

ENVIRONMENTAL PRODUCT DECLARATION

in accordance with ISO 14025, ISO 21930 and EN 15804

| | |
|--------------------------------|------------------------------|
| Owner of the declaration: | ZENO-PROTECT B.V. |
| Program operator: | The Norwegian EPD Foundation |
| Publisher: | The Norwegian EPD Foundation |
| Declaration number: | NEPD-2142-968-EN |
| Registration number: | NEPD-2142-968-EN |
| ECO Platform reference number: | - |
| Issue date: | 17.04.2020 |
| Valid to: | 17.04.2025 |

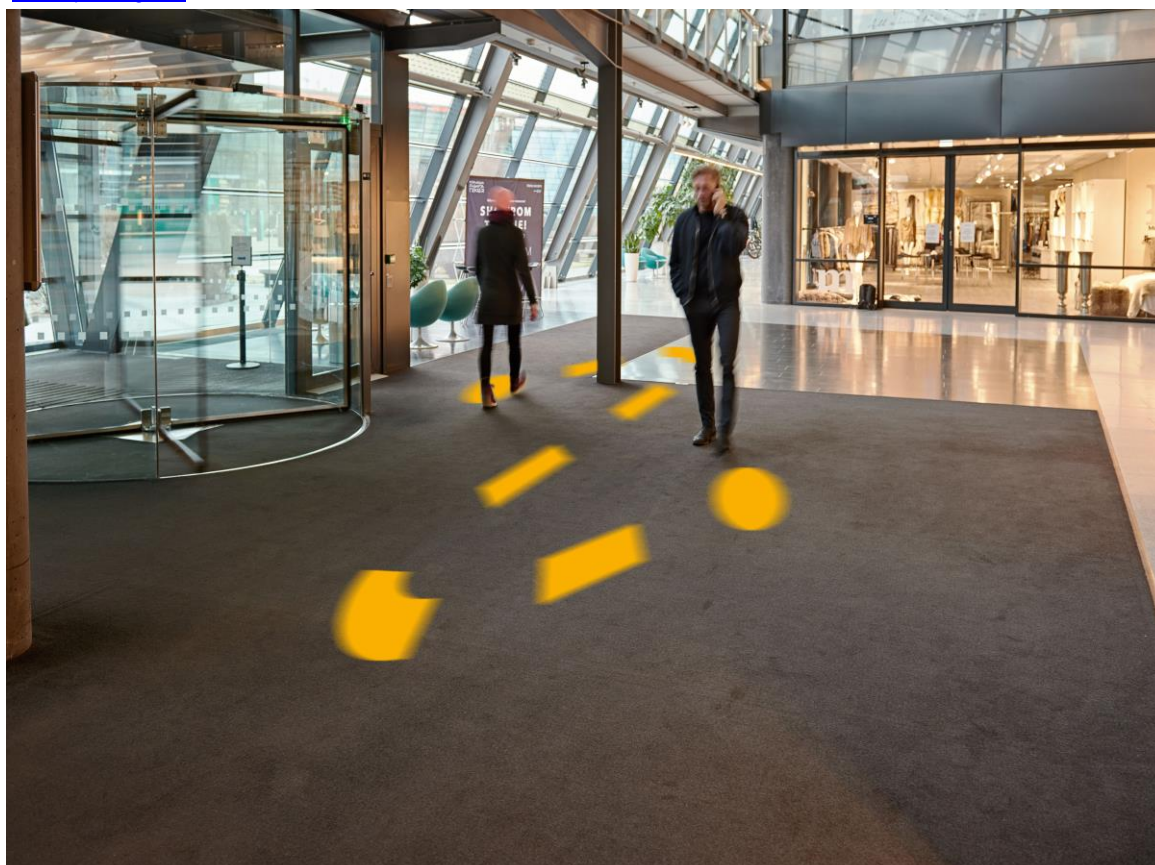
SUPER
(RS belegg 300)

Zeno-Protect B.V.



