

# Environmental Product Declaration

In accordance with ISO 14025 and EN 15804:2012+A2:2019



## LK Cabinet With LK Frame/Hatch & Base LK Systems AB

|                          |                                                                                           |
|--------------------------|-------------------------------------------------------------------------------------------|
| Programme:               | The International EPD® System, <a href="http://www.environdec.com">www.environdec.com</a> |
| Programme operator:      | EPD International AB                                                                      |
| EPD registration number: | S-P-06381                                                                                 |
| Publication date:        | 2022-09-23                                                                                |
| Valid until:             | 2027-08-25                                                                                |

*An EPD should provide current information and may be updated if conditions change. The stated validity is therefore subject to the continued registration and publication at [www.environdec.com](http://www.environdec.com)*

## Company information

|                                                              |                                                                                                                                            |
|--------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|
| Owner of the EPD:                                            | LK Systems AB<br>Johannesfredsvägen 7<br>168 69 Bromma<br>Sweden                                                                           |
| Contact:                                                     | <a href="mailto:info@lksystems.se">info@lksystems.se</a><br><a href="https://www.lksystems.se/">https://www.lksystems.se/</a>              |
| Name and location of production site:                        | Alfing i Älmhult AB<br>Bäckgatan 32<br>343 22 Älmhult<br>Sweden<br><br>Modulsystem i Kalix AB<br>Bangårdsvägen 3<br>952 31 Kalix<br>Sweden |
| Product-related or management system-related certifications: | Safe water installation                                                                                                                    |

The EPD owner has the sole ownership, liability, and responsibility for the EPD.

EPDs within the same product category but from different programmes may not be comparable. EPDs of construction products may not be comparable if they do not comply with EN 15804. For further information about comparability, see EN 15804 and ISO 14025.

## Programme information

|                                                                                                                                                             |                                                                     |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------|
| Programme:                                                                                                                                                  | The International EPD® System                                       |
| Address:                                                                                                                                                    | EPD International AB<br>Box 210 60<br>SE-100 31 Stockholm<br>Sweden |
| Website:                                                                                                                                                    | <a href="http://www.environdec.com">www.environdec.com</a>          |
| E-mail:                                                                                                                                                     | <a href="mailto:info@environdec.com">info@environdec.com</a>        |
| CEN standard EN 15804 serves as the Core Product Category Rules (PCR)                                                                                       |                                                                     |
| Product category rules (PCR): 2019:14, Construction products (EN 15804:A2) (1.11)                                                                           |                                                                     |
| PCR review was conducted by: Claudia A. Peña, The Technical Committee of the International EPD® System.                                                     |                                                                     |
| Contact: <a href="mailto:info@environdec.com">info@environdec.com</a>                                                                                       |                                                                     |
| Independent third-party verification of the declaration and data, according to ISO 14025:2006:                                                              |                                                                     |
| <input type="checkbox"/> EPD process certification <input checked="" type="checkbox"/> EPD verification                                                     |                                                                     |
| Third party verifier: Daniel Böckin, PhD, under guidance of Pär Lindman, Miljögiraff AB, <a href="mailto:daniel@miljogiraff.se">daniel@miljogiraff.se</a> . |                                                                     |
| Approved by: The International EPD® System.                                                                                                                 |                                                                     |

## Company information

**LK Systems** is the leading manufacturer of easy-to-install systems for heating and tap water distribution in the Nordics. Through our prefabrication factory, we also provide tailor-made solutions that simplify the installation process even further. From idea to final solution, you can be sure of the smartest answers for your everyday challenges, today and tomorrow.

### For the simpler, smarter everyday

Simpler. Smarter. More sustainable. At LK, we believe there's a better way to do everything. That's why – from water, heating and hydronic solutions to pipe extrusion – we push for innovation over status quo and simplicity over complexity. It's a belief all of us at LK apply to every product and solution we create

## Product information

The products including in this study is LK Cabinets with frame/hatch and base. The cabinets are manufactured to easier connect both heating and water installations. LK cabinets with associated installation instructions are adapted to Industry Rules safe water installation. The cabinets come with accessories for the mounting including a dense base with rubber pipe grommets. The cabinets dense base is provided with a drainage opening which allows any water leakage to be drained to a location which can be inspected. The cabinets are combined with an associated frame/hatch which can be found in two varieties depending on the cabinet, one for cabinets that are built into a wall and one for cabinets that are mounted onto a wall. LK Manifold Cabinet shall also combine with a base when it is installed on the surface of an existing wall. LK Base conceals the pipe installation between cabinet and floor.

