



This appendix refers to the EPD MD-24163-EN, developed according to EN15804+A2:2019.

Results in the appendix communicates LCA results in the format described in EN15804+A1:2013, in order to accommodate a need in the transition period between the two standard revisions. The appendix cannot stand alone, as the reference EPD describes the basis of the assessment.

| ENVIRONMENTAL IMPACTS PER 1 m ² of insulation material with thickness corresponding to R-value = 1m ² K/W | | | | | | | | | | | | | | |
|---|---|------------|----------|----------|----------|----------|----------|----------|----------|----------|-----------|------------|----------|-----------|
| | | Scenario 1 | | | | | | | | | | Scenario 2 | | |
| Parameter | Unit | A1 | A2 | A3 | A4 | A5 | C1 | C2 | C3 | C4 | D | C3 | C4 | D |
| GWP | kg CO ₂ -eq. | 9,13E-01 | 5,46E-02 | 1,47E-01 | 6,61E-04 | 1,18E-02 | 0,00E+00 | 2,07E-04 | 1,77E-04 | 0,00E+00 | -9,35E-01 | 0,00E+00 | 1,57E+00 | -5,64E-01 |
| ODP | kg CFC11-eq. | 2,16E-11 | 8,35E-15 | 2,98E-10 | 1,01E-16 | 2,06E-15 | 0,00E+00 | 3,17E-17 | 8,14E-15 | 0,00E+00 | -2,11E-12 | 0,00E+00 | 8,09E-14 | -5,38E-12 |
| AP | kg SO ₂ -eq. | 1,17E-03 | 4,99E-05 | 1,46E-04 | 6,91E-07 | 8,88E-07 | 0,00E+00 | 2,18E-07 | 7,80E-19 | 0,00E+00 | -1,08E-03 | 0,00E+00 | 8,22E-05 | -8,97E-04 |
| EP | kg PO ₄ (3 ⁻)-eq. | 1,54E-04 | 1,06E-05 | 3,11E-05 | 1,51E-07 | 1,94E-07 | 0,00E+00 | 4,76E-08 | 1,83E-10 | 0,00E+00 | -1,52E-04 | 0,00E+00 | 1,85E-05 | -1,46E-04 |
| POCP | kg ethene-eq. | 2,22E-04 | 4,58E-06 | 1,07E-02 | 5,57E-08 | 9,52E-08 | 0,00E+00 | 1,74E-08 | 2,04E-11 | 0,00E+00 | -2,12E-04 | 0,00E+00 | 8,71E-06 | -9,04E-05 |
| ADPE | kg Sb-eq. | 3,54E-08 | 3,60E-09 | 7,29E-08 | 4,37E-11 | 2,00E-11 | 0,00E+00 | 1,37E-11 | 2,46E-14 | 0,00E+00 | -3,55E-08 | 0,00E+00 | 7,10E-10 | -5,72E-08 |
| ADPF | MJ | 3,30E+01 | 7,30E-01 | 2,27E+00 | 8,88E-03 | 4,24E-03 | 0,00E+00 | 2,78E-03 | 3,51E-11 | 0,00E+00 | -3,30E+01 | 0,00E+00 | 1,41E-01 | -6,37E+00 |
| Caption | GWP = Global warming potential; ODP = Ozone depletion potential; AP = Acidification potential of soil and water; EP = Eutrophication potential; POCP = Photochemical ozone creation potential; ADPE = Abiotic depletion potential for non fossil resources; ADPF = Abiotic depletion potential for fossil resources | | | | | | | | | | | | | |
| | The numbers are declared in scientific notation, e.g., 1.95E+02. This number can also be written as: 1.95*10 ² or 195, while 1.12E-11 is the same as 1.12*10 ⁻¹¹ or 0.0000000000112. | | | | | | | | | | | | | |