ZENO PROTECT
ENTRANCE FLOORING

www.epd-norge.no



General information

Product:

SUPER

Program operator:

The Norwegian EPD Foundation

Pb. 5250 Majorstuen, 0303 Oslo

Phone: Phone: +47 977 22 020
e-mail: post@epd-norge.no**Declaration number:**

NEPD-2142-968-EN

ECO Platform reference number:**This declaration is based on Product Category Rules:**

CEN Standard EN 15804 serves as core PCR
This EPD is also compliant with IBU PCR for Building-Related Products and Services, adapted for UL Environment from the range of Environmental Product Declarations of Institute Construction and Environment e.V. (IBU), Part A: Calculation Rules for the Life Cycle Assessment and Requirements on the Project report, version 1.3) used in addition to the core PCR and IBU Part B: Requirements on the EPD for Floor coverings.

Statement of liability:

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

Declared unit:

1 m² of synthetic entrance floor covering roll with a total weight of 3,6 kg

Declared unit with option:

A1, A2, A3, A4, A5, C1, C2,C3, C4

Functional unit:**Verification:**

The CEN Norm EN 15804 serves as the core PCR. Independent verification of the declaration and data, according to ISO14025:2010

internal external

Third party verifier:


SGS SEARCH
<Harry van Ewijk MSc>
(Independent verifier approved by EPD Norway)

Owner of the declaration:

ZENO-PROTECT B.V.

Contact person: Pieter de Jong
Phone: +31 6 51 86 19 96
e-mail: pieter@zeno-protect.com**Manufacturer:**Mercury Flooring
Steenovenstraat 38
B-8790 Waregem
BELGIUMPhone: +32 56 61 06 95
e-mail: info@mercuryflooring.com**Place of production:**Steenovenstraat 38
B-8790 Waregem
BELGIUM**Management system:**

ISO 9001, ISO 14001

Organisation no:

NL805720819B01

Issue date:

17.04.2020

Valid to:

17.04.2025

Year of study:

2019

Comparability:

EPD of construction products may not be comparable if they not comply with EN 15804 and seen in a building context.

The EPD has been worked out by:

The EPD has been calculated by CO2logic team (Laura Shahbenderian) using Open LCA software and EuGeos 15804-IA Database Version 2.1



Approved


Håkon Hauan
Managing Director of EPD-Norway

Product

Product description:

SUPER is a synthetic entrance floor covering made of 100% recycled polyamide, with a non-woven recycled polyester primary backing and reinforced with vinyl backing, manufactured by Zeno-Protect and designed to ensure the covering for heavy commercial use.

The exclusive use of coarse nylon yarns for Super entrance matting provides a very effective brush effect. Therefore an optimum dirt collection can be achieved. Dirt and moisture are absorbed in the pile of SUPER.

SUPER Clean-Off-Zone is installed in places where the foot traffic moves from dirty to clean areas. For example in entrances, between kitchen and restaurant, factory and office, in front of drinks machines and so on.

SUPER allows a perfect combination with other floor covering, is easy to clean and can be used in heavy traffic areas.

Technical data:

Total product weight : 3,6 kg/m²
 Pile weight: ca. 700 g/m²
 Total height: ca. 8 mm
 Pile height: ca. 6,2 mm
 Method of manufacture Tufted 5/32" cut pile
 Pile material : 100% recycled ECONYL® nylon
 Primary backing: Colback™ recycled polyester
 Secondary backing: Comfort™ vinyl | Phthalate-Free
 Number of tufts: ca. 75500 p/m²
 Use classification : 33, Commercial heavy
 Luxury comfort: LC3
 Suitable for castor chairs : A, intensive use r-3,1
 Suitable for stairs: Intensive use
 Thermal resistance: 0,10 m² K/W
 The technical datasheet can be found on Zeno-Protect brochure (page 4-5 for Super) : https://zeno-protect.com/wp-content/uploads/2019/11/Zeno-Protect-Clean-Off-Zone_Brochure_2020_EN.pdf

Product specification:

| Materials | kg | % |
|--------------------|--------|------|
| Recycled nylon | 0,792 | 22 |
| Recycled polyester | 0,108 | 3 |
| Polyvinyl chloride | 0,936 | 26 |
| Filler | 0,72 | 20 |
| Plasticizers | 0,7704 | 21,4 |
| Additives | 0,2736 | 7,6 |

Market:

Global

Reference service life, product:

The service life of textile floorcoverings strongly depends on the correct installation and the cleaning and maintenance instructions provided by Zeno-Protect. The service life will vary depending on the amount of floor traffic and the type and frequency of maintenance.

