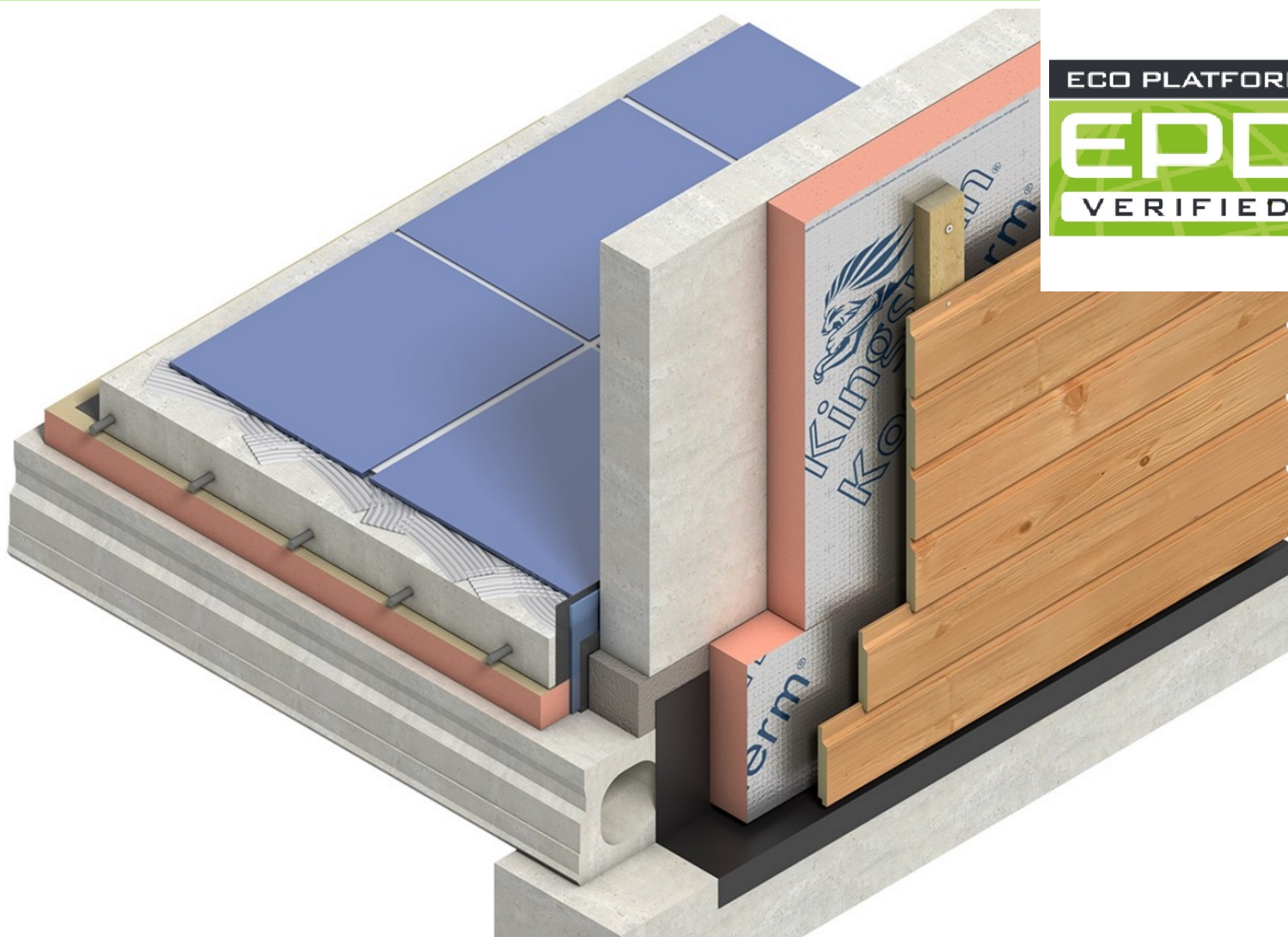


as per *ISO 14025* and *EN 15804+A2*

**Kooltherm® K15 C**  
**Kingspan Insulation B.V.**



## General Information

### Kingspan Insulation B.V.

#### Programme holder

IBU – Institut Bauen und Umwelt e.V.  
Hegelplatz 1  
10117 Berlin  
Germany

#### Declaration number

EPD-KSI-20260248-CBA1-EN

#### This declaration is based on the product category rules:

Insulating materials made of foam plastics, 01/08/2021  
(PCR checked and approved by the SVR)

#### Issue date

30/03/2026

#### Valid to

29/03/2031



Dipl.-Ing. Hans Peters  
(Chairman of Institut Bauen und Umwelt e.V.)



