

1234567-123

(contact program operator)

ISSUED dd.mm.yyyy

VALID UNTIL dd.mm.yyyy

THIRD PARTY VERIFIED

in accordance with EN 15804+A2

and NBN/DTD B08-001

[ insert additional PCR if applicable ]

MODULES DECLARED

[ Type here a combination of reference flow

and declared unit or functional unit to make it clear

what the impact table is about ]

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| A123 | A4 | A5 | B2 B4 | C | D |
| • | • |  | • | • | • |

COMPANY

PRODUCT NAME



The intended use of this EPD is to communicate scientifically based environmental information for construction products, for the purpose of assessing the environmental performance of buildings. This EPD is only valid when registered on www.b-epd.be. The FPS Public Health cannot be held responsible for the information provided by the owner of the EPD.

EDITORIAL: The total number of pages must be even so that the last page is the back cover when printed. If the number of pages is odd, you can create a page break here}. Editorial changes to the text are allowed if agreed upon by the program operator.

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# PRODUCT DESCRIPTION



## Product name

[ insert product name and type   
and very short identification ]

## Product description and intended use gebruik

[ Insert product description, bearing in mind users who don’t know the product. ]

[ Clarify whether this is a substance / mixture / intermediate product / product / kit / incorportated product / element / service / equipment ]

[ Insert whether this is a specific EPD from a single company or from a collective/federation. ]

[ Insert intended use(s). ]

## Reference flow / declared unit

insert information on reference flow, declared unit, functional unit. 

Packaging is select included / not included / the product does never contain packaging.

The weight per reference flow is [ insert ] kg.

The density of the product is [ insert ] kg / m3.

## Installation

This part clarifies in short the scope of the EPD regarding installation. Be clear whether the scope of the product is “as produced” or “as installed”.

For as installed:

Materials for fixation and installation are included. This EPD includes the impacts of all processes, fixating materials, jointing material or treatments necessary for installing/mounting the product according to following scenario(s): list them shortly.

Detailed information on this scenario can be found in the chapter “Data of the underlying scenario’s”.

Multiple scenarios for installing are possible (e.g. screwless, with screws, glued, ...).

If other installation scenario’s are possible this text shall be included: Other options for installing the product are possible for which the environmental impact has not been included in this EPD: list them.

You can find more detailed information helping developping a correct scenario at building level in the chapter “Additional technical information for scenario development at building”. For these other options additional materials are necessary for which the environmental impact is not included in this EPD but which should be taken into account at building level: list them.

For as produced:

Materials for fixation and installation are not included. Regarding installation this EPD only includes the environmental impact related to the product itself: list them e.g. material losses, packaging EOL and all relevant impacts e.g. for blow in the energy necessary shall be declared). For installing the product following scenario’s are possible: *list them*. This may lead to the need of additional products and materials for which the impact is not included in this EPD and which shall be taken into account at building level. More detailed information on these scenarios can be found in the chapter “Additional technical information for scenario development at building”.

Special attention is needed if it concerns kits including fixation materials where it shall be very clear in what module the impacts are declared.

VOEG EEN AFBEELDING VAN DE INSTALLATIE van het product IN



## Composition and content

This paragraph shall be split up in following parts:

* The main components of the product
* For every main component of the product its composition

The program operator decides case per case on the level of detail needed. It should be sufficiently detailed and ranges are allowed.

|  |  |  |
| --- | --- | --- |
| Components | Composition / content / ingredients | Quantity |
| Product |  | Ranges are allowed |
| Fixation materials |  |  |
| Jointing materials |  |  |
| Treatments |  |  |
| Packaging |  |  |

The product does not contain materials listed in the “Candidate list of Substances of Very High Concern for authorization”.   
[ if it does, list them here – also if it contains SVHC or CMR, list them here ]

## Reference service life

The reference service life is estimated at xx years.

The RSL is based on [ insert how the RSL was estimated ]

The conditions under which this RSL is valid are as following: [ insert here the conditions or scenario under which the reference service life is valid. ]

## Description of geographical representativity

[ Insert description of the geographical representativity for A123, A4, A5, B, C and D

The EPD is representative for the Belgian market. Modify if necessary.]

