00
30	9,97E-02	1,47E-03	8,84E-02	1,02E-02	0,00E+00	0,00E+00
31	1,80E-01	4,56E-03	2,47E-01	0,00E+00	0,00E+00	0,00E+00
32	1,20E-01	2,21E-03	1,35E-01	0,00E+00	0,00E+00	0,00E+00
33	1,05E-01	2,36E-03	1,32E-01	0,00E+00	0,00E+00	0,00E+00
34	8,63E-02	1,50E-03	8,20E-02	7,86E-03	0,00E+00	0,00E+00
35	1,00E-01	2,11E-03	1,20E-01	0,00E+00	0,00E+00	0,00E+00
36	9,32E-02	1,52E-03	1,14E-01	0,00E+00	0,00E+00	0,00E+00
37	9,17E-02	1,16E-03	9,08E-02	0,00E+00	0,00E+00	0,00E+00
38	1,01E-01	1,11E-03	9,79E-02	0,00E+00	0,00E+00	0,00E+00
39	1,07E-01	1,20E-03	1,04E-01	0,00E+00	0,00E+00	0,00E+00
40	1,95E-02	3,19E-04	2,21E-02	0,00E+00	1,00E+00	0,00E+00
41	2,56E-03	0,00E+00	0,00E+00	0,00E+00	1,00E+00	0,00E+00

Indoor air

The EPD does not indicate anything about the release of hazardous substances to indoor air, as the horizontal standards for the measurements are not available. Read more in EN15804+A2 section 7.4.1.

Soil and water

The EPD does not indicate anything about the release of hazardous substances to soil and water, as the horizontal standards for the measurements are not available. Read more in EN15804+A2 section 7.4.2.

References

Publisher	 www.epddanmark.dk Template version 2024.1
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LCA software/background data	LCA software: SimaPro v. 9.6 Background data: ecoinvent v. 3.10 EN 15804 reference package 3.1
3rd party verifier	<i>Guangli Du</i> <i>BUILD - Aalborg University</i> www.aau.dk

General program instructions

General Program Instructions, version 2.0, spring 2020
www.epddanmark.dk

EN 15804

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

EN 15804

DS/EN 15804:2012+A2/AC:2021 – Corrigendum to DS/EN 15804 + A2:2019

EN 15942

DS/EN 15942:2011 – "Sustainability of construction works – Environmental product declarations – Communication format business-to-business"

ISO 14025

DS/EN ISO 14025:2010 – "Environmental labels and declarations – Type III environmental declarations – Principles and procedures"

ISO 14040

DS/EN ISO 14040:2008 – "Environmental management – Life cycle assessment – Principles and framework"

ISO 14044

DS/EN ISO 14044:2008 – "Environmental management – Life cycle assessment – Requirements and guidelines"

Knowledge Center for Circular Economy in Construction (VCØB). *Overview of building materials for reuse and recycling (Overblik over byggematerialer til genbrug og genanvendelse).* Available from [VCØB](#) (accessed October 25, 2024).