

# ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH ISO 14025:2006 AND EN 15804:2012+A2:2019/AC:2021 FOR



## RENU<sup>®</sup> UNDERLAY



**EPD registration number: S-P-07911**

Publication date: 2023-03-06

Valid until 2028-03-02

*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)*

Programme: The International EPD<sup>®</sup> System  
[www.environdec.com](http://www.environdec.com)

Programme operator: EPD International AB



This Environmental Product Declaration has been verified by an independent third party  
The EPD owner has the sole ownership, liability, and responsibility for the EPD

# Introduction

This EPD provides environmental performance indicators for RENU® underlay manufactured by Interfloor Limited. This is a cradle-to-gate with options EPD in accordance with the requirements of EN 15804 covering modules A1 - A3, A4, A5, B2, C and D defined in that standard.

The EPD is based on a life cycle assessment (LCA) study which used production data for 2021/04/04 to 2022/04/02 from Interfloor's manufacturing facilities in Haslingden, Lancashire, UK. Background data were taken from the ecoinvent database (v3.6). The EPD presents details of the LCA, a description of the product life cycle it covers, values for the environmental indicators specified by EN 15804 and a brief explanation of those results.

The declared unit is 1 square metre (1m<sup>2</sup>) of RENU® underlay.

| RENU® underlay EPD                               |                                                                                                                               | Programme information |
|--------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|-----------------------|
| EPD programme                                    | The International EPD® System                                                                                                 |                       |
| EPD programme operator                           | EPD International AB -Box 21060 - SE-10031 Stockholm - Sweden<br>www.environdec.com; info@environdec.com                      |                       |
| EPD owner                                        | Interfloor Limited<br>Broadway - Haslingden - Rossendale - Lancashire BB4 4LS - UK<br>https://www.interfloor.com/             |                       |
| Declaration No                                   | S-P-07911                                                                                                                     |                       |
| Date of publication                              | 2023-03-06                                                                                                                    |                       |
| EPD valid until                                  | 2028-03-02                                                                                                                    |                       |
| EPD based on Product Category Rules              | The CEN standard EN 15804 serves as the core PCR                                                                              |                       |
|                                                  | PCR 2019:14 Construction products, v1.2,5 2022-11-01<br>(The International EPD® System)                                       |                       |
|                                                  | c-PCR-004 Resilient, textile and laminate floor coverings (EN 16810) (2019-12-20)<br>(The International EPD® System)          |                       |
| PCR review conducted by                          | The Technical Committee of the International EPD® System<br>Chair: Claudia Peña; contact via info@environdec.com              |                       |
| LCA conducted by                                 | EuGeos Limited, UK - www.eugeos.co.uk                                                                                         |                       |
| Third-party verification                         | Independent verification of this EPD and data, according to ISO 14025/2006:<br>■ EPD verification by individual verifier      |                       |
| Third party verifier                             | Ugo Pretato, Studio Fieschi & Soci S.r.l., Italy<br>Recognized Individual Verifier, approved by The International EPD® System |                       |
| Procedure for data follow-up during EPD validity | involves third party Verifier: yes <input type="checkbox"/> no <input checked="" type="checkbox"/>                            |                       |

EPDs within the same product category but registered in different EPD programmes, or not compliant with EN 15804, may not be comparable. For two EPDs to be comparable, they must be based on the same PCR (including the same version number) or be based on fully-aligned PCRs or versions of PCRs; cover products with identical functions, technical performances and use (e.g. identical declared/functional units); have equivalent system boundaries and descriptions of data; apply equivalent data quality requirements, methods of data collection, and allocation methods; apply identical cut-off rules and impact assessment methods (including the same version of characterisation factors); have equivalent content declarations; and be valid at the time of comparison. For further information about comparability, see EN 15804 and ISO 14025.

## Company profile

Interfloor, part of the Victoria plc group of companies, was created by the merger of Tredaire and Duralay in 2002 but our heritage dates back to the 1940s when Duralay began manufacturing the first carpet underlays in the UK.

We are Europe's largest manufacturer of carpet underlay and flooring accessories and we supply our products to flooring retailers, distributors and flooring contractors in the UK and around the world.

We manufacture a diverse range of products including the three most popular forms of underlay – polyurethane foam, sponge rubber and crumb rubber. We also produce carpet gripper, floor edgings, flooring adhesives, tapes and tools.

The facilities that manufacture the products covered by this EPD operate a management system that is registered as meeting the requirements of ISO 14001:2015.



Our products hold the Carpet and Rug Institute (CRI) Green Label Plus accreditation, meaning our products conform to the CRI's high standards for indoor air quality and low VOC emissions.

In 2008 we invested £3.5m in regenerative thermal oxidisers (RTOs) to eliminate odour, oil particles and VOCs. Although our emissions were already below the legal requirements we have further reduced emissions by over 90% as a result of this

In 2012 we launched our Ethical Trading Policy. We are committed to implementing the principles of the Ethical Trading Initiative (ETI) Base Code.