Florian Pronold  
(Managing Director Institut Bauen und Umwelt e.V.)

### Kooltherm® K15 C

#### Owner of the declaration

Kingspan Insulation B.V.  
Lingewei 8  
4004LL Tiel  
Netherlands

#### Declared product / declared unit

Kooltherm® K15 C Facades Board,  
1 m<sup>2</sup>, 100 mm thickness, R<sub>D</sub> = 4,75 m<sup>2</sup>·K/W

#### Scope:

The insulation material Kooltherm® K15 C is produced by Kingspan Insulation B.V. at the manufacturing facility in Tiel, the Netherlands.

Kooltherm® K15 C is a rigid thermoset cellular insulation material faced with a micro-perforated reinforced aluminum foil on the outer side and a mineral coated glass tissue on the inner side.

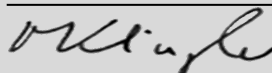
In order to enable the user of the EPD to calculate the LCA results for different thicknesses, the EPD contains the respective calculation rules.

The owner of the declaration shall be liable for the underlying information and evidence; the IBU shall not be liable with respect to manufacturer information, life cycle assessment data and evidences.

The EPD was created according to the specifications of EN 15804+A2. In the following, the standard will be simplified as *EN 15804*.

#### Verification

|                                                                                  |            |
|----------------------------------------------------------------------------------|------------|
| The standard EN 15804 serves as the core PCR                                     |            |
| Independent verification of the declaration and data according to ISO 14025:2011 |            |
| <input type="checkbox"/>                                                         | internally |
| <input checked="" type="checkbox"/>                                              | externally |



Matthias Klingler,  
(Independent verifier)

## Product

### Product description/Product definition

The Kooltherm® K15 C is a rigid thermoset cellular insulation material faced with a micro-perforated reinforced aluminum foil on the outer side and a mineral coated glass tissue on the inner side. The product is available in variable thicknesses from 50 mm up to 159 mm. This EPD is based on a thickness of 100 mm and  $R_D$ -value of  $4,75 \text{ m}^2 \cdot \text{K/W}$ .

For the placing on the market of the product in the European Union/European Free Trade Association (EU/EFTA) (with the exception of Switzerland) Regulation (EU) No. 305/2011 CPR applies. The product needs a declaration of performance taking into consideration EN 13166 - Thermal insulation products for buildings - Factory made phenolic foam (PF) products - Specification and the CE-marking.

For the application and use the respective national provisions apply.

### Application

Kooltherm® K15 C is suitable for use as insulation for ventilated facades in both new and renovation construction and also on concrete element in semi-sandwich constructions.

### Technical Data

#### Constructional data

| Name                                              | Value      | Unit   |
|---------------------------------------------------|------------|--------|
| Thermal conductivity $\lambda_d$ acc. to EN 13166 | 0.021      | W/(mK) |
| Compressive strength acc. to EN 826               | $\geq 100$ | kPa    |

Performance data of the product in accordance with the declaration of performance with respect to its essential characteristics according to EN 13166 - Thermal insulation products for buildings - Factory made phenolic foam (PF)

products - Specification.

The declaration of performance of the product can be found at [www.kingspan.com](http://www.kingspan.com).

### Base materials/Ancillary materials

The main materials are phenolic (PF) resin with added catalyst and additives. Phenolic rigid foam onto a facing material is formed by the chemical reaction of these materials and adding a blowing agent with no ozone depletion potential.

In the current REACH regulations, phenolic foam insulation products are considered 'articles' and are exempt from the requirements of Article 57 and 59(1) of REACH Regulation (EC) No 1907/2006. These products are not classified as 'hazardous products' according to any current legislation, and can hence be declared as follows:

- This article contains substances listed in the candidate list (date: 20.01.2026) exceeding 0.1 percentage by mass: **no**

### Manufacturing process

Kingspan Kooltherm comprises an insulation core between two flexible facers. In order to manufacture the product, a mixture of liquid raw materials is poured onto one facer which sits on a conveyor. The liquid raw material mixture creates a foam structure, which expands to meet the top facer, which is constrained by another conveyor directly above it. As it expands, the foam autohesively adheres to the facers. Once it has reached the necessary thickness the foam is cured. The insulation boards are then cut into the necessary sizes and packaged.