The EPD is an average EPD and the declared unit is based on LK Shunt Cabinet M60n with associated frame/hatch, that have the average result. See appendix for total weight of the products included in the EPD.

Further information can be found at <https://www.lksystems.se/>

| Product name             | Product number                                                                           |
|--------------------------|------------------------------------------------------------------------------------------|
| LK Manifold Cabinet UFH  | 2434684; 2434683; 2410313                                                                |
| LK Shunt Cabinet VS2     | 2435361; 2435362                                                                         |
| LK Manifold Cabinet HX   | 2410318                                                                                  |
| LK Manifold Cabinet Qmax | 2410310                                                                                  |
| LK Shunt Cabinet M60n    | 2435370; 2435369                                                                         |
| LK Frame/hatch           | 2435367; 2434680; 2434679; 2435363; 2434676; 2435368; 2434681; 2434678; 2435364; 2434677 |
| Base                     | 2434689; 2435372; 2434688; 2435242; 2435365; 2410311; 2434686                            |
| LK Increased frame UFH   | 33014; 33015; 33016; 33017; 33018                                                        |

| Product name                       | Product number                                                                                                                                                                                                                       |
|------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| LK Manifold Cabinet UNI            | 1881315; 1881314; 1881313; 1881316                                                                                                                                                                                                   |
| LK Manifold Cabinet UNI 550 L & XL | 1875827; 1875828                                                                                                                                                                                                                     |
| LK Manifold Cabinet UNI 550 CS     | 1882341                                                                                                                                                                                                                              |
| LK Manifold Cabinet UNI VM         | 1882399                                                                                                                                                                                                                              |
| LK Fitting Cabinet VUK             | 1876498                                                                                                                                                                                                                              |
| LK Fitting Cabinet UNI 350x350     | 1882340                                                                                                                                                                                                                              |
| LK Valve Cabinet                   | 29725                                                                                                                                                                                                                                |
| LK Installation cabinet RTB        | 2988856; 2988857                                                                                                                                                                                                                     |
| LK Manifold Cabinet UNI 550 FH     | 1882678                                                                                                                                                                                                                              |
| LK Frame/Hatch                     | 1882348; 1881308; 1881311; 1881305; 1881303; 1882296; 2054838; 1881310; 1881312; 1881306; 1881304; 1882642; 1882643; 1882644; 1882645; 1882646; 1882647; 1882648; 1882649; 1882137; 1882663; 1881307; 1882348; 2054838; 29726; 29729 |
| Base                               | 1881300; 1881301; 1881302                                                                                                                                                                                                            |

|                                 |                                                                                       |
|---------------------------------|---------------------------------------------------------------------------------------|
| Functional unit / declared unit | In accordance with EN 15804 + A2 the declared unit is mass 1 kg of pipe.              |
| Time representativeness:        | 2021                                                                                  |
| Database:                       | Ecoinvent 3.8. - "allocation cut off by classification" is used throughout the study. |
| LCA software used:              | SimaPro 9.3.0.3                                                                       |
| Geographical scope              | Europe                                                                                |
| LCA Report                      | LK Systems AB, Report no. 5                                                           |

The scope of the EPD is a cradle to gate with options, including A4, C and D. See Table 1 for the modules declared. The system boundary mean that all processes needed for raw material extraction, transport, manufacturing and disposal are included in the study. Figure 1. gives an overview of the included processes.

