

structo WALL
SYSTEMS

ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH
EN 15804+A2 & ISO 14025

WOODEN DOORS



Structo Group OÜ




GENERAL INFORMATION

MANUFACTURER INFORMATION

| | |
|-----------------|---|
| Manufacturer | Structo Group OÜ |
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| Website | www.structo.ee |

PRODUCT IDENTIFICATION

| | |
|------------------------|---|
| Product name | Wooden Doors: DOOR PORTA-53W WOODSLIDE |
| Place(s) of production | Estonia |



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RTS EPD Committee secretary



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The Building Information Foundation RTS sr

EPDs within the same product category but from different programmes may not be comparable.

EPD INFORMATION

The EPD owner has the sole ownership, liability, and responsibility for the EPD. EPDs of construction products may not be comparable if they do not comply with EN 15804 and if they are not compared in a building context.

| | |
|------------------------|---|
| EPD program operator | The Building Information Foundation RTS sr/ Building Information Ltd Malminkatu 16 A, |
| EPD standards | This EPD is in accordance with EN 15804+A2 and ISO 14025 standards. |
| Product category rules | The CEN standard EN 15804 serves as the core PCR. In addition, the RTS PCR (English version, 26.8.2020) is used. |
| EPD author | Mari Kirss and Anni Oviir Rangi Maja OÜ Tondi 22-4, Tallinn Estonia www.lcasupport.com |
| EPD verification | Independent verification of this EPD and data, according to ISO 14025: <input type="checkbox"/> Internal certification <input checked="" type="checkbox"/> External verification |
| Verification date | 5 August 2021 |
| EPD verifier | Silvia Vilčeková, Silcert, s.r.o. |
| EPD number | RTS_144_21 |
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| EPD valid until | 16.08.2026 |

PRODUCT INFORMATION

PRODUCT DESCRIPTION

DOOR is a wooden door with wooden frame.

PORTA-53W is a wooden door with aluminum frame.

WOODSLIDE is a wooden sliding door with top rail.

PRODUCT APPLICATION

Wooden doors are interior elements that are mainly used in office buildings. They can be combined with different glass walls to create exciting and functional results.

PHYSICAL PROPERTIES OF THE PRODUCT

Product properties can be found on the manufacturer website at www.structo.ee

TECHNICAL SPECIFICATIONS

For this assessment one square meter of product shall be used.

| Product | Width, mm | Height, mm | Door frame width, mm | Door frame height, mm | Element thickness, mm | Weight, kg |
|-----------|-----------|------------|----------------------|-----------------------|-----------------------|------------|
| DOOR | - | - | 927 | 2121 | 120 | 46 |
| PORTA-53W | - | - | 825 | 2241 | 54 | 43 |
| WOODSLIDE | 983 | 2352 | - | - | 58 | 28 |

ADDITIONAL TECHNICAL INFORMATION

Further information can be found at www.structo.ee

SUBSTANCES, REACH - VERY HIGH CONCERN

The product does not contain any REACH SVHC substances in amounts greater than 0,1% (1000 ppm).

PRODUCT RAW MATERIAL COMPOSITION

| | Quantity, mass % | | | Usability | | | Origin of the raw materials |
|------------------------------|------------------|------------|------------|------------|---------------|----------|-----------------------------|
| | DOOR | PORTA-53W | WOODSLIDE | Re-newable | Non-renewable | Recycled | |
| Chipboard | 53 | 54 | 33 | X | | | non-EU |
| HDF | 20 | 20 | 22 | X | | | EU |
| Finger-jointed pine | 20 | 7 | 10 | X | | | EU |
| MDF | - | - | 21 | X | | | EU |
| Aluminum | - | 12 | 6 | | X | | non-EU |
| Paints, lacquers and primers | 2 | 2 | 5 | | X | | EU & non-EU |
| Steel | 2 | 3 | 1 | | X | | EU |
| Adhesives and sealants | 2 | 2 | 2 | | X | | EU & non-EU |
| Oak | 1 | - | - | | X | | EU & non-EU |
| TOTAL | 100 | 100 | 100 | | | | |

| Raw material category | Amount, mass- % | | | Material origin |
|-----------------------|-----------------|------------|------------|-----------------|
| | DOOR | PORTA-53W | WOODSLIDE | |
| Metals | 2 | 14 | 7 | EU & non-EU |
| Minerals | - | - | - | - |
| Fossil materials | 5 | 4 | 6 | EU & non-EU |
| Bio-based materials | 93 | 82 | 86 | EU |
| TOTAL | 100 | 100 | 100 | |