For Super, the Reference Service Life (RSL) of 10 years could be assumed; technical service life can be considerably longer.

Reference service life, building:

60 years

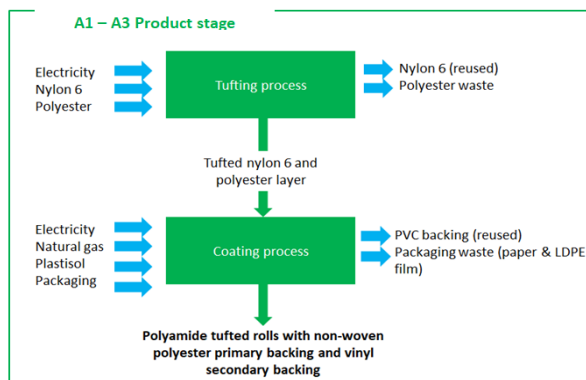
LCA: Calculation rules

Declared unit:

1 m² of synthetic entrance floor covering roll with a total weight of 3,6 kg

System boundary:

The scope is a cradle to gate with options (A1-A3, A4-A5, C1-C4)



Data quality:

Activity data is based on primary data collected amongst Mercury Flooring (the manufacturer) for the year 2019 (energy, waste, packaging, product components quantities, transport distances). Raw material stage data is derived directly from the Ecoinvent 3.3, cut-off database.

Allocation:

The allocation is made in accordance with the provisions of EN 15804. Incoming energy and water and waste production in-house is allocated equally among all products through mass allocation. Effects of primary production of recycled materials allocated to the main product in which the material was used. The recycling process and transportation of the material is allocated to this analysis.

Cut-off criteria:

All major raw materials and all the essential energy is included. The production process for raw materials and energy flows that are included with very small amounts (<1%) are not included. This cut-off rule does not apply for hazardous materials and substances.

LCA: Scenarios and additional technical information

The following information describe the scenarios in the different modules of the EPD.

This is a cradle to gate (A1-A3) EPD with no declared modules after the factory gate. Therefore this section is empty.

Transport from production place to user (A4)

| Type | Capacity utilisation (incl. return) % | | Type of vehicle | Distance km | Fuel/Energy consumption | Value (l/t) |
|--------------------------|--|-----|----------------------|-------------|-------------------------|-------------|
| Truck | A4 | 63% | Lorry 16-32 metric | 209 | 0,0375 l/tkm | 7,8375 |
| Truck | A4 | 63% | Lorry 16-32 metric | 32,8 | 0,0375 l/tkm | 1,23 |
| Truck | C2 | 63% | Lorry 16-32 metric | 50 | 0,0375 l/tkm | 1,875 |
| Truck for waste collecti | A5 | 50% | 21 metric | 50 | 0,336 l/tkm | 16,8 |
| Truck | A4 | 68% | Lorry 3.5-7.5 metric | 202 | 0,109 l/tkm | 22,018 |
| Oceangoing ship | A4 | - | Transoceanic ship | 1133,5 | 0,0025 l/tkm | 2,8338 |

The scenario for transport distances and transportation modes from manufacturing site to warehouse in Norway represents both recorded and calculated routes and distances provided by N3Zones Group commercializing SUPER (RS belegg) in Norway and Sweden. Transport in A4 describes the transport of the product from factory gate in Belgium to the warehouse in Norway and transport to building in Norway/Sweden. Transportation of waste (A5, C2) is based on an average distance of 50 km. Capacity utilization has been calculated by dividing the average load as reported in ecoinvent v3.3 by the maximum load. Fuel consumption as given in ecoinvent v3.3.

| | Unit | Value |
|---------------------------------------|----------------|--------|
| Auxiliary | kg | 0,0648 |
| Water consumption | m ³ | |
| Electricity consumption | kWh | |
| Other energy carriers | MJ | |
| Material loss | kg | 0,648 |
| Output materials from waste treatment | kg | |
| Dust in the air | kg | |

| | Unit | Value |
|--|------|-------|
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |

Installation, covered in module A5, is assumed to include product installation losses (18%), the manufacturing of 2 tapes layers required to instal 1m² product, the packaging disposal and the production and transport of an additional amount of the products to replace installation losses.