|                                                                                             | Product stage       |           |               | Construction process stage |                           | Use stage |             |        |             |               |                        |                       | End of life stage          |           |                  |          | Resource recovery stage            |
|---------------------------------------------------------------------------------------------|---------------------|-----------|---------------|----------------------------|---------------------------|-----------|-------------|--------|-------------|---------------|------------------------|-----------------------|----------------------------|-----------|------------------|----------|------------------------------------|
|                                                                                             | Raw material supply | Transport | Manufacturing | Transport                  | Construction installation | Use       | Maintenance | Repair | Replacement | Refurbishment | Operational energy use | Operational water use | De-construction demolition | Transport | Waste processing | Disposal | Reuse-Recovery-Recycling-potential |
| Module                                                                                      | A1                  | A2        | A3            | A4                         | A5                        | B1        | B2          | B3     | B4          | B5            | B6                     | B7                    | C1                         | C2        | C3               | C4       | D                                  |
| Modules declared                                                                            | X                   | X         | X             | X                          | ND                        | ND        | ND          | ND     | ND          | ND            | ND                     | ND                    | X                          | X         | X                | X        | X                                  |
| Geography                                                                                   | Euro                | Euro      | SE            | SE                         |                           |           |             |        |             |               |                        |                       | SE                         | SE        | SE               | SE       | SE                                 |
| Specific data used                                                                          | 15%                 |           |               |                            |                           | -         | -           | -      | -           | -             | -                      | -                     | -                          | -         | -                | -        | -                                  |
| Variation – products                                                                        | <10%                |           |               |                            |                           | -         | -           | -      | -           | -             | -                      | -                     | -                          | -         | -                | -        | -                                  |
| Variation – sites                                                                           | <3%                 |           |               |                            |                           | -         | -           | -      | -           | -             | -                      | -                     | -                          | -         | -                | -        | -                                  |
| X = Modules included in the analysis      ND = Module not declared      O= Optional modules |                     |           |               |                            |                           |           |             |        |             |               |                        |                       |                            |           |                  |          |                                    |

## Content information

Table 2, shows the weight for the raw material of the declared product.

| Product components  | Weight, kg | Post-consumer material, weight-% | Renewable material, weight-% |
|---------------------|------------|----------------------------------|------------------------------|
| Steel               | 0,85       | 60                               | 0                            |
| Coating powder      | 0,07       | 0                                | 0                            |
| Rubber              | 0,02       | 0                                | 0                            |
| Plastic             | 0,06       | 0                                | 0                            |
| TOTAL               | 1          | 51                               | 0                            |
| Packaging materials | Weight, kg | Weight-% (versus the product)    |                              |
| Cardboard box       | 0,12       | 12                               |                              |
| Wood                | 0,03       | 3                                |                              |
| Plastic             | 0,005      | 0,5                              |                              |
| TOTAL               | 0,155      | 15,5                             |                              |

Declared product contains no dangerous substances from the candidate list of SVHC for Authorisation.