### Reference service life

The reference service life is not to be declared in this EPD as it does not cover the use stage.

## LCA: Calculation rules

### Declared Unit

The declared unit ( $1 \text{ m}^2$ ) and conversion factors are listed in the table below.

#### Declared unit and mass reference

| Name                                   | Value | Unit            |
|----------------------------------------|-------|-----------------|
| Declared unit                          | 1     | $\text{m}^2$    |
| Grammage                               | 4.34  | $\text{kg/m}^2$ |
| conversion factor [Mass/Declared Unit] | 0.23  | -               |
| Layer thickness                        | 0.1   | m               |

This EPD is based on the annual production volume of the factory producing the Kooltherm® K15 C product.

The scope of this EPD is the thermal insulation board Kooltherm® K15 C, as produced by Kingspan Insulation at the manufacturing facility in Tiel (the Netherlands).

The environmental impacts have been calculated over the calendar year 2022. The EPD is studied for a product thickness of 100 mm.

### System boundary

The type of EPD according to EN 15804 is: cradle to gate with options, modules A4-A5, C1-C4, and module D (A1-A3, C, D and additional modules: A4, A5).

The product stage is a mandatory information module and it covers:

- A1, raw material extraction and processing, processing of secondary material input (e.g. recycling processes),
- A2, transport to the manufacturer,
- A3, manufacturing, including provision of all materials, products and energy, packaging processing and its transport, as well as waste processing up to the end-of-waste state or disposal of final residues during the product stage.

For the environmental impact, the use of green electricity was calculated taking into account the residual electricity mix for the remaining electricity. The proportion of the electricity demand covered by green electricity in the total electricity demand is 100%. The following emission factors are used: 0.029 kg CO<sub>2</sub> eq/kWh electricity from photovoltaic and 0.014 kg CO<sub>2</sub> eq/kWh electricity from wind power

The construction process stage includes:

- A4 transport to the building site; 1 km via truck
- A5 installation in the building, including provision of all materials, products and energy, as well as waste processing up to the end-of-waste state or disposal of final residues during the construction process stage.

The end-of-life stage is a mandatory information module and it

covers:

- C1 de-construction, demolition via diesel-driven construction machine;
- C2 transport to waste processing; 50 km via truck

After the transport (module C2) two End-of-life scenarios are addressed:

Scenario 1 (module C3 and D):

Waste incineration with energy recovery. Environmental burden of the incineration ( $R1 > 60\%$ ) of the product at the end-of-life stage are assigned to the product system (C3). Resulting potential credits for thermal and electrical energy from energy substitution from the incineration of the final product and its packaging are declared in module D. Aluminium parts of the facing are recycled, benefits are also accounted for in module D.

Scenario 2 (module C3/1 and D/1):

Mechanical recycling, where no material credit is calculated in module D (conservative approach). Electricity needed for shredding/compressing into briquettes is grouped to module C3. After processing, the end-of-waste status is reached. Due

to the uncertainty, which material is replaced finally, no material credit is calculated (conservative approach). Module D includes potential benefits from the incineration of packaging materials (resulting from module A5) only.

### Geographic Representativeness

Land or region, in which the declared product system is manufactured, used or handled at the end of the product's lifespan: Europe

### Comparability

Basically, a comparison or an evaluation of EPD data is only possible if all the data sets to be compared were created according to *EN 15804* and the building context, respectively the product-specific characteristics of performance, are taken into account.

### Background database

Background data from Sphera LCA software (GaBi ts) content update package (CUP) version 2025.1.

## LCA: Scenarios and additional technical information

### Characteristic product properties of biogenic carbon

Neither the product nor the accompanying packaging does contain biogenic carbon.

### Information on describing the biogenic carbon content at factory gate

| Name                                              | Value | Unit |
|---------------------------------------------------|-------|------|
| Biogenic carbon content in product                | -     | kg C |
| Biogenic carbon content in accompanying packaging | -     | kg C |

Note: 1 kg of biogenic carbon is equivalent to 44/12 kg of  $CO_2$ .