Maintenance (B2)/Repair (B3)

| | Unit | Value |
|-------------------------|----------------|-------|
| Maintenance cycle* | | |
| Auxiliary | kg | |
| Other resources | kg | |
| Water consumption | m ³ | |
| Electricity consumption | kWh | |
| Other energy carriers | MJ | |
| Material loss | kg | |

Replacement (B4)/Refurbishment (B5)

| | Unit | Value |
|---------------------------|------|-------|
| Replacement cycle* | | |
| Electricity consumption | kWh | |
| Replacement of worn parts | 0 | |
| | | |
| | | |

* Number or RSL (Reference Service Life)

<Short description>

Operational energy (B6) and water consumption (B7)

| | Unit | Value |
|---------------------------|----------------|-------|
| Water consumption | m ³ | |
| Electricity consumption | kWh | |
| Other energy carriers | MJ | |
| Power output of equipment | kW | |
| | | |
| | | |

End of Life (C1, C3, C4)

| | Unit | Value |
|---------------------------------------|------|-------|
| Hazardous waste disposed | kg | |
| Collected as mixed construction waste | kg | |
| Reuse | kg | |
| Recycling | kg | |
| Energy recovery | kg | 3,6 |
| To landfill | kg | |

<Short description>

Transport to waste processing (C2)

| Type | Capacity utilisation (incl. return) % | | Type of vehicle | Distance km | Fuel/Energy consumption | Value (l/t) |
|------------------------|--|--|-------------------------------|-------------|-------------------------|-------------|
| Truck | 63% | | Lorry 16-32 metric ton, EURO5 | 50 | 0,0375 l/tkm | 1,875 |
| Railway | | | | | kWh/tkm | |
| Boat | | | | | l/tkm | |
| <Other Transportation> | | | | | <xx> | |

<Short description>

Benefits and loads beyond the system boundaries

(D)

| | Unit | Value |
|--|------|-------|
| | | |
| | | |
| | | |
| | | |

<Short description>

Additional technical information

<Description>

LCA: Results

Compared to previous version of SUPER, this product has been highly improved from environmental perspective. Indeed all impact indicators have significantly decreased thanks to the use of 100% recycled nylon (pile material) and 100% recycled polyester (primary backing). Table below shows the decreases for A1-A3 in % for LCA indicators compared to 2017:

| GWP | ODP | AP | EP | POCP | ADPE | ADPF |
|---------------------------|------------------|---------------------------|--|---|--------------|---------|
| kg CO ₂ equiv. | kg CFC 11 equiv. | kg SO ₂ equiv. | kg (PO ₄) ³⁻ equiv. | kg C ₂ H ₄ equiv. | kg Sb equiv. | MJ, NCV |
| -31% | -16% | -45% | -37% | -25% | -64% | -24% |

System boundaries (X=included, MND= module not declared, MNR=module not relevant)

| Product stage | | Assembly stage | | | Use stage | | | | | | | End of life stage | | | | Beyond the system boundaries |
|---------------|-----------|----------------|-----------|----------|-----------|-------------|--------|-------------|---------------|------------------------|-----------------------|----------------------------|-----------|------------------|----------|------------------------------------|
| Raw materials | Transport | Manufacturing | Transport | 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 | MND | MNR | MNR | MNR | X | X | X | X | MND |