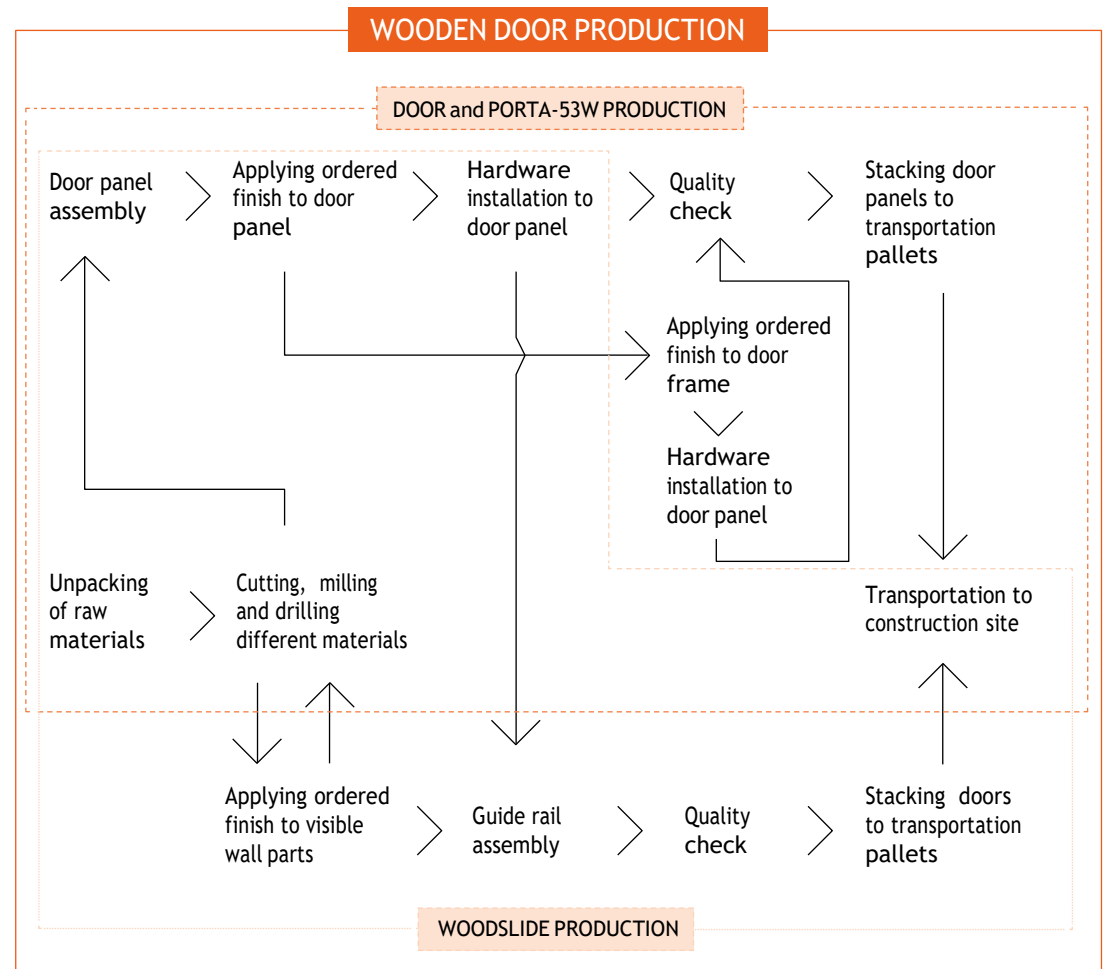
PRODUCT LIFE-CYCLE

MANUFACTURING AND PACKAGING (A1-A3)

DOOR and PORTA-53W production begins with unpacking the raw materials. After that, the materials are processed and assembled into door panels and frames. When the door panel is assembled, it will get the selected finish and will be left to dry. At the same time, the door frame will get the finish. DOOR will be assembled with a wooden frame and PORTA-53W with an aluminum frame. When the finish has dried, the door panel and frame will get preparations for hardware and seals installation, after which the hardware and seals will be fixed to the door panel and frame. Before packing and stacking door panels to transportation pallets, final quality checks will be conducted and the products will be ready for transportation to the construction site.