### Technical information

The following technical information is a basis for the declared modules or can be used for developing specific scenarios in the context of a building assessment.

### Manufacturing (A3)

A polyethylene packaging foil is used. The products are transported on expanded polystyrene (EPS) skids. Within Module A3 the following packaging of the final product is included:

Polyethylene cover and wrap: 0.04 kg/m<sup>2</sup>

Expanded Polystyrene skid: 0.01 kg/m<sup>2</sup>

### Transport to the building site (A4)

| Name                                  | Value  | Unit              |
|---------------------------------------|--------|-------------------|
| Litres of fuel                        | 0.0103 | l/100km           |
| Transport distance                    | 300    | km                |
| Gross density of products transported | 43.4   | kg/m <sup>3</sup> |

### Installation into the building (A5)

| Name                                                                   | Value | Unit |
|------------------------------------------------------------------------|-------|------|
| Output substances following waste treatment on site packaging material | 0.05  | kg   |

The recycling of the packaging is considered in A5.

### End of life (C1-C4)

The assumptions for C1 are: diesel-driven excavator (100 kW; 0.2 litre fuel per ton excavated material). The assumptions for C2 are: Truck Euro 6, diesel driven, 26-28 t gross weight, assumed distance 50 km.

| Name                                                               | Value | Unit |
|--------------------------------------------------------------------|-------|------|
| Collected as mixed construction waste                              | 4.34  | kg   |
| Landfilling                                                        | -     | kg   |
| Scenario 1                                                         |       |      |
| Energy recovery                                                    | 4.27  | kg   |
| Recycling (aluminium content of the multi-layer aluminium facings) | 0.07  | kg   |
| Scenario 2                                                         |       |      |
| Mechanical recycling                                               | 4.34  | kg   |

Reuse, recovery and/or recycling potentials (D), relevant scenario information

Scenario 1 (module C3 and D):

Waste incineration with energy recovery is assumed as an end-of-life scenario

Scenario 2 (module C3/1 and D/1):

Mechanical recycling is assumed, where no material credit is calculated in module D (conservative approach).

## LCA: Results

The following table shows the environmental impact indicators according to EN 15804+A2, EF 3.1.

**DESCRIPTION OF THE SYSTEM BOUNDARY (X = INCLUDED IN LCA; MND = MODULE OR INDICATOR NOT DECLARED; MNR = MODULE NOT RELEVANT)**

| Product stage       |           |               | Construction process stage          |          | Use stage |             |        |             |               |                        |                       | End of life stage          |           |                  |          | Benefits and loads beyond the system boundaries |
|---------------------|-----------|---------------|-------------------------------------|----------|-----------|-------------|--------|-------------|---------------|------------------------|-----------------------|----------------------------|-----------|------------------|----------|-------------------------------------------------|
| Raw material supply | Transport | Manufacturing | Transport from the gate to the site | Assembly | Use       | Maintenance | Repair | Replacement | Refurbishment | Operational energy use | Operational water use | De-construction demolition | Transport | Waste processing | Disposal | Reuse-Recovery-Recycling-potential              |
| A1                  | A2        | A3            | A4                                  | A5       | B1        | B2          | B3     | B4          | B5            | B6                     | B7                    | C1                         | C2        | C3               | C4       | D                                               |
| X                   | X         | X             | X                                   | X        | MND       | MND         | MNR    | MNR         | MNR           | MND                    | MND                   | X                          | X         | X                | X        | X                                               |