Environmental impact

| Parameter | Unit | A1- A3 | A4 | A5 | C1 | C2 | C3 | C4 |
|-----------|---------------------------------------|----------|----------|----------|----------|----------|----------|----------|
| GWP | kg CO ₂ -eqv | 9,49E+00 | 5,75E-01 | 3,50E+00 | 0,00E+00 | 2,94E-02 | 7,48E+00 | 0,00E+00 |
| ODP | kg CFC11-eqv | 3,75E-07 | 1,02E-07 | 1,20E-07 | 0,00E+00 | 5,51E-09 | 6,80E-08 | 0,00E+00 |
| POCP | kg C ₂ H ₄ -eqv | 2,05E-03 | 1,24E-04 | 5,39E-04 | 0,00E+00 | 4,87E-06 | 9,85E-05 | 0,00E+00 |
| AP | kg SO ₂ -eqv | 2,44E-02 | 2,69E-03 | 6,74E-03 | 0,00E+00 | 9,49E-05 | 2,04E-03 | 0,00E+00 |
| EP | kg PO ₄ ³⁻ -eqv | 6,76E-03 | 3,50E-04 | 1,52E-03 | 0,00E+00 | 1,55E-05 | 4,87E-04 | 0,00E+00 |
| ADPM | kg Sb-eqv | 3,23E-05 | 8,06E-06 | 1,02E-05 | 0,00E+00 | 2,85E-07 | 2,76E-06 | 0,00E+00 |
| ADPE | MJ | 1,67E+02 | 8,53E+00 | 3,87E+01 | 0,00E+00 | 4,45E-01 | 4,45E-01 | 0,00E+00 |

GWP Global warming potential; ODP Depletion potential of the stratospheric ozone layer; POCP Formation potential of tropospheric photochemical oxidants; AP Acidification potential of land and water; EP Eutrophication potential; ADPM Abiotic depletion potential for non fossil resources; ADPE Abiotic depletion potential for fossil resources

| Resource use | | | | | | | | | |
|--------------|----------------|----------|----------|----------|----------|----------|----------|----------|--|
| Parameter | Unit | A1-A3 | A4 | A5 | C1 | C2 | C3 | C4 | |
| RPEE | MJ | 2,65E+01 | 1,38E-01 | 5,05E+00 | 0,00E+00 | 6,22E-03 | 3,01E-01 | 0,00E+00 | |
| RPEM | MJ | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | |
| TPE | MJ | 2,65E+01 | 1,38E-01 | 5,05E+00 | 0,00E+00 | 6,22E-03 | 3,01E-01 | 0,00E+00 | |
| NRPE | MJ | 1,82E+02 | 9,13E+00 | 4,17E+01 | 0,00E+00 | 4,82E-01 | 4,10E+00 | 0,00E+00 | |
| NRPM | MJ | 7,71E+01 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | |
| TRPE | MJ | 2,60E+02 | 9,13E+00 | 4,17E+01 | 0,00E+00 | 4,82E-01 | 4,10E+00 | 0,00E+00 | |
| SM | kg | 1,51E+00 | 0,00E+00 | 2,72E-01 | 0,00E+00 | 0,00E+00 | 1,16E-03 | 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 | |
| NRSF | MJ | 5,98E-02 | 0,00E+00 | 1,08E-02 | 0,00E+00 | 0,00E+00 | 2,35E-03 | 0,00E+00 | |
| W | m ³ | 3,60E-01 | 1,75E-03 | 9,03E-02 | 0,00E+00 | 8,73E-05 | 8,55E-02 | 0,00E+00 | |

RPEE Renewable primary energy resources used as energy carrier; RPEM Renewable primary energy resources used as raw materials; TPE Total use of renewable primary energy resources; NRPE Non renewable primary energy resources used as energy carrier; NRPM Non renewable primary energy resources used as materials; TRPE 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; W Use of net fresh water

End of life - Waste

| Parameter | Unit | A1- A3 | A4 | A5 | C1 | C2 | C3 | C4 | |
|-----------|------|----------|----------|----------|----------|----------|----------|----------|--|
| HW | kg | 1,94E-01 | 6,69E-03 | 1,29E-01 | 0,00E+00 | 2,56E-04 | 4,69E-01 | 0,00E+00 | |
| NHW | kg | 3,43E+00 | 4,94E-01 | 1,71E+00 | 0,00E+00 | 2,94E-02 | 4,02E+00 | 0,00E+00 | |
| RW | kg | 3,73E-04 | 5,88E-05 | 9,25E-05 | 0,00E+00 | 3,21E-06 | 1,87E-05 | 0,00E+00 | |