## Description of the production process and technology

[ insert description of the production process and a schematic view below. This should allow outsiders to understand the technological representativeness ]





# TECHNICAL DATA / PHYSICAL CHARACTERISTICS

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Technical property | Standard | Value | Unit | Comment |
| Thickness |  |  |  |  |
| Thermal characteristics (mandatory) |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

# LCA-study

## Date of LCA-study

[ insert date of LCA study and calculation on which this EPD is based. If the model development and calculation were done in a seperate study both can be mentioned, but at least the date of the calculation ]



## Software

For the calculation of the LCA results, the software program [ insert software and version number ] has been used.

## Information on allocation

[ insert information on allocation and those stages where it was necessary to apply allocation ]

## Informatie on cut off

The following processes are considered below cut-off:   
[ insert ].

## Information on excluded processes

Following processes were excluded for the inventory:

[ insert flows e.g. Flows related to human activities such as employee transport and administration activity. ]

## Information on biogenic carbon modelling

[ Insert information on biogenic carbon modelling. If not relevant, this shall be stated that the product and packaging to not contain biogenic carbon.

Also make a clear on statement on whether or not the product/packaging contains biogenic carbon. ]

For EN 15804+A2 include following table:

|  |  |
| --- | --- |
| Biogenic carbon content | (kg C / FU ) |
| Biogenic carbon content in product (at the gate) |  |
| Biogenic carbon content in accompagnying packaging (at the gate) |  |
|  |  |

## Information on carbon offsetting

Carbon offsetting is not allowed in the EN 15804 and hence not taken into account in the calculations. [ If the company takes measures for carbon offsetting this can be additionally added and specified here. ]

## Information on carbonation of cementitious materials

YOU CAN REMOVE THIS PARAGRAPH IF NOT RELEVANT

## Additional or deviating characterisation factors

[ For EN 15804+A2: Insert information on the characterization factors. E.g. For the CEN indicators all CF are conform to EN 15804+A1. For toxicity, ionizing radiation and particulate matter the CF of JRC 2018 were used. For ADP following additional CF were used as applied in software xxx

For EN 15804+A2: The characterization factors from EC-JRC were applied. No additional or deviating characterisation factors were used. ]

## Description of the variability

Only in case of average EPD. Insert information on the variability of the product. Please check NBN/DTD B08-001. E.g. in the case of grouping of products.

If not relevant this paragraph may be removed

* Description of the range of variability of the LCIA results [ preferably quantitative ]
* Qualitative description of the main differences between the products / production sites covered by the EPD [ e.g. similar composition but different production process, ... ]
* The range of products for which the EPD is relevant, even if data from some products has not been used directly in producing the EPD ,including the technical description of the product group covered by the EPD
* Information on the most influencing parameters in the LCA

## Specificity

The data used for the LCA are specific for this product which is manufactured by a single manufacturer in a single production site.

## Period of data collection

Manufacturer specific data have been collected for the year xxxx.

## Information on data collection

insert information on data collection. E.g. what are the foreground processes, what are the background processes for which generic datasets were used, data quality information, etc

.

In case of average EPD or collective EPD: whether inventory was used from all sites or if a selection was made:

* Description on how the selection of the sites/products was done
* The number of manufacturing plants included in the EPD, and the relative production volume covered by the sample (in relation to the product group represented by the EPD)
* How the declared value was determined (worst case, weighted average, results from the various products based on production volume)

## Database used for background data

[ insert information on the used databases for background data ]

## Energy mix

[ Insert information on energy mix. ]

# Production sites

[ list information the location of the production sites. In case of a collective EPD you list here the names of the market players for whom the EPD is representative ]



# System boundaries

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Product stage | | | Construction installation stage | | Use stage | | | | | | | End of life stage | | | | Beyond the system boundaries |
| Raw materials | Transport | Manufacturing | Transport | Construction  installation stage | 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 = included in the EPD

☐ = module not declared

Add a clear description of the system boundaries, with special attention for coproducts, EOW, waste processing, input of recovered raw materials, ...