### RESULTS OF THE LCA - ENVIRONMENTAL IMPACT according to EN 15804+A2: 1 m2 Kooltherm K15 C, thickness 100 mm

| Parameter      | Unit                             | A1-A3     | A4       | A5       | C1       | C2       | C3       | C3/1     | C4 | D         | D/1       |
|----------------|----------------------------------|-----------|----------|----------|----------|----------|----------|----------|----|-----------|-----------|
| GWP-total      | kg CO <sub>2</sub> eq            | 1.01E+01  | 1.38E-01 | 1.37E-01 | 3E-03    | 2.3E-02  | 9.21E+00 | 1.93E-01 | 0  | -4.04E+00 | -5.3E-02  |
| GWP-fossil     | kg CO <sub>2</sub> eq            | 1E+01     | 1.36E-01 | 1.37E-01 | 3E-03    | 2.2E-02  | 9.21E+00 | 1.9E-01  | 0  | -4.01E+00 | -5.3E-02  |
| GWP-biogenic   | kg CO <sub>2</sub> eq            | -6.32E-02 | 6.95E-04 | 4.41E-06 | 1.12E-05 | 1.14E-04 | 6.26E-04 | 2E-03    | 0  | -2.4E-02  | -2.74E-04 |
| GWP-luluc      | kg CO <sub>2</sub> eq            | 1.16E-01  | 1E-03    | 9.89E-06 | 2.89E-05 | 2.37E-04 | 1.51E-04 | 6.28E-04 | 0  | -1E-02    | -7.3E-05  |
| ODP            | kg CFC11 eq                      | 6.84E-11  | 2.32E-14 | 2.94E-14 | 4.65E-16 | 3.82E-15 | 8.89E-13 | 4.33E-12 | 0  | -3.73E-11 | -4.98E-13 |
| AP             | mol H <sup>+</sup> eq            | 2.18E-02  | 2.39E-04 | 1.77E-05 | 1.41E-05 | 3.94E-05 | 5E-03    | 4.17E-04 | 0  | -7E-03    | -6.26E-05 |
| EP-freshwater  | kg P eq                          | 2.98E-05  | 3.77E-07 | 4.13E-09 | 7.56E-09 | 6.2E-08  | 1.63E-07 | 4.07E-07 | 0  | -3.24E-06 | -4.84E-08 |
| EP-marine      | kg N eq                          | 7.06E-03  | 9.99E-05 | 4.9E-06  | 6.91E-06 | 1.64E-05 | 3E-03    | 9.99E-05 | 0  | -2E-03    | -1.81E-05 |
| EP-terrestrial | mol N eq                         | 6.7E-02   | 1E-03    | 8.15E-05 | 7.47E-05 | 1.76E-04 | 3E-02    | 1E-03    | 0  | -2E-02    | -2.02E-04 |
| POCP           | kg NMVOC eq                      | 3E-02     | 2.16E-04 | 1.4E-05  | 1.86E-05 | 3.56E-05 | 7E-03    | 2.48E-04 | 0  | -5E-03    | -4.91E-05 |
| ADPE           | kg Sb eq                         | 8.7E-06   | 9.29E-09 | 3.22E-10 | 1.86E-10 | 1.53E-09 | 1.1E-08  | 3.95E-08 | 0  | -4.02E-07 | -5.24E-09 |
| ADPF           | MJ                               | 2.79E+02  | 1.79E+00 | 6.1E-02  | 3.6E-02  | 2.95E-01 | 2.49E+00 | 3.88E+00 | 0  | -6.8E+01  | -9.38E-01 |
| WDP            | m <sup>3</sup> world eq deprived | 1.58E+00  | 6.39E-04 | 1.3E-02  | 1.28E-05 | 1.05E-04 | 9.18E-01 | 4.8E-02  | 0  | -5.21E-01 | -6E-03    |

GWP = Global warming potential; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential of land and water; EP = Eutrophication potential; POCP = Formation potential of tropospheric ozone photochemical oxidants; ADPE = Abiotic depletion potential for non-fossil resources; ADPF = Abiotic depletion potential for fossil resources; WDP = Water (user) deprivation potential)

### RESULTS OF THE LCA - INDICATORS TO DESCRIBE RESOURCE USE according to EN 15804+A2: 1 m2 Kooltherm K15 C, thickness 100 mm