WOODSLIDE production begins with raw materials unpacking and processing in the same manner. Depending on the materials and their location, they will get the selected finish or will be used without finish if they are concealed. Some materials require additional processing after the finish has been applied. At the same time, the materials are processed and assembled into door panels. When the door panel is assembled, it will get the selected finish and will be left to dry. When the finish has dried, the door panel will get preparations for hardware installation. Hardware and rollers will be fixed to the door panel and the guide rail will be assembled. Before packing and stacking the doors to the transportation pallets, final quality checks will be concluded and the finished product will be sent to the construction site.

MANUFACTURING PROCESS:



TRANSPORT (A4)

Transportation impacts occurred from final product's delivery to construction site cover direct exhaust emissions of fuel, environmental impacts of fuel production, as well as related infrastructure emissions.

PRODUCT END OF LIFE (C1-C4, D)

At the end-of-life, in the demolition phase end-of-life product is collected as mixed waste (C1) and is assumed to be sent (C2) to recycling (C3). Around 2% is sent to land-fill (C4). Due to the recycling potential of aluminum, some of the end-of-life product is converted into recycled raw materials (D).



LIFE-CYCLE ASSESSMENT

LIFE-CYCLE ASSESSMENT INFORMATION

| | |
|-----------------|------|
| Period for data | 2020 |
|-----------------|------|

DECLARED AND FUNCTIONAL UNIT

| | |
|------------------------|------------------|
| Declared unit | 1 m ² |
| Mass per declared unit | 28 - 46 kg |

BIOGENIC CARBON CONTENT

Product's biogenic carbon content at the factory gate

| | |
|--|-------------|
| Biogenic carbon content in product, kg C | 6.66 - 9.98 |
| Biogenic carbon content in packaging, kg C | 0.54 - 0.88 |

SYSTEM BOUNDARY

This EPD covers the cradle to gate with options scope with following modules; A1 (Raw material supply), A2 (Transport) and A3 (Manufacturing), A4 (Transport), as well as C1 (Deconstruction), C2 (Transport at end-of-life), C3 (Waste processing) and C4 (Disposal). In addition, module D - benefits and loads beyond the system boundary is included.