## CONTACT

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## Product information

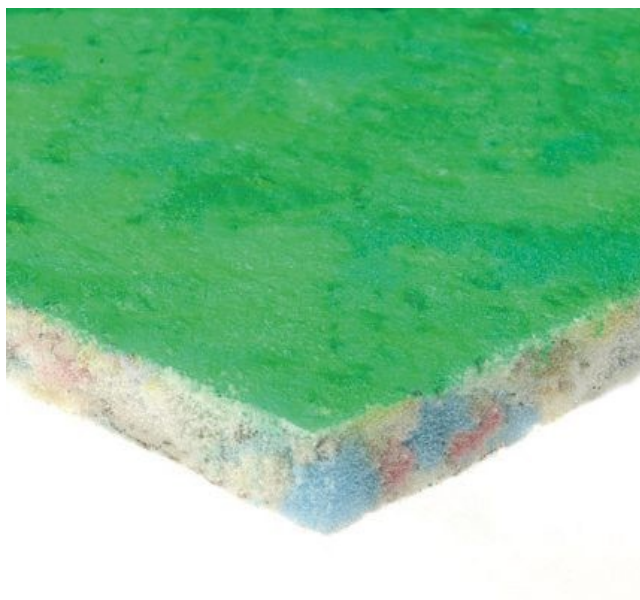
This EPD applies to Interfloor's RENU® underlay.

RENU® is a 9mm-thick underlay containing over 90% recycled materials overall whilst also being 100% recyclable. The filling comes from 100% post-consumer recycled polyurethane (PU) foam, the facing film is made from sustainably-sourced sugar cane and the backing is made from 100% recycled and unbleached paper printed using vegetable-based inks.



RENU underlay is suitable for stretch-fit installation of carpets

Interfloor's underlay products are classified CPC 3691 under the UN CPC classification system v2.1.



Tredaire renu® TARENU

## MANUFACTURING & USE

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### MANUFACTURING

Manufacturing of underlay products takes place at Interfloor's manufacturing facilities in Haslingden, Lancashire, UK, and involves the following steps:

- mixing and curing of facing material
- application of this facing compound to the backing material
- trimming and packing

Trim is reused in the process to reduce waste.

### PACKAGING & TRANSPORTATION

Underlay products are supplied to customers as rolls protected by polythene bags; for some products, the rolls are formed on cardboard cores. Products are transported to end users by road or road and sea.

### INSTALLATION

Underlay products are laid manually onto the floor. Underlay may be fixed in place using adhesive tape, carpet gripper strips or adhesive. The most common installation method used for the underlay products covered by this EPD is described in more detail in the "Assumptions and Estimates" section and included in the LCA. No special tools are required for installation.

The cardboard core and/or polythene film which comprise the product packaging should be recycled wherever facilities exist.

### PRODUCT USE AND MAINTENANCE

Underlay products are passive in use and require no maintenance or repair during the 50-year lifetime of building assumed in EN 15804 and EN 15978.

### END-OF-LIFE

Although RENU® underlay is fully recyclable and recycling is recommended, for the purpose of this EPD it has been assumed that, following current prevailing practice, the product will be removed from the building at the end of its life and incinerated as waste with energy content being recovered.

When removed from buildings as waste, Interfloor's underlay products fall under European Waste Catalogue (EWC) code 17 09 04.

### REFERENCE SERVICE LIFE

No reference service life is specified in this EPD.

### RESIDUAL RISKS AND EMERGENCIES

There are no residual risks associated with the normal day-to-day use of Interfloor's underlay products. Care must be taken to both select the materials and install them in accordance with Interfloor's guidance.

### FURTHER PRODUCT INFORMATION

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Interfloor's underlay products comply with BS 5808:1991 and BS EN14499: 2015; consult the relevant product Technical Data Sheet for a comprehensive specification. Detailed product information and datasheets can be found

- on our website: <https://www.interfloor.com/>
- or by contacting: +441706 238825
- or by email [international@interfloor.com](mailto:international@interfloor.com)

## LCA information

This section of the EPD records key features of the LCA on which it is based.

The LCA was carried out by EuGeos using openLCA software and production data for 2021/04/04 to 2022/04/02 from Interfloor's manufacturing facilities in Haslingden, UK; background data were taken from the ecoinvent database (v3.6).

### DECLARED MODULES AND GEOGRAPHICAL SCOPE

This EPD covers the production stage (modules A1-A3), on-site installation (modules A4 & A5) and end-of-life management (modules C & module D); module B2 is included within the scope, as required by c-PCR-004. However, underlay is not accessible for maintenance during its lifetime, therefore it is assumed that no maintenance activities can be carried out and all indicator values for module B2 are reported as zero. As permitted by EN 15804, modules A1-A3 are declared in aggregated form.

