# Environmental Product Declaration

*according to ISO 14025 and EN 15804*

This declaration is for:

**AeroDek - Tradition Plus 0.90 mm**

Provided by:

**BMI AeroDek**


program operator

**Stichting MRPI®**

publisher

**Stichting MRPI®**

**www.mrpi.nl**

MRPI® registration

**1.1.00172.2021**

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**01-03-2026**

## COMPANY INFORMATION

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## PRODUCT

AeroDek - Tradition Plus 0.90 mm

## DECLARED UNIT/FUNCTIONAL UNIT

m²

## DESCRIPTION OF PRODUCT

A m² of a pitched steel roof, produced (cradle to gate LCA, only phase A1-A3)

## VISUAL PRODUCT

## MRPI® REGISTRATION

1.1.00172.2021

## DATE OF ISSUE

01-03-2021

## EXPIRY DATE

01-03-2026

## MORE INFORMATION

*https://www.bmigroup.com/be/producten/products/monier/aerodek-tradition-plus*

## SCOPE OF DECLARATION

This MRPI®-EPD certificate is verified by **Kamiel Jansen, Primum.**
The LCA study has been done by **Mathias Ruinart de Brimont/Wouter Jan van den Berg, BMI Group.**
The certificate is based on an LCA-dossier according to ISO14025 and NEN-EN15804+A1. It is verified according to the 'EPD-MRPI® verification protocol May 2017.v3.1'. EPDs of construction products may not be comparable if they do not comply with NEN-EN15804+A1. Declaration of SVHC that are listed on the 'Candidate List of Substances of Very High Concern for authorisation' when content exceeds the limits for registration with ECHA.

## PROGRAM OPERATOR

Stichting MRPI®
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ir. J-P den Hollander, Managing director MRPI®

| *DEMONSTRATION OF VERIFICATION* |
|---|
| CEN standard EN15804 serves as the core PCR[a] |
| Independent verification of the declaration and data, according to EN ISO 14025:2010:<br>internal: external: X |
| Third party verifier:<br>Kamiel Jansen, Primum |
| [a] PCR = Product Category Rules |

## DETAILED PRODUCT DESCRIPTION

AeroDek Tradition Plus 0.9 mm is a lightweight steel tile combined of steel core, metallic coatings, basecoat (coloured), natural stone granulates (coloured) and a transparent overglaze.

The first step is to press the steel to have the proper profile. Then, there are 4 steps on the stone coated tiles production line as we apply base coat, granules and overglaze and finally cure the tiles.

The Reference Service Life (RSL) of the AeroDek Tradition Plus 0.9 mm is 60 years.

| COMPONENT (> 1%) | [kg / %] |
|---|---|
| Steel with primer | confidential |
| Granules | confidential |
| Base coat | confidential |
| Acrylic Varnish | confidential |

**(*) > 1% of total mass**

## SCOPE AND TYPE

The AeroDek steel tiles are produced at the location of BMI Herstal and they are applied at the European market.
The background database is Ecoinvent version 3.5. It is a specific EPD for a specific product and the type of this EPD is Cradle-to-Gate. The life cycle stages included are shown next.

| PRODUCT STAGE | | | CONSTRUCTION PROCESS STAGE | | USE STAGE | | | | | | | | END OF LIFE STAGE | | | | BENEFITS AND LOADS BEYOND THE SYSTEM BOUNDARIES |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Raw material supply | Transport | Manufacturing | Transport gate to 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 | MNA | MNA | MNA | MNA | MNA | MNA | MNA | MNA | MNA | MNA | MNA | MNA | MNA | MNA |

X = Module assessed

MNA = Module not assessed

# LCA Processflow tile production

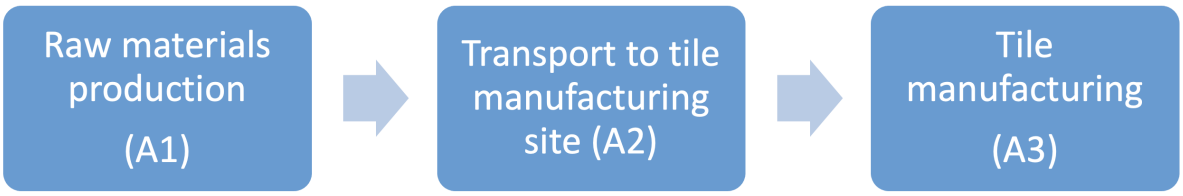


*Figure: LCA process diagram according to EN 15804(7.2.1)*

## REPRESENTATIVENESS

The input data are representative for AeroDek - Tradition Plus 0.90 mm, a product of BMI. The data are representative for the Netherlands.

## ENVIRONMENTAL IMPACT per functional unit or declared unit

| | UNIT | A1 | A2 | A3 | A1-A3 |
|---|---|---|---|---|---|
| ADPE | kg Sb-eq. | 1.41E-5 | 6.34E-7 | 1.96E-3 | 1.97E-3 |
| ADPF | MJ | 3.32E+2 | 3.47E+0 | 7.04E+1 | 4.06E+2 |
| GWP | kg CO2-eq. | 2.69E+1 | 2.23E-1 | 4.67E+0 | 3.18E+1 |
| ODP | kg CFC11-eq. | 9.57E-7 | 4.16E-8 | 4.54E-7 | 1.45E-6 |
| POCP | kg ethene-eq. | 1.29E-2 | 1.32E-4 | 3.60E-3 | 1.66E-2 |
| AP | kg SO2-eq. | 7.42E-2 | 9.65E-4 | 2.23E-2 | 9.74E-2 |
| EP | kg (PO4)3--eq. | 1.07E-2 | 1.95E-4 | 4.21E-3 | 1.51E-2 |