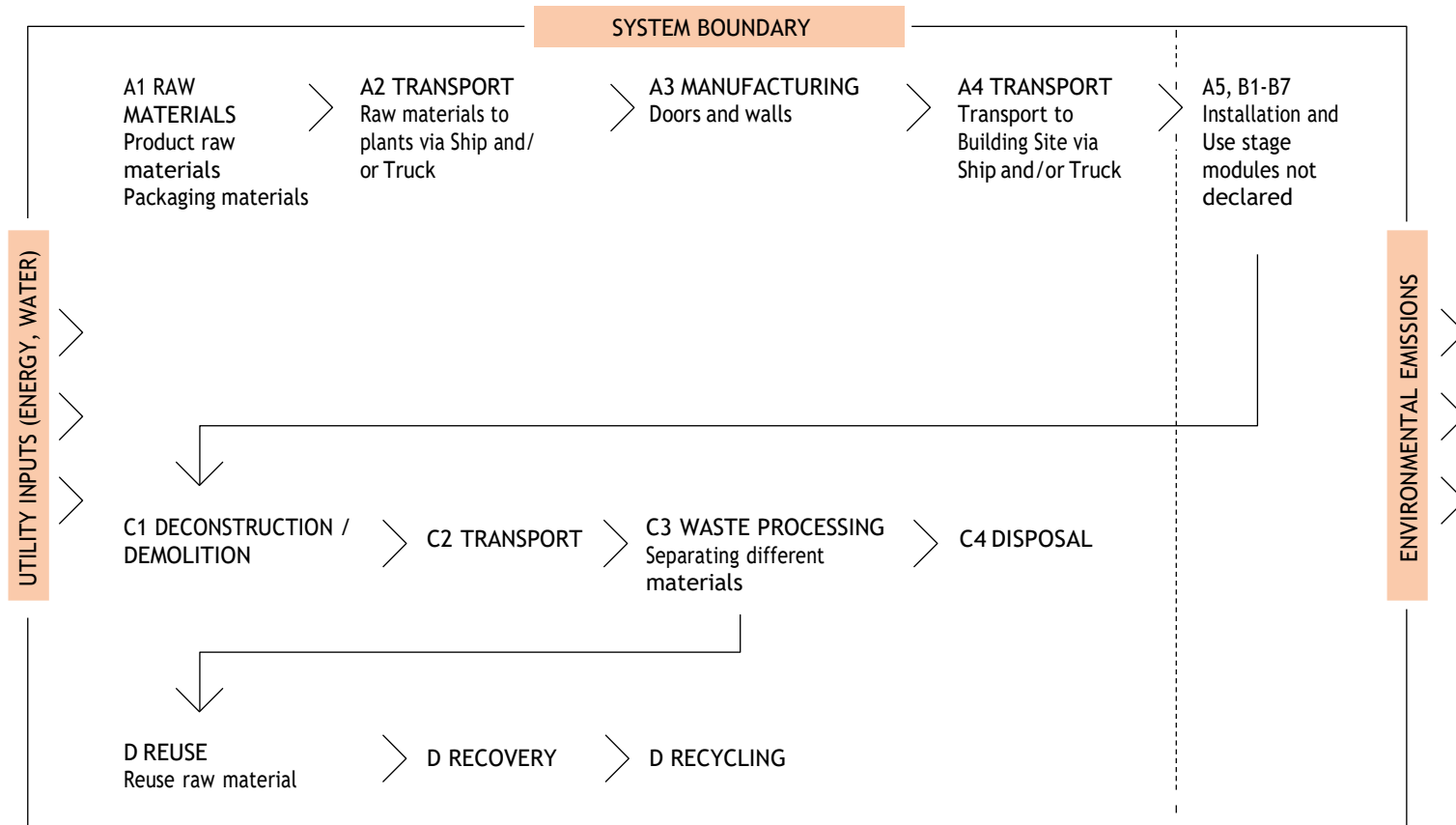
| Product stage | | | Assembly stage | | | Use stage | | | | | | | End of life stage | | | | Beyond the system boundaries | | |
|---------------|----|----|----------------|-----|-----|-----------|-----|-----|-----|-----|-----|----|-------------------|----|----|---|------------------------------|---|--|
| A1 | A2 | A3 | A4 | A5 | B1 | B2 | B3 | B4 | B5 | B6 | B7 | C1 | C2 | C3 | C4 | D | D | D | |
| x | x | x | x | MND | MND | MND | MND | MND | MND | MND | MND | x | x | x | x | x | x | x | |

Geography, by two-letter ISO country code or regions. The International EPD System only.

| | | | | | | | | | | | | | | | | | | |
|---------------|-----------|---------------|-----------|----------|-----|-------------|--------|-------------|---------------|------------------------|-----------------------|------------------------|-----------|------------------|----------|-------|----------|-----------|
| Raw materials | Transport | Manufacturing | Transport | Assembly | Use | Maintenance | Repair | Replacement | Refurbishment | Operational energy use | Operational water use | Deconstr. / demolition | Transport | Waste processing | Disposal | Reuse | Recovery | Recycling |
|---------------|-----------|---------------|-----------|----------|-----|-------------|--------|-------------|---------------|------------------------|-----------------------|------------------------|-----------|------------------|----------|-------|----------|-----------|

Modules not declared = MND

LIFE CYCLE STAGES DIAGRAM:



CUT-OFF CRITERIA

The study does not exclude any modules or processes which are stated mandatory in the EN 15804:2012+A2:2019 and the applied PCR. The study does not exclude any hazardous materials or substances.