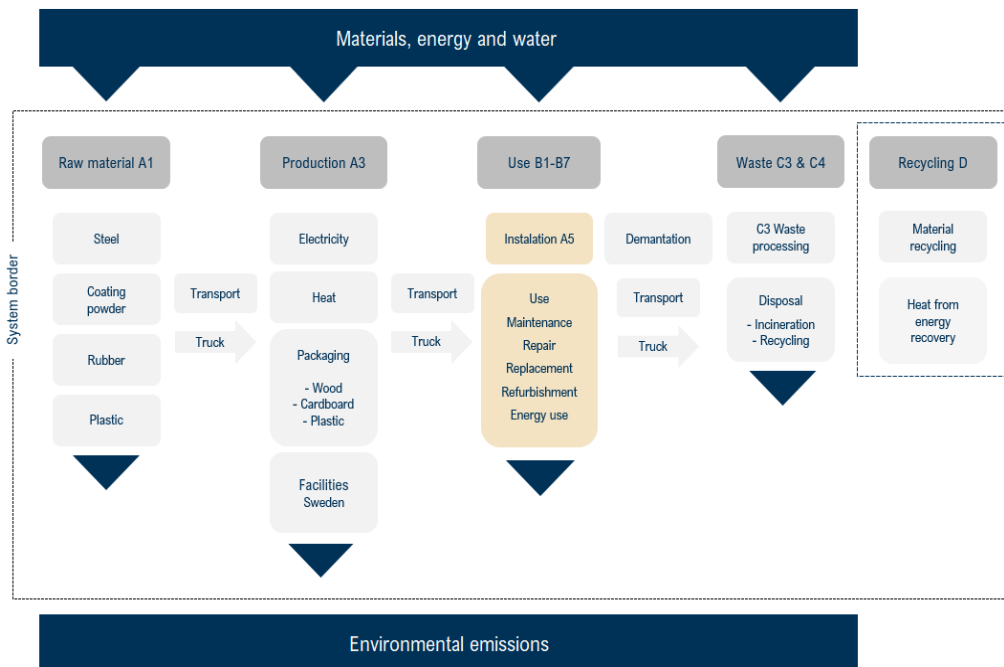


Figure 1, overview of the included processes. Light gray represents modules included, yellow represent models not declared.



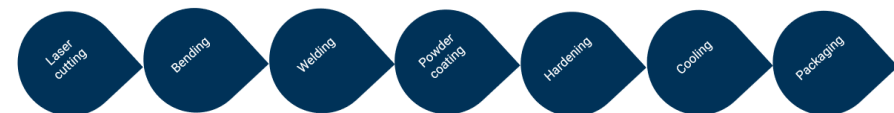
## Product life-cycle

### Raw material supply, transport, manufacturing and packaging (A1-A3)

The raw materials that are included and calculated in the EPD are the material content for the product and the packaging materials for the raw materials.

The cabinets consist of powder-coated cold-rolled steel and accessories for mounting the cabinets. The cold-rolled steel deliverers in large sheets that are cut in a machine with the help of a laser and then bent to the right shape. After the correct shape is made, the ends are welded together into a stable cabinet. When the shape of the cabinet is completed, the cabinet is coated with powder, which then goes into an oven to harden. When the curing is complete, the cabinets are cooled down in room temperature. After the manufacturing of the cabinets are finished and inspected, the cabinets are packed in their packaging with associated accessories. The cabinets are packed in cardboard box and foam, which is then stacked on a pallet.

The frames/hatches and the bases are manufacturing in the same way and are packed in separated packaging.



## Transport (A4)

Transportation impacts represent the transport from the final products delivery to the construction site. The transport distance is based on average distance. The transportation is performed by truck with fuel.

## Product end of life (C1-C4, D)

The product end of life (C1) is assumed zero since the consumption of energy and natural resources is negligible for disassembling. Steel is a fully recyclable material and has a strong market position, therefore assumptions has taken that the cabinet will end up in material recycling when the building, where the cabinet is installed, is demolished and that the accessories for the cabinet ends up in combustible waste. For the packaging, it has been assumed that the coardbox is material recycled and the plastic ends up in combustible waste. The product assumed to be sent to the nearest waste facility. The benefits in the resource recovery stage will be mostly material recycling and a smaller part energy recovery.



## Cut-off rules

Life cycle inventory data shall according to EN 15804 include a minimum of 95% of total inflows (mass and energy) per module. In addition, if less than 100% of the inflows are accounted for, proxy data or extrapolation should be used to achieve 100% completeness. Transport of waste packaging to waste treatment has excluded from the study, since it is outside the system boundary (A5).

## Background data

The data quality of the background data is considered good. All specific data that includes processes, volume of different materials, energy & water usage and transport distance has been collected by questionnaire and personal contact with the manufacturer. Ecoinvent database has been used. Ecoinvent is the world's biggest LCI data library and contains data for the specific geographical regions relevant for this study, that have been analysed to be the most suitable for the various steps in the process. Information on biogenic carbon content is calculated with the formula from EN 350-2 and information from IVL. Collected data represent average yearly data for 2021 and assumed to be representative for the EPDs period of validity of 5 years.

## Electricity data

The electricity consumption in the A3 module accounts for less than 30% of the total energy use in module A1-A3. The electricity used is from renewable resources from Sweden, that are modulated in Ecoinvent 3.8.