# POTENTIAL ENVIRONMENTAL IMPACTS PER REFERENCE FLOW

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | Production | | | Construction process stage | | Use stage | | | | | | | End-of-life stage | | | |  | |
|  | | A1 Raw material | A2 Transport | A3 manufacturing | A4 Transport | A5 Installation | B1 Use | B2 Maintenance | B3 Repair | B4 Replacement | B5 Refurbishment | B6 Operational  energy use | B7 Operational  water use | C1 Deconstruction / demolition | C2 Transport | C3 Waste processing | C4 Disposal | D Reuse, recovery, recycling | |
|  | GWP total (kg CO2 equiv/FU) | X,xxE+xx |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | GWP fossil (kg CO2 equiv/FU) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | GWP biogenic (kg CO2 equiv/FU) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | GWP luluc (kg CO2 equiv/FU) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | ODP  (kg CFC 11 equiv/FU) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | AP  (mol H+ eq/FU) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | EP - freshwater (kg (PO4)3- equiv/FU) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | EP - marine (kg (PO4)3- equiv/FU) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | EP - terrestrial (kg (PO4)3- equiv/FU) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | POCP  (kg Ethene equiv/FU) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | ADP  Elements (kg Sb equiv/FU) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | ADP  fossil fuels (MJ/FU) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | WDP (m³ water eq deprived /FU) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

GWP total = total Global Warming Potential (Climate Change); GWP-luluc = Global Warming Potential (Climate Change) land use and land use change; ODP = Ozone Depletion Potential; AP = Acidification Potential for Soil and Water; EP = Eutrophication Potential; POCP = Photochemical Ozone Creation; ADPE = Abiotic Depletion Potential – Elements; ADPF = Abiotic Depletion Potential – Fossil Fuels; WDP = water use (Water (user) deprivation potential, deprivation-weighted water consumption)

# RESOURCE USE

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Production | | | Construction process stage | | Use stage | | | | | | | End-of-life stage | | | |  |
|  | A1 Raw material | A2 Transport | A3 manufacturing | A4 Transport | A5 Installation | B1 Use | B2 Maintenance | B3 Repair | B4 Replacement | B5 Refurbishment | B6 Operational  energy use | B7 Operational  water use | C1 Deconstruction / demolition | C2 Transport | C3 Waste processing | C4 Disposal | D Reuse, recovery, recycling |
| PERE (MJ/FU, net calorific value) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| PERM (MJ/FU, net calorific value) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| PERT (MJ/FU, net calorific value) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| PENRE (MJ/FU, net calorific value) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| PENRM (MJ/FU, net calorific value) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| PENRT (MJ/FU, net calorific value) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| SM (kg/FU) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| RSF (MJ/FU, net calorific value) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| NRSF (MJ/FU, net calorific value) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| FW (m³ water eq/FU) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

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

# WASTE CATEGORIES & OUTPUT FLOWS

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Production | | | Construction process stage | | Use stage | | | | | | | End-of-life stage | | | |  |
|  | A1 Raw material | A2 Transport | A3 manufacturing | A4 Transport | A5 Installation | B1 Use | B2 Maintenance | B3 Repair | B4 Replacement | B5 Refurbishment | B6 Operational  energy use | B7 Operational  water use | C1 Deconstruction / demolition | C2 Transport | C3 Waste processing | C4 Disposal | D Reuse, recovery, recycling |
| Hazardous waste disposed  (kg/FU) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Non-hazardous waste disposed  (kg/FU) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Radioactive waste disposed  (kg/FU) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Components for  re-use  (kg/FU) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Materials for recycling  (kg/FU) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Materials for energy recovery  (kg/FU) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Exported energy  (MJ/FU) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

# IMPACT CATEGORIES ADDITIONAL TO EN 15804

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | Production | | | Construction process stage | | Use stage | | | | | | | End-of-life stage | | | |  |
|  |  | A1 Raw material | A2 Transport | A3 manufacturing | A4 Transport | A5 Installation | B1 Use | B2 Maintenance | B3 Repair | B4 Replacement | B5 Refurbishment | B6 Operational  energy use | B7 Operational  water use | C1 Deconstruction / demolition | C2 Transport | C3 Waste processing | C4 Disposal | D Reuse, recovery, recycling |
|  | PM  (disease incidence) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | IRHH  (kg U235 eq/FU) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | ETF  (CTUe/FU) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | HTCE  (CTUh/FU) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | HTnCE  (CTUh/FU) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | Land Use Related impacts  (dimensionless) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