| Product stage                                                                            |           |               | Construction process stage |          | Use stage |             |        |             |               |                        |                       | End of life stage          |           |                 |          | Benefits & loads beyond the system boundaries |
|------------------------------------------------------------------------------------------|-----------|---------------|----------------------------|----------|-----------|-------------|--------|-------------|---------------|------------------------|-----------------------|----------------------------|-----------|-----------------|----------|-----------------------------------------------|
| Raw material supply                                                                      | Transport | Manufacturing | Transport to the site      | Assembly | Use       | Maintenance | Repair | Replacement | Refurbishment | Operational energy use | Operational water use | De-construction demolition | Transport | Waste treatment | Disposal | Reuse- recovery- recycling- potential         |
| Modules declared<br>X: included in LCA; ND: module not declared; NR: module not relevant |           |               |                            |          |           |             |        |             |               |                        |                       |                            |           |                 |          |                                               |
| A 1                                                                                      | A 2       | A 3           | A 4                        | A 5      | B1        | B2          | B3     | B4          | B5            | B6                     | B7                    | C 1                        | C 2       | C 3             | C 4      | D                                             |
| X                                                                                        | X         | X             | X                          | X        | ND        | X           | ND     | ND          | ND            | ND                     | N D                   | X                          | X         | X               | X        | X                                             |
| Geography                                                                                |           |               |                            |          |           |             |        |             |               |                        |                       |                            |           |                 |          |                                               |
| GLO                                                                                      | GB        | GB            | GLO                        | -        | -         | GLO         | -      | -           | -             | -                      | -                     | GLO                        |           |                 |          | GLO                                           |
| Specific data used                                                                       |           |               |                            |          |           |             |        |             |               |                        |                       |                            |           |                 |          |                                               |
| >90%                                                                                     |           |               |                            |          | -         | -           | -      | -           | -             | -                      | -                     | -                          | -         | -               | -        | -                                             |
| Variation in products                                                                    |           |               |                            |          |           |             |        |             |               |                        |                       |                            |           |                 |          |                                               |
| <10%                                                                                     |           |               |                            |          | -         | -           | -      | -           | -             | -                      | -                     | -                          | -         | -               | -        | -                                             |
| Variation in sites                                                                       |           |               |                            |          |           |             |        |             |               |                        |                       |                            |           |                 |          |                                               |
| n/a                                                                                      |           |               |                            |          | -         | -           | -      | -           | -             | -                      | -                     | -                          | -         | -               | -        | -                                             |

### DECLARED UNIT

The declared unit is 1 square metre (1m<sup>2</sup>) of underlay.

Results are declared for an average product of this underlay type manufactured by Interfloor.

## CONTENTS DECLARATION

The material composition of Interfloor's Renu® underlay, including the product packaging, is shown below. This contents declaration is provided for guidance only and does not form part of the product specification.

| Product components | Weight kg        | Post-consumer material weight % | Biogenic material weight kg C / kg | Biogenic material weight % |
|--------------------|------------------|---------------------------------|------------------------------------|----------------------------|
| Polyurethane foam  | > 1.4            | 85 - 90                         | 0                                  | 0                          |
| Polyethylene       | < 0.03           | 0                               | 0.85                               | 100                        |
| Paper              | 0.05             | >80                             | 0.44                               | >80                        |
| <b>TOTAL</b>       | <b>1.4 – 1.6</b> |                                 |                                    |                            |

Renu® underlays use a bio-polythene film produced from sugar cane, stated to be carbon-negative on the basis of an LCA study supported by soil analysis undertaken in sugar-cane plantations established on degraded pasture lands (Carbon Trust 2017).

| Packaging materials | Weight kg   | Weight % (vs product) | Biogenic carbon weight kg C / kg |
|---------------------|-------------|-----------------------|----------------------------------|
| PE                  | 0.01        | 0.6                   | 0.85                             |
| <b>TOTAL</b>        | <b>0.01</b> | <b>0.6</b>            |                                  |

No substance included in the Candidate List of Substances of Very High Concern for authorisation under the REACH Regulations is present in the protection materials, either above the threshold for registration with the European Chemicals Agency or above 0.1% (wt/wt).

## SYSTEM BOUNDARIES

The system boundary of the EPD is defined using the modular approach set out in EN 15804.

As well as the core processes which cover manufacture of the underlay at Interfloor's Haslingden site, the system includes production of all raw materials and components from basic resources; transport of those materials; product transport to the port of loading for exported products or the first delivery point in the UK; subsequent installation and end-of-life management; the production of fuels and energy carriers and their delivery to manufacturing sites; the treatment of all wastes. The first delivery point for products destined for UK use may be the place of installation or a retail or wholesale intermediary.