## Allocation and assumptions

The declare unit values for 1 kg of product that are used in this study and are calculated, based on the total product weight produced during the year studied. The content of raw material can vary slightly between the different dimensions of the cabinets and are examined with high accuracy that they variation of GWP-GHG stays within 10%. Data is allocated for the energy use of the declared unit. The allocation is based on production rate with complexity and high accuracy. The raw material necessary for the manufacturing and the amount of packaging is allocated to product based on the amount of material used to manufacture the declare unit, including waste. Allocation is made with complexity and high accuracy. The declared unit is based on LK Shunt Cabinet M60n with associated frame/hatch. The variance of the declared products is less than 10%, that is based according to data quality requirements outlined in PCR 2019:14.

The used cabinet is assumed to be transported 50 km to the nearest waste disposal facility. The waste treatment assumption has resulted in that the cabinet will get material recycle as metal and that the accessories for the cabinet ends up in combustible waste. The waste treatment builds and presupposes that the cabinet is installed in the building and that they are easy to de-construct when the building demolished. The cabinet and the cardboard are assumed to be material recycled at 95%. The accessories and the plastic in the packaging are assumed to be incinerated with energy recovery efficiency at 61%.



## Recycling of packaging and product

Within the framework of producer responsibility, LK are affiliated with FTI, the Packaging and Newspaper Collection, which is the business community's collection system for recycling packaging. Packaging shall recycle as carton and plastic. None of the packaging material are classified as hazardous waste.

## Environmental information

Potential environmental impact – mandatory indicators according to EN 15804.  
Results of declared unit of the study.

### Results per declared unit

| Indicator                        | Unit                                 | A1       | A2       | A3        | Tot.A1-A3 | A4       | C1 | C2       | C3       | C4       | D         |
|----------------------------------|--------------------------------------|----------|----------|-----------|-----------|----------|----|----------|----------|----------|-----------|
| GWP-fossil                       | kg CO <sub>2</sub> eq.               | 2,17E+00 | 3,51E-02 | 2,69E-01  | 2,47E+00  | 6,01E-02 | 0  | 6,56E-03 | 6,31E-03 | 9,62E-06 | -9,35E-01 |
| GWP-biogenic                     | kg CO <sub>2</sub> eq.               | 2,33E-03 | 2,99E-05 | -3,87E-02 | -3,64E-02 | 5,12E-05 | 0  | 6,09E-06 | 4,73E-05 | 5,44E-08 | -1,66E-02 |
| GWP-luluc                        | kg CO <sub>2</sub> eq.               | 1,57E-03 | 1,38E-05 | 7,21E-04  | 2,30E-03  | 2,36E-05 | 0  | 2,67E-06 | 7,16E-06 | 3,34E-09 | -1,95E-03 |
| GWP-total                        | kg CO <sub>2</sub> eq.               | 2,17E+00 | 3,51E-02 | 2,31E-01  | 2,44E+00  | 6,02E-02 | 0  | 6,57E-03 | 6,36E-03 | 9,68E-06 | -9,55E-01 |
| ODP                              | kg CFC 11 eq.                        | 1,40E-07 | 8,12E-09 | 3,50E-08  | 1,83E-07  | 1,39E-08 | 0  | 1,54E-09 | 2,51E-09 | 4,42E-12 | -8,16E-08 |
| AP                               | mol H <sup>+</sup> eq.               | 1,21E-02 | 1,42E-04 | 1,10E-03  | 1,34E-02  | 2,44E-04 | 0  | 3,72E-05 | 7,07E-05 | 7,66E-08 | -6,23E-03 |
| EP-freshwater                    | kg PO <sub>4</sub> <sup>3-</sup> eq. | 3,03E-03 | 6,94E-06 | 2,29E-04  | 3,26E-03  | 1,19E-05 | 0  | 1,36E-06 | 6,27E-06 | 1,67E-07 | -2,00E-03 |
| EP-freshwater                    | kg P eq.                             | 9,86E-04 | 2,26E-06 | 7,45E-05  | 1,06E-03  | 3,87E-06 | 0  | 4,43E-07 | 2,04E-06 | 5,43E-08 | -6,53E-04 |
| EP-marine                        | kg N eq.                             | 1,98E-03 | 4,29E-05 | 4,03E-04  | 2,42E-03  | 7,35E-05 | 0  | 1,35E-05 | 2,67E-05 | 1,05E-05 | -1,45E-03 |
| EP-terrestrial                   | mol N eq.                            | 2,04E-02 | 4,69E-04 | 2,91E-03  | 2,38E-02  | 8,03E-04 | 0  | 1,47E-04 | 3,02E-04 | 2,93E-07 | -1,46E-02 |
| POCP                             | kg NMVOC eq.                         | 8,48E-03 | 1,44E-04 | 7,26E-04  | 9,35E-03  | 2,46E-04 | 0  | 4,21E-05 | 8,08E-05 | 8,56E-08 | -5,36E-03 |
| ADP-minerals&metals <sup>2</sup> | kg Sb eq.                            | 3,48E-05 | 1,22E-07 | 8,45E-07  | 3,58E-05  | 2,09E-07 | 0  | 2,20E-08 | 5,90E-08 | 2,85E-11 | -3,24E-05 |
| ADP-fossil <sup>2</sup>          | MJ                                   | 3,00E+01 | 5,31E-01 | 3,07E+00  | 3,36E+01  | 9,09E-01 | 0  | 1,01E-01 | 7,51E-02 | 2,95E-04 | -1,41E+01 |
| WDP <sup>2</sup>                 | m <sup>3</sup>                       | 1,17E+00 | 1,59E-03 | 8,94E-02  | 1,26E+00  | 2,72E-03 | 0  | 3,32E-04 | 4,28E-03 | 1,07E-06 | -4,20E-01 |