HW Hazardous waste disposed; NHW Non hazardous waste disposed; RW Radioactive waste disposed

End of life - Output flow

| Parameter | Unit | A1- A3 | A4 | A5 | C1 | C2 | C3 | C4 | |
|-----------|------|----------|----------|----------|----------|----------|----------|----------|--|
| CR | kg | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | |
| MR | kg | 1,63E-01 | 6,41E-03 | 3,74E-02 | 0,00E+00 | 2,93E-04 | 9,64E-03 | 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 | |
| EEE | MJ | 1,63E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | |
| ETE | MJ | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | |

CR Components for reuse; MR Materials for recycling; MER Materials for energy recovery; EEE Exported electric energy; ETE Exported thermal energy

Reading example: 9,0 E-03 = $9,0 \cdot 10^{-3}$ = 0,009

Additional Norwegian requirements

Greenhouse gas emission from the use of electricity in the manufacturing phase

National production mix from import, low voltage (production of transmission lines, in addition to direct emissions and losses in grid) of applied electricity for the manufacturing process(A3).

| Data source | Amount | Unit |
|--|--------|---------------------------|
| Electricity, low voltage Belgium (market) Econinvent v3.3 (2016), cut-off | 284,14 | gCO ₂ -eqv/kWh |

Dangerous substances

- The product contains no substances given by the REACH Candidate list or the Norwegian priority list
- The product contains substances given by the REACH Candidate list or the Norwegian priority list that are less than 0,1 % by weight.
- The product contain dangerous substances, more then 0,1% by weight, given by the REACH Candidate List or the Norwegian Priority list, see table.
- The product contains no substances given by the REACH Candidate list or the Norwegian priority list. The product is classified as hazardous waste (Avfallsforskriften, Annex III), see table.

| Name | CAS no. | Amount |
|------|---------|--------|
| | | |
| | | |

Indoor environment

The product meets the requirements for low emissions (M1) according to EN15251: 2007 Appendix E.

Carbon footprint

Carbon footprint has not been worked out for the product.





Bibliography

| | |
|-----------------------|--|
| ISO 14025:2010 | <i>Environmental labels and declarations - Type III environmental declarations - Principles and procedures</i> |
| ISO 14044:2006 | <i>Environmental management - Life cycle assessment - Requirements and guidelines</i> |
| EN 15804:2012+A1:2013 | <i>Sustainability of construction works - Environmental product declaration - Core rules for the product category of construction products</i> |
| ISO 21930:2007 | <i>Sustainability in building construction - Environmental declaration of building products</i> |

LCA background report of Zeno-Protect products: SUPER and EXCELLENCE

IBU PCR for Building-Related Products and Services, adapted for UL Environment from the range of Environmental Product Declarations of the Institute Construction and Environment e. V.

Ecoinvent database (v3.1)

| | | |
|---|---|--|
|  epd-norge.no The Norwegian EPD Foundation | Program operator The Norwegian EPD Foundation Post Box 5250 Majorstuen, 03030 Oslo Norway | Phone: +47 97722020 e-mail: post@epd-norge.no web: www.epd-norge.no |
|  epd-norge.no The Norwegian EPD Foundation | Publisher The Norwegian EPD Foundation Post Box 5250 Majorstuen, 0303 Oslo Norway | Phone: +47 97722020 e-mail: post@epd-norge.no web: www.epd-norge.no |
|  ZENO PROTECT ENTRANCE FLOORING | Owner of the declaration Zeno-Protect B.V. Oostenburgervoorstraat 132, 1018 MR Amsterdam, The Netherlands | Phone: +31651861996 Fax: e-mail: pieter@zeno-protect.com web: www.zeno-protect.com |
|  CO₂logic www.co2logic.com | Author of the Life Cycle Assessment CO2logic Rue d'Accolay 15-17 1000, Brussels | Phone: +32478413007 Fax: e-mail: info@co2logic.com web: www.co2logic.com |