| Parameter | Unit           | A1-A3    | A4       | A5        | C1       | C2       | C3        | C3/1      | C4 | D         | D/1       |
|-----------|----------------|----------|----------|-----------|----------|----------|-----------|-----------|----|-----------|-----------|
| PERE      | MJ             | 3.66E+01 | 1.35E-01 | 1.5E-02   | 3E-03    | 2.2E-02  | 4.97E-01  | 2.65E+00  | 0  | -2.41E+01 | -3.05E-01 |
| PERM      | MJ             | 0        | 0        | 0         | 0        | 0        | 0         | 0         | 0  | 0         | 0         |
| PERT      | MJ             | 3.66E+01 | 1.35E-01 | 1.5E-02   | 3E-03    | 2.2E-02  | 4.97E-01  | 2.65E+00  | 0  | -2.41E+01 | -3.05E-01 |
| PENRE     | MJ             | 1.5E+02  | 1.79E+00 | 2.39E+00  | 3.6E-02  | 2.95E-01 | 1.29E+02  | 1.31E+02  | 0  | -6.8E+01  | -9.38E-01 |
| PENRM     | MJ             | 1.29E+02 | 0        | -2.33E+00 | 0        | 0        | -1.27E+02 | -1.27E+02 | 0  | 0         | 0         |
| PENRT     | MJ             | 2.79E+02 | 1.79E+00 | 6.1E-02   | 3.6E-02  | 2.95E-01 | 2.49E+00  | 3.88E+00  | 0  | -6.8E+01  | -9.38E-01 |
| SM        | kg             | 0        | 0        | 0         | 0        | 0        | 0         | 0         | 0  | 6.7E-02   | 0         |
| RSF       | MJ             | 0        | 0        | 0         | 0        | 0        | 0         | 0         | 0  | 0         | 0         |
| NRSF      | MJ             | 0        | 0        | 0         | 0        | 0        | 0         | 0         | 0  | 0         | 0         |
| FW        | m <sup>3</sup> | 6.22E-02 | 6.67E-05 | 3.1E-04   | 1.34E-06 | 1.1E-05  | 2.2E-02   | 2E-03     | 0  | -2.3E-02  | -2.38E-04 |

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

### RESULTS OF THE LCA - WASTE CATEGORIES AND OUTPUT FLOWS according to EN 15804+A2: 1 m2 Kooltherm K15 C, thickness 100 mm

| Parameter | Unit | A1-A3    | A4       | A5       | C1       | C2       | C3       | C3/1     | C4 | D         | D/1       |
|-----------|------|----------|----------|----------|----------|----------|----------|----------|----|-----------|-----------|
| HWD       | kg   | 1.29E-04 | 7.18E-11 | 3.02E-11 | 1.44E-12 | 1.18E-11 | 1.01E-09 | 5.07E-09 | 0  | -4.02E-08 | -5.92E-10 |
| NHWD      | kg   | 3.51E-01 | 2.5E-04  | 1.2E-02  | 5.01E-06 | 4.11E-05 | 1.03E-01 | 3E-03    | 0  | -2.31E-01 | -4.67E-04 |
| RWD       | kg   | 3.13E-03 | 3.38E-06 | 2.05E-06 | 6.78E-08 | 5.56E-07 | 9.64E-05 | 6.13E-04 | 0  | -5E-03    | -7.04E-05 |
| CRU       | kg   | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0  | 0         | 0         |
| MFR       | kg   | 1.35E-01 | 0        | 0        | 0        | 0        | 7E-02    | 4.34E+00 | 0  | 0         | 0         |
| MER       | kg   | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0  | 0         | 0         |

|     |    |   |   |          |   |   |          |   |   |   |   |
|-----|----|---|---|----------|---|---|----------|---|---|---|---|
| EEE | MJ | 0 | 0 | 2.49E-01 | 0 | 0 | 1.59E+01 | 0 | 0 | 0 | 0 |
| EET | MJ | 0 | 0 | 4.45E-01 | 0 | 0 | 2.85E+01 | 0 | 0 | 0 | 0 |

HWD = Hazardous waste disposed; NHWD = Non-hazardous waste disposed; RWD = Radioactive waste disposed; CRU = Components for re-use; MFR = Materials for recycling; MER = Materials for energy recovery; EEE = Exported electrical energy; EET = Exported thermal energy

## RESULTS OF THE LCA – additional impact categories according to EN 15804+A2-optional: 1 m2 Kooltherm K15 C, thickness 100 mm