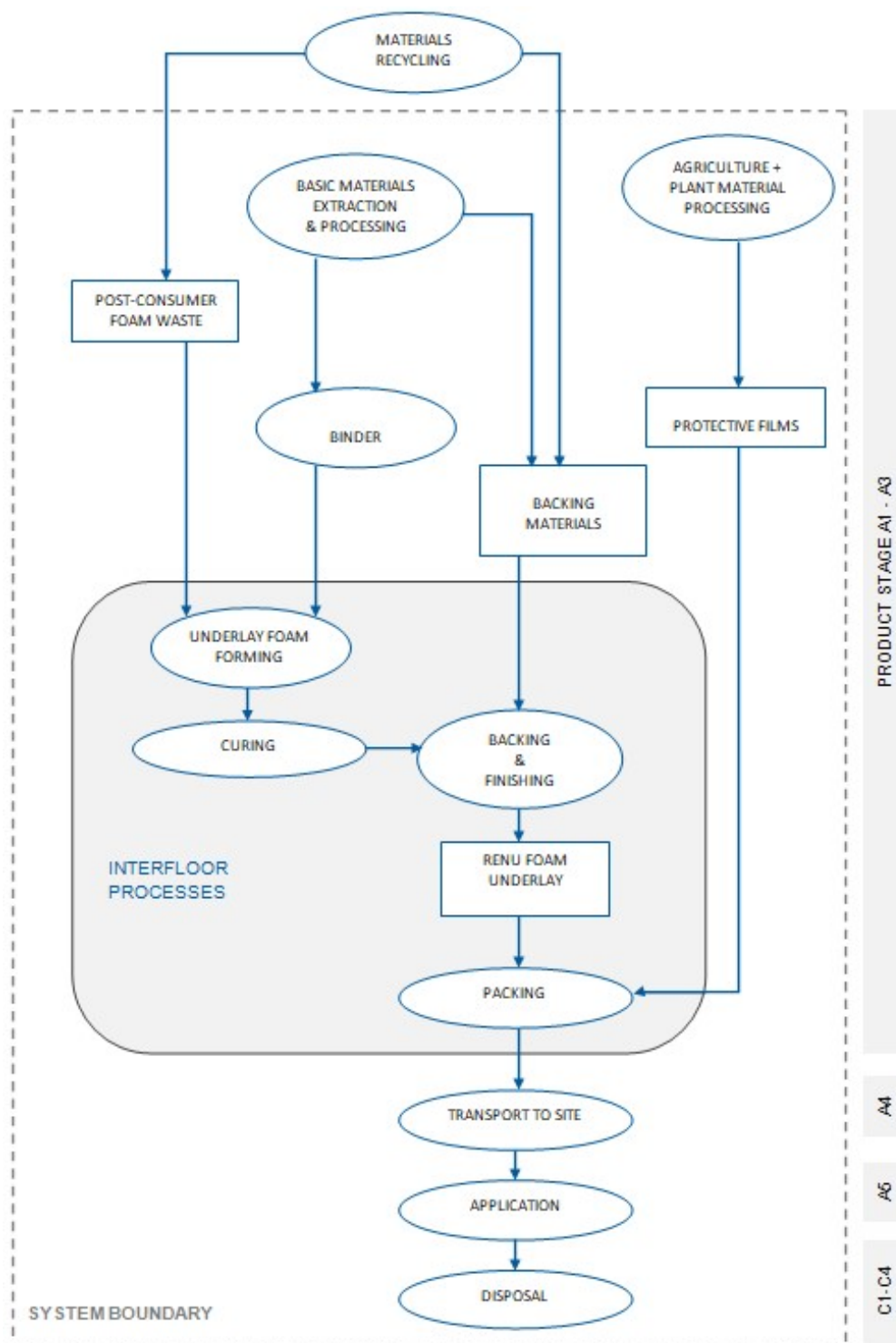
The upstream processing of recycled material inputs that have passed the end-of-waste state is outside the system boundary.

The product life cycle covered by this EPD is illustrated on the following page.

## CUT-OFF CRITERIA

The collected data covered all raw materials, consumables and packaging materials; associated transport to the manufacturing site; process energy and water use; direct production wastes; emissions to air and water.

According to EN 15804 and the PCR, flows can be omitted (cut off) from a core process in the LCA up to a maximum of 1% of the total mass of material inputs or 1% of the total energy content of fuels and energy carriers; some ancillary materials used in small quantities within the process and amounting, in combination, to <0.1% of total input materials were omitted from the LCA underpinning this EPD.



RENU® life cycle

## DATA SOURCES AND DATA QUALITY

Data characterising Interfloor's core processes (see above figure) were collected for a contiguous 12-month period between 2021/04/04 and 2022/04/02. The data have therefore been updated within the last 5 years. These data were checked to ensure that sufficient materials and water are included within the inputs to account for all products, wastes and emissions.

### BACKGROUND DATA

Background (generic) data were taken from the ecoinvent database (v3.6); this fulfils the EN 15804 requirement that generic data used in the LCA have been updated within the last 10 years. The quality of generic data has been reviewed to ensure representativeness.

### ALLOCATION

In the background data, the ecoinvent default allocation is applied to all processes except those in which secondary materials are used, where the "cut-off" allocation is applied. This ensures that secondary materials are free of upstream burdens that arise prior to their reaching the "end of waste" state, in accordance with Section 6.3.4.2 of EN 15804. Mass was the basis for the allocation of primary data between products made at the same facility, where this was unavoidable.

### ASSUMPTIONS AND ESTIMATES

Inputs to and outputs from the system are accounted for over a 100-year time period; long-term emissions are therefore omitted from the impact assessment part of the LCA.