HTCE = Human Toxicity – cancer effects; HTnCE = Human Toxicity – non cancer effects; ETF = Ecotoxicity – freshwater; (potential comparative toxic unit)

PM = Particulate Matter (Potential incidence of disease due to PM emissions );

IRHH = Ionizing Radiation – human health effects (Potential Human exposure efficiency relative to U235 );

## Environmental impact categories explained

|  |  |  |
| --- | --- | --- |
|  | Global Warming Potential | The global warming potential of a gas refers to the total contribution to global warming resulting from the emission of one unit of that gas relative to one unit of the reference gas, carbon dioxide, which is assigned a value of 1.  It is split up in 4:   * Global Warming Potential total (GWP-total) which is the sum of GWP-fossil, GWP-biogenic and GWP-luluc * Global Warming Potential fossil fuels (GWP-fossil) : The global warming potential related to greenhouse gas (GHG) emissions to any media originating from the oxidation and/or reduction of fossil fuels by means of their transformation or degradation (e.g. combustion, digestion, landfilling, etc). * Global Warming Potential biogenic (GWP-biogenic) : The global warming potential related to carbon emissions to air (CO2, CO and CH4) originating from the oxidation and/or reduction of aboveground biomass by means of its transformation or degradation (e.g. combustion, digestion, composting, landfilling) and CO2 uptake from the atmosphere through photosynthesis during biomass growth - i.e. corresponding to the carbon content of products, biofuels or above ground plant residues such as litter and dead wood. * Global Warming Potential land use and land use change (GWP-luluc): The global warming potential related to carbon uptakes and emissions (CO2, CO and CH4) originating from carbon stock changes caused by land use change and land use. This sub-category includes biogenic carbon exchanges from deforestation, road construction or other soil activities (including soil carbon emissions). |
|  | Ozone Depletion | Destruction of the stratospheric ozone layer which shields the earth from ultraviolet radiation harmful to life. This destruction of ozone is caused by the breakdown of certain chlorine and/or bromine containing compounds (chlorofluorocarbonsor halons), Which break down when they reach the stratosphere and then catalytically destroy ozone molecules. |
|  | Acidification potential | Acid depositions have negative impacts on natural ecosystems and the man-made environment incl. buildings. The main sources for emissions of acidifying substances are agriculture and fossil fuel combustion used for electricity production, heating and transport. |
|  | Eutrophication potential | The potential to cause over-fertilization of water and soil, which can result in increased growth of biomass and following adverse effects.  It is split up in 3:   * Eutrophication potential - freshwater: The potential to cause over-fertilization of freshwater, which can result in increased growth of biomass and following adverse effects. * Eutrophication potential - marine: The potential to cause over-fertilization of marine water, which can result in increased growth of biomass and following adverse effects. * Eutrophication potential - terrestrial: The potential to cause over-fertilization of soil, which can result in increased growth of biomass and following adverse effects. |
|  | Photochemical ozonecreation | Chemical reactions brought about by the light energy of the sun creating photochemical smog. The reaction of nitrogen oxides with hydrocarbons in the presence of sunlight to form ozone is an example of a photochemical reaction. |
|  | Abiotic depletion potential  for non-fossil ressources | Consumption of non-renewable resources, thereby lowering their availability for future generations. Expressed in comparison to Antimonium (Sb).  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. |
|  | Abiotic depletion potential for fossil ressources | Measure for the depletion of fossil fuels such as oil, natural gas, and coal. The stock of the fossil fuels is formed by the total amount of fossil fuels, expressed in Megajoules (MJ).  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. |
|  | Ecotoxicity for aquatic fresh water | The impacts of chemical substances on ecosystems (freshwater).  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. |
|  | Human toxicity (carcinogenic effects) | The impacts of chemical substances on human health via three parts of the environment: air, soil and water.  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. |
|  | Human toxicity (non-carcinogenic effects) | 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. |
|  | Particulate matter | Accounts for the adverse health effects on human health caused by emissions of Particulate Matter (PM) and its precursors (NOx, SOx, NH3) |
|  | Resource depletion (water) | Accounts for water use related to local scarcity of water as freshwater is a scarce resource in some regions, while in others it is not.  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. |
|  | Ionizing radiation - human health effects | This impact category deals mainly with the eventual impact on human health of low dose ionizing radiation 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. |
|  | Land use related impacts | The indicator is the “soil quality index” which is the result of an aggregation of following four aspects:   * Biotic production * Erosion resistance * Mechanical filtration * Groundwater   The aggregation is done based on a JRC model. The four aspects are quantified through the LANCA model for land use.  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. |