The study includes all major raw material and energy consumption. All inputs and outputs of the unit processes, for which data is available for, are included in the calculation. There is no neglected unit process more than 1% of total mass or energy flows. The module specific total neglected input and output flows also do not exceed 5% of energy usage or mass.

ALLOCATION

Allocation is required if some material, energy, and waste data cannot be measured separately for the product under investigation.

In this study, as per EN 15804, allocation is conducted in the following order;

1. Allocation should be avoided.
2. Allocation should be based on physical properties (e.g. mass, volume) when the difference in revenue is small.
3. Allocation should be based on economic values.

Allocation used in Ecoinvent 3.6 environmental data sources follows the methodology 'allocation, cut-off by classification'. This methodology is in line with the requirements of the EN 15804 -standard.

ESTIMATES AND ASSUMPTIONS

This LCA study is conducted in accordance with all methodological considerations, such as performance, system boundaries, data quality, allocation procedures, and decision rules to evaluate inputs and outputs. All estimations and assumptions are given below:

Module A4: The transportation distance is defined according to RTS PCR. It was assumed that typical installation place is situated in Stockholm, Sweden. Average distance of transportation from production plant to building site is equal to 460 km. Transportation method is assumed to be ferry and lorry. The transportation doesn't cause losses as products are packaged properly. Also, volume capacity utilisation factor is assumed to be 1 for the nested packaged products.

Module C1: Energy consumption of demolition process is on the average 0 kWh/m². It is assumed no machinery is needed for the process.

Module C2: It is estimated that there is no mass loss during the use of the product, therefore the end-of-life product is assumed that it has the same weight with the declared product. All of the end-of-life product is assumed to be sent to the closest facilities such as recycling and landfill. Transportation distance to the closest disposal area is estimated as 15 km and the transportation method is assumed as lorry which is the most common.

Module A2, A4 & C2: Vehicle capacity utilization volume factor is assumed to be 1 which means full load. In reality, it may vary but as role of transportation emission in total results is small and so the variety in load assumed to be negligible. Empty returns are not taken into account as it is assumed that return trip is used by transportation company to serve needs of other clients.

Module C3: It is assumed that 98% of total waste is recycled or incinerated for heat production. This assumption was based on information from industry associations. App. 95% of metals. 98% of other waste is incinerated for heat generation. The process losses of the waste treatment plant are assumed to be negligible.

Module C4: The remaining 2% of is assumed to be send to landfill.

Module D: The recycled end-of-life product is assumed to be converted into a raw material after recycling.

ENVIRONMENTAL IMPACT DATA

Note: ENVIRONMENTAL IMPACTS - EN 15804+A1, CML / ISO 21930 are presented in annex.

CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, PEF

- 1) GWP = Global Warming Potential; EP = Eutrophication potential; POCP = Photochemical ozone formation; ADP = Abiotic depletion potential.
- 2) EN 15804+A2 disclaimer for Abiotic depletion and Water use and optional indicators except Particulate matter and Ionizing radiation, human health. The results of these environmental impact indicators shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator.
- 3) Required characterisation method and data are in kg P-eq. Multiply by 3,07 to get PO4e.