| Parameter | Unit              | A1-A3    | A4       | A5       | C1       | C2       | C3       | C3/1     | C4 | D         | D/1       |
|-----------|-------------------|----------|----------|----------|----------|----------|----------|----------|----|-----------|-----------|
| PM        | Disease incidence | 2.88E-07 | 2.46E-09 | 2.15E-10 | 1.67E-10 | 4.05E-10 | 1.58E-08 | 3.44E-09 | 0  | -8.06E-08 | -5.1E-10  |
| IR        | kBq U235 eq       | 4.53E-01 | 4.85E-04 | 2.76E-04 | 9.73E-06 | 7.99E-05 | 1.5E-02  | 1.01E-01 | 0  | -7.76E-01 | -1.2E-02  |
| ETP-fw    | CTUe              | 1.16E+02 | 2.33E+00 | 4.1E-02  | 4.7E-02  | 3.83E-01 | 7.26E-01 | 6.55E-01 | 0  | -7.44E+00 | -8.3E-02  |
| HTP-c     | CTUh              | 4.17E-09 | 3.14E-11 | 1.93E-12 | 6.3E-13  | 5.17E-12 | 5.97E-11 | 6.18E-11 | 0  | -1.23E-09 | -9.59E-12 |
| HTP-nc    | CTUh              | 6.34E-08 | 1.76E-09 | 1.55E-10 | 3.53E-11 | 2.89E-10 | 4.79E-10 | 1.3E-09  | 0  | -1.35E-08 | -1.58E-10 |
| SQP       | SQP               | 1.78E+01 | 7.91E-01 | 1.4E-02  | 1.6E-02  | 1.3E-01  | 5.39E-01 | 1.56E+00 | 0  | -1.17E+01 | -1.79E-01 |

PM = Potential incidence of disease due to PM emissions; IR = Potential Human exposure efficiency relative to U235; ETP-fw = Potential comparative Toxic Unit for ecosystems; HTP-c = Potential comparative Toxic Unit for humans (cancerogenic); HTP-nc = Potential comparative Toxic Unit for humans (not cancerogenic); SQP = Potential soil quality index

Disclaimer 1 – for the indicator 'Potential Human exposure efficiency relative to U235'. This impact category deals mainly with the eventual impact of low-dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure or radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, radon and from some construction materials is also not measured by this indicator.

Disclaimer 2 – for the indicators 'abiotic depletion potential for non-fossil resources', 'abiotic depletion potential for fossil resources', 'water (user) deprivation potential, deprivation-weighted water consumption', 'potential comparative toxic unit for ecosystems', 'potential comparative toxic unit for humans – cancerogenic', 'Potential comparative toxic unit for humans - not cancerogenic', 'potential soil quality index'. The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high as there is limited experience with the indicator.

### Factors for different thicknesses

The LCA results for the insulation material declared in this EPD refer to a product with a thickness of 100 mm. To enable the user of the EPD to calculate the results for different thicknesses the factors in the following table can be used for the calculation. The LCA results above have to be multiplied with these factors.

|                  | 50 mm | 60 mm | 80 mm | 100 mm | 120 mm | 140 mm | 150 mm | 159 mm |
|------------------|-------|-------|-------|--------|--------|--------|--------|--------|
| GWP - total      | 0.55  | 0.65  | 0.83  | 1.00   | 1.18   | 1.35   | 1.43   | 1.50   |
| GWP - fossil     | 0.55  | 0.65  | 0.83  | 1.00   | 1.18   | 1.35   | 1.43   | 1.50   |
| GWP - biogenic   | 0.47  | 0.58  | 0.78  | 1.00   | 1.23   | 1.46   | 1.57   | 1.68   |
| GWP - luluc      | 0.53  | 0.63  | 0.82  | 1.00   | 1.20   | 1.40   | 1.49   | 1.58   |
| ODP              | 0.56  | 0.65  | 0.82  | 1.00   | 1.18   | 1.36   | 1.44   | 1.52   |
| AP               | 0.66  | 0.71  | 0.90  | 1.00   | 1.19   | 1.33   | 1.42   | 1.47   |
| EP - freshwater  | 0.52  | 0.62  | 0.81  | 1.00   | 1.20   | 1.39   | 1.49   | 1.58   |
| EP - marine      | 0.51  | 0.67  | 0.83  | 1.00   | 1.02   | 1.18   | 1.33   | 1.33   |
| EP - terrestrial | 0.58  | 0.69  | 0.84  | 1.00   | 1.15   | 1.31   | 1.40   | 1.48   |
| POCP             | 0.53  | 0.63  | 0.80  | 1.00   | 1.13   | 1.33   | 1.40   | 1.47   |
| ADPE             | 0.51  | 0.61  | 0.81  | 1.00   | 1.20   | 1.40   | 1.50   | 1.59   |
| ADPF             | 0.53  | 0.63  | 0.82  | 1.00   | 1.19   | 1.37   | 1.46   | 1.54   |
| WDP              | 0.57  | 0.66  | 0.83  | 1.00   | 1.18   | 1.35   | 1.44   | 1.51   |

This EPD was created using a software tool.

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