# DETAILS OF THE UNDERLYING SCENARIOS USED TO CALCULATE THE IMPACTS

## A1 - raw material supply

This module takes into account the extraction and processing of all raw materials and energy which occur upstream to the studied manufacturing process.

+ insert important assumptions made on this stage

## A2 – transport to the manufacturer

The raw materials are transported to the manufacturing site + [ insert assumptions made on this stage ]

## manufacturing

This module takes into account the production process   
+ [ insert assumptions on this stage ]

## A4 – transport to the building site

|  |  |  |  |
| --- | --- | --- | --- |
| Fuel type and consumption of vehicle or vehicle type used for transport | E.g. Truck 16-32 ton  0,256 l diesel / km |  |  |
| Distance | e.g. 100 |  |  |
| Capacity utilisation (including empty returns) | e.g. 50% |  |  |
| Bulk density of transported products |  |  |  |
| Volume capacity utilisation factor |  |  |  |

insert information on this stage.

The B-PCR provides default transport scenarios for the transport to the building site for cases where specific data on transport are missing. The B-PCR provides scenario’s for this life cycle stage. Fibre cement boards are categorized as ‘loose products’ in table 5 of the B-PCR. The following transport steps apply:

* 40% directly to the construction site over 100 km with a 16-32 ton lorry (ecoinvent record: ‘Transport, freight, lorry 16-32 metric ton, EURO5 {RER}| transport, freight, lorry 16-32 metric ton, EURO5 | Cut-off, U’)
* 60% to a supplier over 100 km with a 16 -32 ton lorry (ecoinvent record: ‘Transport, freight, lorry 16-32 metric ton, EURO5 {RER}| transport, freight, lorry 16-32 metric ton, EURO5 | Cut-off, U’)
* 85% of these 60% is transported over 35 km from supplier to construction site with a 16-32 ton lorry (ecoinvent record: ‘Transport, freight, lorry 16-32 metric ton, EURO5 {RER}| transport, freight, lorry 16-32 metric ton, EURO5 | Cut-off, U’)
* 15% of these 60% is transported over 35 km from supplier to construction site with a 7.5-16 ton lorry (ecoinvent record: ‘Transport, freight, lorry 7.5-16 metric ton, EURO5 {RER}| transport, freight, lorry 7.5-16 metric ton, EURO5 | Cut-off, U’)

## A5 – installation in the building

At the construction site, packaging materials are released. Also 5% material losses have been taken into account

|  |  |  |
| --- | --- | --- |
| Parts of the installation | quantity | Description |
| Processes necessary for the installation of the product |  | E.g. energy needed for blowing in the material |
| Fixation materials |  | E.g. copper slate hooks |
| Jointing materials |  | E.g. the filler material between gypsum plates |
| Treatments |  | E.g. the first treatment of a wooden floor or wooden window |
| Material losses |  | E.g. the quantity of material lost due to cutting it in the right shape |
| Packaging |  | E.g. the packaging waste at the construction site |
| Others |  |  |

|  |  |  |  |
| --- | --- | --- | --- |
| Ancillary materials for installation (specified by material) | Insert information |  |  |
| Water use |  |  |  |
| Other resource use |  |  |  |
| Quantitative description of energy type (regional mix) and consumption during the installation process |  |  |  |
| Waste materials on the building site before waste processing, generated by the product’s installation (specified by type) |  |  |  |
| Output materials (specified by type) as result of waste processing at the building site e.g. of collection for recycling, for energy recovery, disposal (specified by route) |  |  |  |
| Direct emissions to ambient air, soil and water |  |  |  |
| Distance |  |  |  |