The "primary energy used as material" indicators (PERM; PENRM) are calculated using - as characterisation factors - published values for constituent materials which can yield energy on combustion, where available, and from published calorific values where PE(N)RM values are not available.

Calculations of PE(N)RM in this study are based on a NCV of

- 31MJ/kg for polyurethane and other polymers
- 48MJ/kg for polyethylene
- 16MJ/kg for paper and cardboard
- 14MJ/kg for wood

"Primary energy as fuel" indicators (PENRE, PERE) are calculated as the total primary energy demand minus primary energy used as material.

Delivery of the product to users' sites, transport to waste processing and final disposal are modelled using scenarios. The relevant parameters for the transport scenarios are shown in the table below.

| Scenario                              | A4<br>( transport to site)                                           | C2<br>(transport to waste treatment)                                        |
|---------------------------------------|----------------------------------------------------------------------|-----------------------------------------------------------------------------|
| Parameters                            | Quantity & unit                                                      |                                                                             |
| Vehicle type                          | lorry                                                                |                                                                             |
| Vehicle load capacity and utilisation | 16t - average load over outward & return journeys implied in dataset | 33% (3.6t t average load over outward & return journeys implied in dataset) |
| Fuel type and consumption             | diesel; 0.2 l/km                                                     | diesel; 0.1 l/km                                                            |
| Distance to site                      | n/a: company fuel data used                                          | 50 km road                                                                  |
| Bulk density of transported products  | 170 kg/m <sup>3</sup>                                                |                                                                             |
| Volume capacity utilisation factor    | n/a                                                                  | 1                                                                           |

The installation scenario – Module A5 - is modelled as a manual operation without use of power tools. A loss of 1% of product is included to allow for damage and any trimming. Scenario parameters are shown in the table below. Transport of ancillary materials to site is included within module A5.

| Scenario Parameters – A5 installation |                                                           |
|---------------------------------------|-----------------------------------------------------------|
| Parameter                             | Quantity & unit                                           |
| Ancillary materials for installation  | plywood-based carpet gripper, 1.17m                       |
| Water, energy & other resource use    | 0                                                         |
| Direct emissions to air               | 0                                                         |
| Waste arising and treatment           | 1% of declared unit mass + all packaging, to incineration |

Final disposal (module C4) is modelled as 100% incineration with energy recovery. For the products covered by this EPD, the relevant amounts of exported energy are:

- heat recovered (MJ): 8.1
- electrical energy recovered (MJ): 9.8

Any potential benefits and loads beyond the system boundary reported in Module D are those associated with this recovered energy, therefore the values above are the parameters for Module D. The potential benefits and loads are calculated on the basis of assumptions that heat generated substitutes for gas-fired heat generation, while electricity generated substitutes for global average medium voltage electricity.

Module D calculations exclude any third-party recycling of packaging or process wastes arising in Modules A1 - A5.

## INTERPRETATION OF THE LCA

Indicator values obtained for resource depletion (ADPMM, ADPFF), stratospheric ozone depletion (ODP) and water deprivation (WDP) potential should be used with caution; all are subject to uncertainties in data or method which limit the scope for their use as the basis for comparisons.

ADPMM values are associated with resource consumption reported in background data only.

Product manufacture uses a large proportion of by-products from other industries as raw materials; most primary energy used in those industries is allocated to their primary products, and does not feed into the PENRT and PERT indicators reported here for the A1-A3 modules. Because PENRM and PERM are derived from the calorific value of the underlay, PENRE and PERE are reported as negative to comply with the requirement that  $PE(N)RM + PE(N)RE = PE(N)RT$ .

No untreated wastes leave the modelled system, which includes waste treatment activities as required by EN 15804. The waste indicators HWD, NHWD and TRWD presented in this EPD therefore represent waste flows *within* the modelled system.

The manufacture of the product and the product's end-of-life represent the more significant parts of the life cycle. The significance of end-of-life derives from the assumption that product is incinerated, at which point fossil hydrocarbons in the product itself are released as CO<sub>2</sub> and other combustion gases are formed.

Energy recovered in this waste management process is reported as Exported Energy (EE) in Module C4. The use of this energy (as heat and power) may avoid other environmental burdens associated with heat and power production from primary fuels in subsequent product systems; such potential benefits are reported in Module D.

# Environmental indicators

This EPD contains environmental information about Interfloor's RENU® underlay in the form of quantitative indicator values for a number of parameters, which encompass calculated environmental impact potentials, resource and energy use, waste generation and material and energy outputs from the product system that may be reused, recycled or recovered into other, unspecified product life cycles. The parameters are listed below along with the abbreviations used for them in the tables of indicator values that follow.