| RESOURCE USE PER 1 m ² of insulation material with thickness corresponding to R-value = 1m ² K/W | | | | | | | | | | | | | | |
|--|---|------------|----------|-----------|----------|-----------|----------|----------|-----------|----------|-----------|------------|-----------|-----------|
| | | Scenario 1 | | | | | | | | | | Scenario 2 | | |
| Parameter | Unit | A1 | A2 | A3 | A4 | A5 | C1 | C2 | C3 | C4 | D | C3 | C4 | D |
| PERE | MJ | 9,24E-01 | 5,40E-02 | 4,61E-02 | 6,57E-04 | 1,02E-03 | 0,00E+00 | 2,05E-04 | 6,13E-04 | 0,00E+00 | -9,65E-01 | 0,00E+00 | 4,40E-02 | -5,59E+00 |
| PERM | MJ | 1,40E-01 | 0,00E+00 | -1,40E-01 | 0,00E+00 | -4,78E-04 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 |
| PERT | MJ | 1,06E+00 | 5,40E-02 | -9,35E-02 | 6,57E-04 | 5,42E-04 | 0,00E+00 | 2,05E-04 | 6,13E-04 | 0,00E+00 | -9,65E-01 | 0,00E+00 | 4,40E-02 | -5,59E+00 |
| PENRE | MJ | 3,37E+01 | 7,45E-01 | 3,72E+00 | 9,06E-03 | 4,72E-03 | 0,00E+00 | 2,83E-03 | 2,29E-03 | 0,00E+00 | -3,37E+01 | 0,00E+00 | 1,73E-01 | -8,89E+00 |
| PENRM | MJ | 1,69E+01 | 0,00E+00 | 2,31E-01 | 0,00E+00 | -2,64E-01 | 0,00E+00 | 0,00E+00 | -1,69E+01 | 0,00E+00 | 0,00E+00 | 0,00E+00 | -1,69E+01 | 0,00E+00 |
| PENRT | MJ | 5,06E+01 | 7,45E-01 | 3,95E+00 | 9,06E-03 | -2,60E-01 | 0,00E+00 | 2,83E-03 | -1,69E+01 | 0,00E+00 | -3,37E+01 | 0,00E+00 | -1,67E+01 | -8,89E+00 |
| SM | kg | 7,14E-03 | 0,00E+00 | 2,44E-05 | 0,00E+00 | 0,00E+00 | 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 | 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 | 0,00E+00 | 0,00E+00 | 0,00E+00 |
| FW | m ³ | 4,77E-03 | 5,92E-05 | 1,40E-03 | 7,19E-07 | 2,53E-05 | 0,00E+00 | 2,25E-07 | 0,00E+00 | 0,00E+00 | -4,95E-03 | 0,00E+00 | 2,97E-03 | -3,40E-03 |
| Caption | 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 = Net use of fresh water | | | | | | | | | | | | | |
| | The numbers are declared in scientific notation, e.g., 1.95E+02. This number can also be written as: 1.95*10 ² or 195, while 1.12E-11 is the same as 1.12*10 ⁻¹¹ or 0.0000000000112. | | | | | | | | | | | | | |

| WASTE CATEGORIES AND OUTPUT FLOWS PER 1 m ² of insulation material with thickness corresponding to R-value = 1m ² K/W | | | | | | | | | | | | | | |
|---|---|------------|----------|----------|----------|----------|----------|----------|----------|----------|-----------|------------|----------|-----------|
| | | Scenario 1 | | | | | | | | | | Scenario 2 | | |
| Parameter | Unit | A1 | A2 | A3 | A4 | A5 | C1 | C2 | C3 | C4 | D | C3 | C4 | D |
| HWD | kg | 2,08E-09 | 2,31E-12 | 4,10E-11 | 2,80E-14 | 4,01E-14 | 0,00E+00 | 8,76E-15 | 0,00E+00 | 0,00E+00 | -2,28E-09 | 0,00E+00 | 3,90E-12 | -3,72E-10 |
| NHWD | kg | 7,72E-03 | 1,14E-04 | 1,53E-03 | 1,38E-06 | 7,47E-04 | 0,00E+00 | 4,32E-07 | 5,34E-17 | 0,00E+00 | -8,39E-03 | 0,00E+00 | 5,65E-03 | -1,69E-02 |
| RWD | kg | 1,15E-04 | 1,39E-06 | 6,19E-06 | 1,70E-08 | 1,55E-07 | 0,00E+00 | 5,30E-09 | 3,95E-09 | 0,00E+00 | -1,25E-04 | 0,00E+00 | 1,04E-05 | -8,20E-04 |
| CRU | kg | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 |
| MFR | kg | 0,00E+00 | 0,00E+00 | 6,09E-03 | 0,00E+00 | 2,18E-03 | 0,00E+00 | 0,00E+00 | 4,65E-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 | 0,00E+00 | 0,00E+00 | 0,00E+00 |
| EEE | MJ | 0,00E+00 | 0,00E+00 | 2,12E-02 | 0,00E+00 | 2,13E-02 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 2,82E+00 | 0,00E+00 |
| EET | MJ | 0,00E+00 | 0,00E+00 | 3,82E-02 | 0,00E+00 | 3,81E-02 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 5,02E+00 | 0,00E+00 |
| Caption | 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 | | | | | | | | | | | | | |
| | The numbers are declared in scientific notation, e.g., 1.95E+02. This number can also be written as: 1.95*10 ² or 195, while 1.12E-11 is the same as 1.12*10 ⁻¹¹ or 0.0000000000112. | | | | | | | | | | | | | |

Independent verification of the tool on which declaration and data is based, according to EN ISO 14025:2010.
Checked and approved by

David Althoff Palm
Third party verifier of MD-24163-EN

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