DOOR - CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, PEF

| Impact category | Unit | A1-A3 | A4 | C1 | C2 | C3 | C4 | D |
|-----------------------------|-----------|---------|---------|-----|---------|---------|---------|----------|
| GWP - total | kg CO2e | 2,85E1 | 2,24E0 | 0E0 | 1,14E-1 | 5,58E1 | 9,57E-3 | -1,29E0 |
| GWP - fossil | kg CO2e | 5,19E1 | 2,26E0 | 0E0 | 1,14E-1 | 2,28E1 | 9,49E-3 | -1,3E0 |
| GWP - biogenic | kg CO2e | -2,37E1 | 2,16E-4 | 0E0 | 6,1E-5 | 3,3E1 | 7,67E-5 | 9,65E-3 |
| GWP - LULUC | kg CO2e | 3,21E-1 | 1,15E-3 | 0E0 | 4,05E-5 | 4,8E-4 | 4,55E-6 | 3,6E-5 |
| Ozone depletion pot. | kg CFC11e | 5,96E-6 | 4,8E-7 | 0E0 | 2,6E-8 | 1,68E-7 | 2,94E-9 | -3,45E-8 |
| Acidification potential | mol H+e | 3,08E-1 | 5,23E-2 | 0E0 | 4,67E-4 | 1,44E-2 | 8,09E-5 | -5,02E-3 |
| EP-freshwater ³⁾ | kg Pe | 5,39E-3 | 1,25E-5 | 0E0 | 9,56E-7 | 2,81E-5 | 1,66E-7 | -5,22E-5 |
| EP-marine | kg Ne | 6,25E-2 | 1,32E-2 | 0E0 | 1,39E-4 | 6,22E-3 | 2,74E-5 | -9,87E-4 |
| EP-terrestrial | mol Ne | 6,43E-1 | 1,47E-1 | 0E0 | 1,53E-3 | 6,44E-2 | 3,02E-4 | -1,04E-2 |
| POCP (“smog”) | kg NMVOCe | 2,18E-1 | 3,85E-2 | 0E0 | 4,69E-4 | 1,61E-2 | 8,73E-5 | -6,82E-3 |
| ADP-minerals & metals | kg Sbe | 5E-2 | 2,3E-5 | 0E0 | 3,09E-6 | 2,79E-5 | 1,02E-7 | -1,29E-6 |
| ADP-fossil resources | MJ | 7,75E2 | 3,1E1 | 0E0 | 1,72E0 | 1,38E1 | 2,23E-1 | -9,6E0 |
| Water use ²⁾ | m3e depr. | 5,12E1 | 8,05E-2 | 0E0 | 5,55E-3 | 1,69E0 | 9,98E-3 | -1,85E-1 |

PORTA-53W - CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, PEF

| Impact category | Unit | A1-A3 | A4 | C1 | C2 | C3 | C4 | D |
|-----------------------------|------------------------|---------|---------|-----|---------|---------|---------|----------|
| GWP - total | kg CO2e | 8,34E1 | 2,16E0 | 0E0 | 1,08E-1 | 5,11E1 | 7,97E-3 | -3,23E1 |
| GWP - fossil | kg CO2e | 1E2 | 2,17E0 | 0E0 | 1,08E-1 | 2,35E1 | 7,91E-3 | -3,22E1 |
| GWP - biogenic | kg CO2e | -1,72E1 | 2,08E-4 | 0E0 | 5,77E-5 | 2,76E1 | 6,39E-5 | 1,93E-2 |
| GWP - LULUC | kg CO2e | 4,76E-1 | 1,11E-3 | 0E0 | 3,83E-5 | 5,19E-3 | 3,79E-6 | -9,56E-2 |
| Ozone depletion pot. | kg CFC11e | 7,85E-6 | 4,62E-7 | 0E0 | 2,46E-8 | 5E-7 | 2,45E-9 | -1,37E-6 |
| Acidification potential | mol H+e | 6,18E-1 | 5,03E-2 | 0E0 | 4,42E-4 | 3,48E-2 | 6,74E-5 | -1,94E-1 |
| EP-freshwater ³⁾ | kg Pe | 7,17E-3 | 1,2E-5 | 0E0 | 9,05E-7 | 2,11E-4 | 1,38E-7 | -1,39E-3 |
| EP-marine | kg Ne | 1,15E-1 | 1,27E-2 | 0E0 | 1,31E-4 | 9,25E-3 | 2,28E-5 | -3,05E-2 |
| EP-terrestrial | mol Ne | 1,24E0 | 1,41E-1 | 0E0 | 1,45E-3 | 1,01E-1 | 2,52E-4 | -3,41E-1 |
| POCP ("smog") | kg NMVOCe | 3,85E-1 | 3,71E-2 | 0E0 | 4,44E-4 | 2,63E-2 | 7,27E-5 | -1,11E-1 |
| ADP-minerals & metals | kg Sbe | 5,75E-2 | 2,21E-5 | 0E0 | 2,92E-6 | 1,96E-2 | 8,49E-8 | 4,72E-3 |
| ADP-fossil resources | MJ | 1,29E3 | 2,98E1 | 0E0 | 1,63E0 | 5,89E1 | 1,86E-1 | -3,46E2 |
| Water use ²⁾ | m ³ e depr. | 3,65E1 | 7,75E-2 | 0E0 | 5,25E-3 | 5,74E0 | 8,32E-3 | -4,54E0 |