| Parameter                                                                   | Abbreviation   | Unit                             |
|-----------------------------------------------------------------------------|----------------|----------------------------------|
| <b>Potential environmental impact indicators (EN 15804+A2)</b>              |                |                                  |
| Climate change – GWP fossil                                                 | GWP-fossil     | kg CO <sub>2</sub> eq            |
| Climate change – GWP biogenic                                               | GWP-biogenic   | kg CO <sub>2</sub> eq            |
| Climate change – GWP land transformation                                    | GWP-luluc      | kg CO <sub>2</sub> eq            |
| Climate change – GWP total                                                  | GWP-total      | kg CO <sub>2</sub> eq            |
| Climate change - GWP biogenic-excluded <sup>1</sup>                         | GWP-GHG        | kg CO <sub>2</sub> eq            |
| Acidification potential                                                     | AP             | mol H <sup>+</sup> eq            |
| Eutrophication – freshwater                                                 | EP-freshwater  | kg P eq                          |
| Eutrophication – marine                                                     | EP-marine      | kg N eq                          |
| Eutrophication – terrestrial                                                | EP-terrestrial | mol N eq                         |
| Photochemical ozone formation potential                                     | POFP           | kg NMVOC eq                      |
| Ozone depletion potential                                                   | ODP            | kg CFC-11 eq                     |
| Depletion of abiotic resources – minerals & metals <sup>2</sup>             | ADPMM          | kg Sb eq                         |
| Depletion of abiotic resources – fossil fuels <sup>2</sup>                  | ADPFF          | MJ, ncv                          |
| Water (user) deprivation potential <sup>2</sup>                             | WDP            | m <sup>3</sup> world-eq deprived |
| <b>Resource use indicators</b>                                              |                |                                  |
| Renewable primary energy as energy carrier                                  | PERE           | MJ                               |
| Renewable primary energy resources as material utilisation                  | PERM           | MJ                               |
| Total renewable primary energy use<br>(sum of the two parameters above)     | PERT           | MJ                               |
| Non-renewable primary energy as energy carrier                              | PENRE          | MJ                               |
| Non-renewable primary energy resources as material utilisation              | PENRM          | MJ                               |
| Total non-renewable primary energy use<br>(sum of the two parameters above) | PENRT          | MJ                               |
| Use of secondary material                                                   | SM             | kg                               |
| Use of renewable secondary fuels                                            | RSF            | MJ                               |
| Use of non-renewable secondary fuels                                        | NRSF           | MJ                               |
| Net use of fresh water                                                      | FW             | m <sup>3</sup>                   |
| <b>Waste indicators</b>                                                     |                |                                  |
| Hazardous waste disposed                                                    | HWD            | kg                               |
| Non-hazardous waste disposed                                                | NHWD           | kg                               |
| Radioactive waste disposed                                                  | TRWD           | kg                               |
| <b>Output flow indicators</b>                                               |                |                                  |
| Components for re-use                                                       | CFR            | kg                               |
| Materials for recycling                                                     | MFR            | kg                               |
| Materials for energy recovery                                               | MER            | kg                               |
| Exported energy - electricity                                               | EEE            | MJ                               |
| Exported energy - thermal                                                   | EET            | MJ                               |

<sup>1</sup> - GWP-GHG includes all greenhouse gases included in GWP-total but excludes biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product.

<sup>2</sup> - The results of this environmental impact indicator shall be used with care because either the uncertainties associated with the results are high or there is limited experience with the indicator

## RENU® UNDERLAY

Environmental indicator results for all declared modules are shown in the following tables for the declared unit of 1m<sup>2</sup> of RENU® underlay; the A1 - A3 modules are shown on an aggregated basis.