### Acronyms

GWP-fossil = Global Warming Potential fossil fuels; GWP-biogenic = Global Warming Potential biogenic; GWP-luluc = Global Warming Potential land use and land use change; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential, Accumulated Exceedance; EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption

Potential environmental impact – additional mandatory indicators according to EN 15804.

**Results per declared unit**

| Indicator                               | Unit         | A1       | A2       | A3       | Tot.A1-A3 | A4       | C1 | C2       | C3       | C4       | D         |
|-----------------------------------------|--------------|----------|----------|----------|-----------|----------|----|----------|----------|----------|-----------|
| Particulate matter                      | disease inc. | 1,44E-07 | 3,03E-09 | 1,50E-08 | 1,62E-07  | 5,19E-09 | 0  | 7,26E-10 | 1,53E-09 | 1,54E-12 | -1,02E-07 |
| Ionising radiation <sup>1</sup>         | kBq U-235 eq | 2,04E-01 | 2,73E-03 | 1,88E-02 | 2,25E-01  | 4,67E-03 | 0  | 5,21E-04 | 5,98E-04 | 1,47E-06 | -8,21E-02 |
| Ecotoxicity, freshwater <sup>2</sup>    | CTUe         | 5,90E+01 | 4,14E-01 | 4,55E+00 | 6,40E+01  | 7,09E-01 | 0  | 8,00E-02 | 1,19E-01 | 8,55E-01 | -4,28E+01 |
| Human toxicity, cancer <sup>2</sup>     | CTUh         | 1,00E-08 | 1,34E-11 | 1,58E-10 | 1,02E-08  | 2,30E-11 | 0  | 3,19E-12 | 4,72E-11 | 2,54E-11 | -7,65E-09 |
| Human toxicity, non-cancer <sup>2</sup> | CTUh         | 4,71E-08 | 4,35E-10 | 2,62E-09 | 5,01E-08  | 7,45E-10 | 0  | 9,23E-11 | 1,02E-10 | 5,32E-10 | -3,20E-08 |
| Land use <sup>2</sup>                   | Pt           | 9,19E+00 | 3,65E-01 | 5,18E+00 | 1,47E+01  | 6,24E-01 | 0  | 8,62E-02 | 2,05E-02 | 1,03E-03 | -1,56E+01 |

Disclaimer 1 – This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator.

Disclaimer 2 – The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator.