ADPE = Abiotic Depletion Potential for non-fossil resources
ADPF = Abiotic Depletion Potential for fossil resources
GWP = Global Warming Potential
ODP = Depletion potential of the stratospheric ozone layer
POCP = Formation potential of tropospheric ozone photochemical oxidants
AP = Acidification Potential of land and water
EP = Eutrophication Potential

## RESOURCE USE per functional unit or declared unit

| | UNIT | A1 | A2 | A3 | A1-A3 |
|---|---|---|---|---|---|
| PERE | MJ | 1.06E+1 | 0.00 | 4.06E+0 | 1.47E+1 |
| PERM | MJ | 0.00 | 0.00 | 0.00 | 0.00 |
| PERT | MJ | 2.83E+0 | 3.65E-2 | 2.02E+1 | 2.31E+1 |
| PENRE | MJ | 2.49E+2 | 0.00 | 5.71E+1 | 3.06E+2 |
| PENRM | MJ | 0.00 | 0.00 | 0.00 | 0.00 |
| PENRT | MJ | 2.83E+2 | 3.70E+0 | 8.17E+1 | 3.69E+2 |
| SM | kg | 8.41E-1 | 0.00 | 4.21E-3 | 8.46E-1 |
| RSF | MJ | 0.00 | 0.00 | 0.00 | 0.00 |
| NRSF | MJ | 0.00 | 0.00 | 0.00 | 0.00 |
| FW | m3 | 2.08E-1 | 5.90E-4 | 6.43E-2 | 2.73E-1 |

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

## OUTPUT FLOWS AND WASTE CATEGORIES per functional unit or declared unit

| | UNIT | A1 | A2 | A3 | A1-A3 |
|---|---|---|---|---|---|
| HWD | kg | 1.04E-3 | 2.21E-6 | 9.52E-4 | 1.99E-3 |
| NHWD | kg | 2.75E+0 | 2.12E-1 | 3.67E-1 | 3.33E+0 |
| RWD | kg | 5.84E-4 | 2.34E-5 | 2.91E-4 | 8.99E-4 |
| CRU | kg | 0.00 | 0.00 | 5.55E-3 | 5.55E-3 |
| MFR | kg | 0.00 | 0.00 | 4.02E-2 | 4.02E-2 |
| MER | kg | 0.00 | 0.00 | 0.00 | 0.00 |
| EEE | MJ | 0.00 | 0.00 | 2.74E-4 | 2.74E-4 |
| ETE | MJ | 0.00 | 0.00 | 4.72E-4 | 4.72E-4 |

HWD = Hazardous Waste Disposed
NHWD = Non Hazardous Waste Disposed
RWD = Radioactive Waste Disposed
CRU = Components for reuse
MFR = Materials for recycling
MER = Materials for energy recovery
EEE = Exported Electrical Energy
ETE = Exported Thermal Energy

## CALCULATION RULES

In the Life cycle assessment the following is included in this study: Production (A1-A3).

Modules A1-A3 of the AeroDek tiles production include the following:
- The provision of resources, additives, and energy;
- Transport of resources and additives to the production site;
- Production processes on-site including energy;
- Production of additives, disposal of production residues, and consideration of related emissions;
- Recycling of production/manufacturing scrap. Steel scrap is assumed to reach the end-of-waste status once it is shredded and sorted, thus becomes input to the product system in the inventory.

*Cut-off criteria*

Measurement of on-site emissions were performed by BMI and those emissions were considered. The specific emissions that are linked to the provision of thermal and electrical energy are also considered in the specific processes. All reported data were incorporated and modelled using the best available LCI data. Data for the sites were cross-checked with one another to identify potential data gaps. No processes, materials or emissions that are known to make a significant contribution to the environmental impact of the studied products have been omitted. On this basis, there is no evidence to suggest that input or output contributing more than 1% to the overall mass or energy of the system - or that are environmentally significant - have been omitted.

*Assumptions and approximations*

In this study, primary data was used to model all on-site processes. This data was cross-checked to identify and eliminate data gaps. Secondary data (from the Ecoinvent database) was as technologically and geographically representative as possible.

*Data quality*

The foreground data collected by the manufacturer are based on yearly production amounts and extrapolations of measurements on specific machines and plants. The production data refer to the year 2019. Most of the necessary life cycle inventories for the basic materials are available in the Ecoinvent (v3.5) database.

## SCENARIOS AND ADDITIONAL TECHNICAL INFORMATION

In the Life cycle assessment the following is included in this study:

Product stage (A1-A3)

The production stage consists of the extraction of raw materials, transportation of the raw materials, processing the raw materials into materials and the production of the product. The required energy for production, external treatments, ancillary materials, packaging material and production emissions are included.

| Transport Movement | Transport conveyance | Weight x distance [TKM} |
|---|---|---|
| Transport from suppliers and indirect suppliers to BMI | Multiple Transport Conveyances | 2.08 |
| Transport to external treament | Multiple Transport Conveyances | 0.05 |

## DECLARATION OF SVHC

None of the substances contained in the product are listed in the "Candidate List of Substances of Very High Concern for authorisation", or they do not exceed the threshold with the European Chemicals Agency.

## REFERENCES

ISO 14040

- DIN EN ISO 14040:2006-10, Environmental management - Life cycle assessment - Principles and framework; EN ISO 14040:2006

ISO 14044

- DIN EN ISO 14044:2006-10, Environmental management - Life cycle assessment - Requirements and guidelines; EN ISO 14040:2006

ISO 14025

- DIN EN ISO 14025:2011-10: Environmental labels and declarations — Type III environmental declarations — Principles and procedures

EN 15804

- EN 15804:2012-04+A1 2013: Sustainability of construction works — Environmental Product Declarations — Core rules for the product category of construction products

## REMARKS

None