## B – use stage (excluding potential savings)

[ insert information on the different use stage modules. Also specify whether specific or default from NBN/DTD}

B1:

B2:

B3:

B4:

B5:

B6: ]

## C: End of life

[ insert information per C-module on the EOL stage. Also specify whether specific scenarios were developped or the default from NBN/DTD were taken

C1:

C2:

C3:

C4: ]

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Module C2 – Transport to waste processing | | | | | |
| Type of vehicle  (truck/boat/etc.) | Fuel consumption  (litres/km) | Distance (km) | Capacity utilisation  (%) | Density of products  (kg/m3) | Assumptions |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |

|  |  |
| --- | --- |
| End-of-life modules – C3 and C4 |  |
| Parameter | Value (kg) |
| Wastes collected separately |  |
| Wastes collected as mixed construction waste |  |
| Waste for re-use |  |
| Waste for recycling |  |
| Waste for energy recovery |  |
| Waste for final disposal |  |

## D – Benefits and loads beyond the system boundaries

insert information on this stage

|  |  |
| --- | --- |
| Quantitative description of the loads beyond the system boundaries | [ Insert information ] |
| Quantitative description of the benefits beyond the system boundaries | [ Insert information ] |

# RELEASE OF DANGEROUS SUBSTANCES TO INDOOR AIR, SOIL AND WATER DURING THE USE STAGe

## Indoor air

[ insert information on emisions into indoor air. Reference to CEN TC 16561]

## Soil and water

[ insert information on emisions into soil and water. Cf. CEN TC 351 ]



# DEMONSTRATION OF VERIFICATION

EN 15804+A1 serves as the core PCR

Independent verification of the environmental declaration and data according to standard EN ISO 14025:2010

Internal  External

Third party verifier: [ insert name + address + email ]



# lca interpretation

Optional

# TECHNICAL INFORMATION FOR SCENARIO DEVELOPMENT

This chapter can be removed if not relevant. It can also be merged with the chapter on Application unit.

In this chapter all information is given to allow correct development of scenario’s at building level for those (part of) modules where no impact was calculated in this EPD.

E.g for EPD is “as produced” and for A5 only the material losses and the packaging EOL was taken into account. However when the product will be installed other materials and processes may be necessary. These shall be clarified and specified to the extent possible (type, amount, scenario description).

E.g. for EPD “as installed” for A5 the impact of only one scenario was calculated. Other possible scenario’s shall be clarified and specified here to the extent possible.

For A5 at least following parameters shall be reflected per scenario, including a short general description per scenario:

|  |  |  |
| --- | --- | --- |
| Parts of the installation | quantity | Description |
| Processes necessary for the installation of the product |  | E.g. energy needed for blowing in the material |
| Fixation materials |  | E.g. copper slate hooks |
| E.g. copper slate hooks |  | E.g. copper slate hooks |
| E.g. copper slate hooks |  | E.g. the first treatment of a wooden floor or wooden window |
| Material losses |  | E.g. the quantity of material lost due to cutting it in the right shape |
| Packaging |  | E.g. the packaging waste at the construction site |
| Others |  |  |

Fixation materials are materials necessary to attach a product to another layer or to the primary structure of the building.

Jointing materials are materials used during or shortly after installation to connect products within the same layer.

The program operator has the final word on which parts of the installation shall be declared.

# APPLICATION UNIT

(only mandatory for B-EPD for use in TOTEM)

This paragraph gives information on on the applied product and how the reference flow and table with impacts relate to different applications.

Here you list the possible applications for the product with its ratio to another unit, commonly used for that application (e.g. roof tiles: reference flow may be in kg, while depending on the overlap and type of tile the quantity   
per m² roof varies).

Insert here information on how the impact table can be scaled or applied.