## Climate impact IPCC 2013 GWP 100

**Results per declared unit**

| Indicator | Unit       | A1       | A2       | A3       | Tot.A1-A3 | A4       | C1 | C2       | C3       | C4       | D         |
|-----------|------------|----------|----------|----------|-----------|----------|----|----------|----------|----------|-----------|
| GWP-GHG   | kg CO2 eq. | 2,10E+00 | 3,48E-02 | 2,73E-01 | 2,41E+00  | 5,96E-02 | 0  | 6,51E-03 | 6,21E-03 | 9,50E-06 | -9,05E-01 |

The indicator includes all greenhouse gases included in GWP-total but excludes biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product. This indicator is thus almost equal to the GWP indicator originally defined in EN 15804:2012+A1:2013.

## Use of resources

### Results per declared unit

| Indicator | Unit | A1       | A2       | A3       | Tot.A1-A3 | A4       | C1 | C2       | C3       | C4       | D         |
|-----------|------|----------|----------|----------|-----------|----------|----|----------|----------|----------|-----------|
| PERE      | MJ   | 3,04E+00 | 7,48E-03 | 6,08E+00 | 9,12E+00  | 1,28E-02 | 0  | 1,45E-03 | 6,51E-03 | 9,32E-06 | -4,10E+00 |
| PERM      | MJ   | 0        | 0        | 1,87E+00 | 1,87E+00  | 0        | 0  | 0        | 0        | 0        | 0         |
| PERT      | MJ   | 3,04E+00 | 7,48E-03 | 7,95E+00 | 1,09E+01  | 1,28E-02 | 0  | 1,45E-03 | 6,51E-03 | 9,32E-06 | -4,10E+00 |
| PENRE     | MJ   | 3,19E+01 | 5,63E-01 | 3,29E+00 | 3,58E+01  | 9,65E-01 | 0  | 1,07E-01 | 8,02E-02 | 3,14E-04 | -1,50E+01 |
| PENRM     | MJ   | 0        | 0        | 0        | 0         | 0        | 0  | 0        | 0        | 0        | 0         |
| PENRT     | MJ   | 3,19E+01 | 5,63E-01 | 3,29E+00 | 3,58E+01  | 9,65E-01 | 0  | 1,07E-01 | 8,02E-02 | 3,14E-04 | -1,50E+01 |
| SM        | kg   | 5,03E-01 | 0        | 0        | 5,03E-01  | 0        | 0  | 0        | 0        | 0        | 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        | m3   | 1,26E-01 | 8,21E-04 | 1,03E-02 | 1,37E-01  | 1,41E-03 | 0  | 1,80E-04 | 1,66E-03 | 5,62E-07 | -7,34E-02 |

### Acronyms

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 re-sources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water

## Waste production

[illegible]

## Output flows

[illegible]

## Information on biogenic carbon content

### Results per functional or declared unit

| BIOGENIC CARBON CONTENT              | Unit | QUANTITY |
|--------------------------------------|------|----------|
| Biogenic carbon content in product   | kg C | 0        |
| Biogenic carbon content in packaging | kg C | 0,05     |

Note: 1 kg biogenic carbon is equivalent to 44/12 kg CO<sub>2</sub>.

## References

General Programme Instructions of the International EPD® System. Version 3.01.

PCR Construction Products. 2019:14, version 1.11.33, the International EPD System, Date 2021-02-05.