| ENVIRONMENTAL IMPACTS<br>(EN 15804+A2) (CORE)      | Unit                           | A1 - A3   | A4       | A5        | B2       | C1       | C2        | C3       | C4       | D         |
|----------------------------------------------------|--------------------------------|-----------|----------|-----------|----------|----------|-----------|----------|----------|-----------|
| GWP-fossil                                         | kg CO <sub>2</sub> eq          | 1.33E+00  | 1.74E-01 | 1.87E-01  | 0.00E+00 | 0.00E+00 | 8.70E-04  | 0.00E+00 | 4.35E+00 | -2.31E+00 |
| GWP-biogenic                                       | kg CO <sub>2</sub> eq          | -7.02E-02 | 1.32E-05 | -3.51E-01 | 0.00E+00 | 0.00E+00 | -1.98E-07 | 0.00E+00 | 4.21E-01 | -3.30E-04 |
| GWP-luluc                                          | kg CO <sub>2</sub> eq          | 4.04E-04  | 5.45E-05 | 6.10E-04  | 0.00E+00 | 0.00E+00 | 5.06E-07  | 0.00E+00 | 3.69E-05 | -3.92E-03 |
| GWP-total                                          | kg CO <sub>2</sub> eq          | 1.26E+00  | 1.74E-01 | -1.63E-01 | 0.00E+00 | 0.00E+00 | 8.70E-04  | 0.00E+00 | 4.77E+00 | -2.32E+00 |
| AP                                                 | mol H <sup>+</sup> eq          | 5.13E-03  | 6.50E-04 | 7.20E-04  | 0.00E+00 | 0.00E+00 | 2.45E-06  | 0.00E+00 | 3.73E-03 | -1.00E-02 |
| EP-freshwater                                      | kg P <sup>-</sup> eq           | 1.82E-04  | 1.65E-06 | 8.74E-06  | 0.00E+00 | 0.00E+00 | 1.13E-08  | 0.00E+00 | 1.61E-06 | -1.10E-04 |
| EP-marine                                          | kg N eq                        | 1.12E-03  | 1.80E-04 | 1.80E-04  | 0.00E+00 | 0.00E+00 | 3.95E-07  | 0.00E+00 | 2.08E-03 | -1.70E-03 |
| EP-terrestrial                                     | mol N eq                       | 8.01E-03  | 1.97E-03 | 2.20E-03  | 0.00E+00 | 0.00E+00 | 4.41E-06  | 0.00E+00 | 1.99E-02 | -1.90E-02 |
| POFP                                               | kg NMVOC eq                    | 3.15E-03  | 6.50E-04 | 6.30E-04  | 0.00E+00 | 0.00E+00 | 1.72E-06  | 0.00E+00 | 4.70E-03 | -5.19E-03 |
| ODP                                                | kg CFC-11 eq                   | 1.64E-06  | 3.95E-08 | 1.27E-08  | 0.00E+00 | 0.00E+00 | 1.75E-10  | 0.00E+00 | 2.29E-08 | -1.23E-07 |
| ADPMM                                              | kg Sb eq                       | 1.17E-05  | 2.93E-06 | 2.16E-06  | 0.00E+00 | 0.00E+00 | 4.07E-08  | 0.00E+00 | 2.10E-06 | -3.56E-06 |
| ADPFF                                              | MJ, ncv                        | 2.22E+01  | 2.71E+00 | 2.02E+00  | 0.00E+00 | 0.00E+00 | 1.29E-02  | 0.00E+00 | 2.60E+00 | -3.94E+01 |
| WDP                                                | m <sup>3</sup> world-eq deprvd | 1.49E+01  | 9.44E-01 | 1.52E+00  | 0.00E+00 | 0.00E+00 | 4.71E-03  | 0.00E+00 | 1.04E+00 | -8.98E+01 |
| ENVIRONMENTAL IMPACT<br>(EN 15804+A2) (ADDITIONAL) | Unit                           | A1 - A3   | A4       | A5        | B2       | C1       | C2        | C3       | C4       | D         |
| GWP-GHG                                            | kg CO <sub>2</sub> eq          | 1.30E+00  | 1.74E-01 | 1.88E-01  | 0.00E+00 | 0.00E+00 | 8.70E-04  | 0.00E+00 | 4.30E+00 | -2.32E+00 |

| RESOURCE USE | Unit           | A1 - A3   | A4       | A5       | B2       | C1       | C2       | C3       | C4       | D         |
|--------------|----------------|-----------|----------|----------|----------|----------|----------|----------|----------|-----------|
| PERE         | MJ             | -7.88E-01 | 2.88E-02 | 3.64E+00 | 0.00E+00 | 0.00E+00 | 2.00E-04 | 0.00E+00 | 4.11E-02 | -2.83E+00 |
| PERM         | MJ             | 1.39E+00  | 0.00E+00 | 1.61E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00  |
| PERT         | MJ             | 6.01E-01  | 2.88E-02 | 5.25E+00 | 0.00E+00 | 0.00E+00 | 2.00E-04 | 0.00E+00 | 4.11E-02 | -2.83E+00 |
| PENRE        | MJ             | -2.57E+01 | 2.71E+00 | 2.02E+00 | 0.00E+00 | 0.00E+00 | 1.29E-02 | 0.00E+00 | 2.60E+00 | -3.94E+01 |
| PENRM        | MJ             | 4.79E+01  | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00  |
| PENRT        | MJ             | 2.22E+01  | 2.71E+00 | 2.02E+00 | 0.00E+00 | 0.00E+00 | 1.29E-02 | 0.00E+00 | 2.60E+00 | -3.94E+01 |
| SM           | kg             | 6.91E-01  | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | -6.59E-03 |
| RSF          | MJ             | 1.15E-02  | 6.70E-04 | 1.51E-03 | 0.00E+00 | 0.00E+00 | 3.37E-06 | 0.00E+00 | 6.80E-04 | -7.31E-02 |
| 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  |
| FW           | m <sup>3</sup> | 1.41E-02  | 2.00E-04 | 1.37E-03 | 0.00E+00 | 0.00E+00 | 5.95E-07 | 0.00E+00 | 8.05E-03 | 1.02E-02  |
| WASTES       | Unit           | A1 - A3   | A4       | A5       | B2       | C1       | C2       | C3       | C4       | D         |
| HWD          | kg             | 3.41E-02  | 3.23E-03 | 1.43E-02 | 0.00E+00 | 0.00E+00 | 2.25E-05 | 0.00E+00 | 6.86E-02 | -1.65E-01 |
| NHWD         | kg             | 9.10E-01  | 2.92E-01 | 2.28E-01 | 0.00E+00 | 0.00E+00 | 8.20E-04 | 0.00E+00 | 1.82E+00 | -4.73E+00 |
| TRWD         | kg             | 6.87E-05  | 1.78E-05 | 6.47E-06 | 0.00E+00 | 0.00E+00 | 7.89E-08 | 0.00E+00 | 3.64E-06 | -8.19E-05 |
| OUTPUT FLOWS | Unit           | A1 - A3   | A4       | A5       | B2       | C1       | C2       | C3       | C4       | D         |
| CFR          | 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  |
| MFR          | kg             | 6.17E-02  | 7.80E-04 | 6.44E-03 | 0.00E+00 | 0.00E+00 | 6.13E-06 | 0.00E+00 | 9.20E-04 | -2.46E-03 |
| MER          | kg             | 1.72E-04  | 8.06E-06 | 2.03E-05 | 0.00E+00 | 0.00E+00 | 4.68E-08 | 0.00E+00 | 7.56E-06 | -7.40E-04 |
| EEE          | MJ             | 0.00E+00  | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 9.80E+00 | 0.00E+00  |
| EET          | MJ             | 0.00E+00  | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 8.10E+00 | 0.00E+00  |