Information on scalability. (e.g. table is for a certain thickness, the environmental impact is proportional with the thickness)

* + An overview of all intended uses of the product in the scope of the EPD (e.g. thermal insulation of flat roofs, thermal insulation of outer walls)
  + Per intended use
  + the commercial names (e.g. Insulate Rroof (c), Insulate Exteria)
  + Indicate the element where it is used (e.g. flat roof, outer walls, inclinded roof...).
  + The quantity and unit of the application. E.g. the reference flow in the B-EPD can be per ton, while the application unit is 1 m² with a certain overlap of the product depending on the application.
  + an overview of possible commercial dimensions (e.g. board dimensions and a list of all thicknesses)
  + the ratio between application and the reference flow in the EPD. If the reference flow of the B-EPD is the same as the application unit, than a ratio = 1 shall be entered. E.g. if your reference quantity (i.e. to what the impact table is corresponding) is "per ton of product" and the application unit is "1 m² of applied product", than the ratio is the impact per m² divided by the impact per ton of product.

E.g. The reference quantity for a roof tile can be "ton". Depending on the shape and overlap when installed, the real impact per m² can differ per type of rooftile. The different types can be entered here with there specific ratio allowing us to go from the reference quantity to the application unit.

For more information please check the Additional rules complimentary to NBN DTD B08-001 on www.b-epd.be

# ADDITIONAL INFORMATION ON REVERSIBILITY

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Description | Type of fixing | Level of reversibility | Simplicity of disassembly | Speed of disassembly | Ease of handling (size and weight) | Robustness of material (material resistance to disassembly) | Comment |
| Describe to what element or other product the product is installed to | Description of ancillary material and way of connecting. One line per way of connecting. See table below for options. | Indicate the level of reversibility based on the table below **per type of fixing**.   * Reversible connections * Reversible connections with light repairable damage * Reversible connections with non-repairable damage * Non reversible connections | per type of connection, choose from   * simple – no specific dismantling tools required * Simple – requires the use of specific though common tools * Simple, but collecting the material is a bit more intensive (ex. bulk material) * More complex - requires specific tools and/or skills | Per type of connection choose from  - speedy disassembly  - Speedy, lightweight material   * Speedy, material loosely laid / in bulk * Rather speedy disassembly * Speed of disassembly varies from quick to slow depending on element dimensions * Speed of disassembly varies from quick to slow depending on element dimensions and number of fixations per distance unit * Disassembly is slow (due to dimensions, weight and/or fixation method) | Per type of connection choose from   * Easy to manipulate (by hand (small size and limited weight): one worker should be sufficient * Material easy to manipulate by hand, one to two workers required depending on dimensions * Can be handled manually, but due to size, weight and/or tools two or more workers are required * At least two workers and additional specific equipment are needed * Comes in a manipulable size, but the whole is rather heavy to manipulate. | Per type of connection choose from   * The material resists well during disassembly * Disassembly is possible but should be done carefully in order not to generate any damage * Material with a long lifespan, disassembly is possible but the material should be handled with care in order to prevent damaging it * Disassembly is possible but can cause damage to the material due to the type of assembly or fixing used. * Disassembly is possible but will likely cause damage to the material due to the type of assembly or fixing used * Disassembly is possible but will likely cause damage to the material due to the type of assembly or and tools used and the presence of additional layers. |  |
| e.g. Bricks joint together to form an external wall | cement mortar for masonry joints (R joint ≥ Rmat) | E.g. Non reversible connections. |  |  |  |  |  |
| e.g. Insulation attached to concrete flat roof structure | Loose laid with ballast | e.g. reversible connections |  |  |  |  |  |
| e.g. Insulation attached to concrete flat roof structure | screws | reversible with light repairable damage | simple - use of dismantling tools required | speedy disassembly | easy to handle manually, one workers is usually sufficient | disassembly is possible but should be done carefully in order not to generate any damage |  |
| ... | ... | ... |  |  |  |  |  |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| e.g. Bricks joint together to form an external wall | cement mortar for masonry joints (R joint ≥ Rmat) | E.g. Non reversible fixing. |  |  |  |  |  |  |
| e.g. Insulation attached to concrete flat roof structure | Loose laid with ballast | e.g. reversible fixing |  |  |  |  |  |  |
| e.g. Insulation attached to concrete flat roof structure | screws | reversible with light repairable damage | simple - use of dismantling tools required | speedy disassembly | easy to handle manually, one workers is usually sufficient | disassembly is possible but should be done carefully in order not to generate any damage |  |  |
| ... | ... | ... |  |  |  |  |  |  |