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## Appendix

| Product name             | Product number | Weight (kg) | Weight without packaging (kg) |
|--------------------------|----------------|-------------|-------------------------------|
| LK Manifold Cabinet UFH  | 2434684        | 8           | 7.4                           |
|                          | 2434683        | 10.45       | 9.9                           |
|                          | 2410313        | 13.32       | 12.5                          |
| LK Shunt Cabinet VS2     | 2435361        | 10.82       | 10                            |
|                          | 2435362        | 13.49       | 12.5                          |
| LK Manifold Cabinet HX   | 2410318        | 12.55       | 11.8                          |
| LK Manifold Cabinet Qmax | 2410310        | 16.93       | 16.1                          |
| LK Shunt Cabinet M60n    | 2435370        | 5.58        | 5                             |
|                          | 2435369        | 9.37        | 8.7                           |
| LK Frame/hatch           | 2435367        | 3.91        | 3.4                           |
|                          | 2434680        | 6.06        | 5.5                           |
|                          | 2434679        | 8.3         | 7.7                           |
|                          | 2435363        | 9.79        | 9                             |
|                          | 2434676        | 10          | 9.4                           |
|                          | 2435368        | 2.5         | 2.1                           |
|                          | 2434681        | 4.7         | 3.9                           |
|                          | 2434678        | 6.5         | 5.5                           |
|                          | 2435364        | 8.3         | 7.05                          |
|                          | 2434677        | 9.1         | 7.73                          |
| Base                     | 2434689        | 1.8         | 1.53                          |
|                          | 2435372        | 2.65        | 2.25                          |
|                          | 2434688        | 2.3         | 1.95                          |
|                          | 2435242        | 3.4         | 2.9                           |
|                          | 2435365        | 3.3         | 2.8                           |
|                          | 2410311        | 3.8         | 3.23                          |
|                          | 2434686        | 3.7         | 3.15                          |
| LK Increased frame UFH   | 33014          | 1.4         | 1.2                           |
|                          | 33015          | 1.6         | 1.36                          |
|                          | 33016          | 2           | 1.7                           |
|                          | 33017          | 8.6         | 7.31                          |
|                          | 33018          | 9.4         | 7.9                           |

| Product name                       | Product number | Weight (kg) | Weight without packaging (kg) |
|------------------------------------|----------------|-------------|-------------------------------|
| LK Manifold Cabinet UNI            | 1881315        | 4.02        | 3.54                          |
|                                    | 1881314        | 5.02        | 4.48                          |
|                                    | 1881313        | 5.63        | 5.2                           |
|                                    | 1881316        | 7.08        | 6.37                          |
| LK Manifold Cabinet UNI 550 L & XL | 1875827        | 5.77        | 5.3                           |
|                                    | 1875828        | 6.31        | 5.65                          |
| LK Manifold Cabinet UNI 550 CS     | 1882341        | 7.78        | 7.2                           |
| LK Manifold Cabinet UNI VM         | 1882399        | 6.12        | 5.4                           |
| LK Fitting Cabinet VUK             | 1876498        | 2.25        | 2.09                          |
| LK Fitting Cabinet UNI 350x350     | 1882340        | 3.77        | 3.39                          |
| LK Valve Cabinet                   | 29725          | 3.05        | 2.67                          |
| LK Installation cabinet RTB        | 2988856        | 3.8         | 3.55                          |
|                                    | 2988857        | 4.75        | 4                             |
| LK Manifold Cabinet UNI 550 FH     | 1882678        | 7.78        | 7.2                           |
| LK Frame/Hatch                     | 1882348        | 2.13        | 1.8                           |
|                                    | 1881308        | 2.97        | 2.55                          |
|                                    | 1881311        | 3.58        | 3.07                          |
|                                    | 1881305        | 4.22        | 3.64                          |
|                                    | 1881303        | 5.1         | 4.51                          |
|                                    | 1882296        | 5.21        | 4.51                          |
|                                    | 1881310        | 2.68        | 2.27                          |
|                                    | 1881312        | 3.29        | 2.8                           |
|                                    | 1881306        | 3.9         | 3.31                          |
|                                    | 1881304        | 4.82        | 4.13                          |
|                                    | 1882642        | 1.6         | 1.36                          |
|                                    | 1882643        | 2.3         | 1.95                          |
|                                    | 1882644        | 3           | 2.55                          |
|                                    | 1882645        | 3.6         | 3.06                          |
|                                    | 1882646        | 4.2         | 3.57                          |
|                                    | 1882647        | 4.3         | 3.65                          |
|                                    | 1882648        | 6           | 5.1                           |
|                                    | 1882649        | 7.7         | 6.54                          |
|                                    | 1882137        | 2.7         | 2.3                           |
|                                    | 1882663        | 2.1         | 1.77                          |
|                                    | 1881307        | 4.23        | 3.65                          |
|                                    | 2054838        | 1.9         | 1.55                          |
|                                    | 29726          | 1.2         | 1.02                          |
|                                    | 29729          | 1.6         | 1.36                          |
| Base                               | 1881300        | 2.4         | 2                             |
|                                    | 1881301        | 1.4         | 1.2                           |
|                                    | 1881302        | 1.7         | 1.44                          |