Indicator values calculated using the methods prescribed in the earlier version of EN 15804 (EN 15804+A1:2013) are provided, for information, in the table below for the declared unit of 1m<sup>2</sup> of RENU® underlay; modules A1 - A3 are shown on an aggregated basis.

| ENVIRONMENTAL IMPACTS<br>(EN 15804+A1)                           |      | Unit                                | A1 - A3  | A4       | A5       | B2       | C1       | C2       | C3       | C4       | D         |
|------------------------------------------------------------------|------|-------------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|-----------|
| Global warming potential                                         | GWP  | kg CO <sub>2</sub> -eq              | 1.24E+00 | 1.73E-01 | 1.84E-01 | 0.00E+00 | 0.00E+00 | 8.60E-04 | 0.00E+00 | 4.34E+00 | -2.24E+00 |
| Depletion potential of the stratospheric ozone layer             | ODP  | kg CFC11-eq                         | 1.63E-06 | 3.14E-08 | 1.08E-08 | 0.00E+00 | 0.00E+00 | 1.39E-10 | 0.00E+00 | 2.08E-08 | -1.11E-07 |
| Acidification potential of land and water                        | AP   | kg SO <sub>2</sub> -eq              | 4.40E-03 | 5.20E-04 | 5.70E-04 | 0.00E+00 | 0.00E+00 | 2.12E-06 | 0.00E+00 | 2.60E-03 | -8.71E-03 |
| Eutrophication potential                                         | EP   | kg PO <sub>4</sub> <sup>3-</sup> eq | 1.03E-03 | 7.72E-05 | 1.00E-04 | 0.00E+00 | 0.00E+00 | 2.23E-07 | 0.00E+00 | 7.70E-04 | -9.30E-04 |
| Formation potential of tropospheric ozone photochemical oxidants | POCP | kg ethene-eq                        | 2.12E-04 | 2.24E-05 | 5.04E-05 | 0.00E+00 | 0.00E+00 | 1.15E-07 | 0.00E+00 | 2.75E-05 | -3.50E-04 |
| Abiotic depletion potential for non-fossil resources             | ADPE | kg Sb-eq                            | 1.17E-05 | 2.93E-06 | 2.16E-06 | 0.00E+00 | 0.00E+00 | 4.07E-08 | 0.00E+00 | 2.10E-06 | -3.56E-06 |
| Abiotic depletion potential for fossil resources                 | ADPF | MJ                                  | 1.97E+01 | 2.68E+00 | 1.85E+00 | 0.00E+00 | 0.00E+00 | 1.27E-02 | 0.00E+00 | 2.56E+00 | -3.49E+01 |

## References

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**ecoinvent database (v3.6)** - [www.ecoinvent.ch](http://www.ecoinvent.ch)

**EN 15804:2012 + A2:2019** - Sustainability of construction works - Environmental Product Declarations - Core rules for the product category of construction products

**General Program Instructions, V4.0 2021-03-29** - The International EPD® System - EPD International AB

**ISO 14001:2015** - Environmental management systems – Requirements with guidance for use

**ISO 14025:2009-11** - Environmental labels and declarations - Type III environmental declarations - Principles and procedures

**PCR 2019:14 Construction products V1.2.5, 2022-11-01** - The International EPD® System - EPD International AB

**PCR 2019:14 c-PCR-004** Resilient, textile and laminate floor coverings (EN 16810) (2019-12-20)

**Underlay LCA (2023)** - Report for Interfloor Limited - EuGeos Limited

## Glossary

The International EPD® System: a programme for Type III environmental declarations, maintaining a system to verify and register EPDs as well as keeping a library of EPDs and PCRs in accordance with ISO 14025. ([www.environdec.com](http://www.environdec.com))

Life cycle assessment (LCA): LCA studies the environmental aspects and quantifies the potential impacts (positive or negative) of a product (or service) throughout its entire life. ISO standards ISO 14040 and ISO 14044 set out conventions for conducting LCA.

REACH Regulation: REACH is the European Regulation on Registration, Evaluation, Authorisation and Restriction of Chemicals. It entered into force in 2007, replacing the former legislative framework for chemicals in the EU.