the table below only serves as guidance to determine the level of reversbility in the table above and shall not be included in the EPD

|  |  |
| --- | --- |
| Connection (EN) | reversibilityCategory |
| Anchored | Reversible connections with light repairable damage |
| Anchored (anchors not modelled) | Reversible connections with light repairable damage |
| Anchored with hinged subcomponents | Reversible connections with light repairable damage |
| Masonry with bastard mortar joints (Rjoint ≥ Rmat) | Non reversible connections |
| Bolted | Reversible connections with light repairable damage |
| Bolted (bolts not modelled) | Reversible connections with light repairable damage |
| Bolted/screwed (bolts/screws not modelled) | Reversible connections with light repairable damage |
| Buried, reversible but not easy accessible for reuse | Non reversible connections |
| Cast/fixed in mass (chemically bonded) | Non reversible connections |
| Cast in situ (chemically bonded) | Non reversible connections |
| Fixed with cement mortar (R ≥ Rmat) | Non reversible connections |
| Masonry with cement mortar joints (Rjoint ≥ Rmat) | Non reversible connections |
| Clamped and sealed | Reversible connections |
| Coating (chemically bonded) | Non reversible connections |
| Fixed with clips | Reversible connections |
| Fixed with cavity ties and clips (components to be added) | Reversible connections with non-repairable damage |
| Glued | Non reversible connections |
| Glued and nailed | Non reversible connections |
| Glued and fixed with plugs | Non reversible connections |
| Glued (adhesive not modelled) | Non reversible connections |
| Glued and joints with cement mortar | Non reversible connections |
| Masonry with adhesive mortar (Rjoint ≥ Rmat) | Non reversible connections |
| Hinged (hinges not modelled) | Reversible connections |
| Fixed with lime mortar (R = Rmat) | Reversible connections with non-repairable damage |
| Lime mortar for masonry joints (Rjoint < Rmat) | Reversible connections with non-repairable damage |
| Loose laid | Reversible connections |
| Loose laid and ballasted | Reversible connections |
| Loose laid but covered by/integrated in concrete | Non reversible connections |
| Loose laid but with cement mortar joints | Non reversible connections |
| Mechanically fixed but covered by concrete (rivets or shear studs not modelled) | Non reversible connections |



# BIBLIOGRAPHY

ISO 14040:2006: Environmental Management-Life Cycle Assessment-Principles and framework.

ISO 14044:2006: Environmental Management-Life Cycle Assessment-Requirements and guidelines.

ISO 14025:2006: Environmental labels and Declarations-Type III Environmental Declarations-Principles and procedures.

NBN EN 15804+A2:2019

NBN/DTD B 08-001 (BE-PCR)

[ insert relevant reference documents used ]

General information

|  |  |
| --- | --- |
|  | Owner of the EPD, Responsible for the data,  LCA and information  [ Insert manufacturer name + street + postal code + city, country and telephone number ]  For more information you can contact: [ insert contact person and email address ] |

|  |  |
| --- | --- |
| Author(s) of the LCA and EPD  [ Insert name, organisation and emailaddress ]  Project report: [insert a unique reference number and title  of the project report ] |  |

|  |  |
| --- | --- |
|  | Verifier  [ Name and association of the verifier ]  Date of verification: dd.mm.yyyy  External independent verification of the declaration and data according to EN ISO 14025 and relevant PCR documents |

Comparing EPDs is not possible unless they are conform to the same PCR and taking into account the building context.

The program operator cannot be held responsible for the information supplied by the owner of the EPD nor LCA practitioner.





B-EPD program operator

Federal Public Service (FPS) of Health,  
Food Chain Safety and Environmentu



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