WOODSLIDE - CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, PEF

| Impact category | Unit | A1-A3 | A4 | C1 | C2 | C3 | C4 | D |
|-----------------------------|-----------|---------|---------|-----|---------|---------|---------|----------|
| GWP - total | kg CO2e | 3,85E1 | 1,39E0 | 0E0 | 7,09E-2 | 3,44E1 | 5,64E-3 | -4,73E-1 |
| GWP - fossil | kg CO2e | 5,73E1 | 1,4E0 | 0E0 | 7,08E-2 | 1,49E1 | 5,59E-3 | -4,77E-1 |
| GWP - biogenic | kg CO2e | -1,9E1 | 1,34E-4 | 0E0 | 3,78E-5 | 1,95E1 | 4,51E-5 | 3,54E-3 |
| GWP - LULUC | kg CO2e | 2,65E-1 | 7,13E-4 | 0E0 | 2,51E-5 | 1,8E-3 | 2,68E-6 | 1,32E-5 |
| Ozone depletion pot. | kg CFC11e | 6,9E-6 | 2,98E-7 | 0E0 | 1,61E-8 | 2,1E-7 | 1,73E-9 | -1,27E-8 |
| Acidification potential | mol H+e | 3,77E-1 | 3,24E-2 | 0E0 | 2,89E-4 | 1,56E-2 | 4,76E-5 | -1,84E-3 |
| EP-freshwater ³⁾ | kg Pe | 5,07E-3 | 7,74E-6 | 0E0 | 5,93E-7 | 7,6E-5 | 9,77E-8 | -1,91E-5 |
| EP-marine | kg Ne | 7,01E-2 | 8,18E-3 | 0E0 | 8,6E-5 | 4,89E-3 | 1,61E-5 | -3,62E-4 |
| EP-terrestrial | mol Ne | 7,95E-1 | 9,09E-2 | 0E0 | 9,5E-4 | 5,23E-2 | 1,78E-4 | -3,83E-3 |
| POCP ("smog") | kg NMVOCe | 2,57E-1 | 2,39E-2 | 0E0 | 2,91E-4 | 1,34E-2 | 5,14E-5 | -2,5E-3 |
| ADP-minerals & metals | kg Sbe | 5,87E-2 | 1,43E-5 | 0E0 | 1,92E-6 | 6,23E-3 | 6E-8 | -4,73E-7 |
| ADP-fossil resources | MJ | 7,98E2 | 1,92E1 | 0E0 | 1,07E0 | 2,3E1 | 1,31E-1 | -3,52E0 |
| Water use ²⁾ | m3e depr. | 7,96E1 | 4,99E-2 | 0E0 | 3,44E-3 | 2,37E0 | 5,88E-3 | -6,78E-2 |

USE OF NATURAL RESOURCES

4) PER = Primary energy resources

DOOR - USE OF NATURAL RESOURCES

| Impact category | Unit | A1-A3 | A4 | C1 | C2 | C3 | C4 | D |
|--------------------------|------|---------|---------|-----|---------|---------|---------|----------|
| Renew. PER as energy | MJ | 3,13E2 | 2,69E-1 | 0E0 | 2,43E-2 | 4,32E-1 | 3,68E-3 | 1,27E-1 |
| Renew. PER as material | MJ | 3,48E2 | 0E0 | 0E0 | 0E0 | -3,13E2 | 0E0 | 0E0 |
| Total use of renew. PER | MJ | 6,61E2 | 2,69E-1 | 0E0 | 2,43E-2 | -3,12E2 | 3,68E-3 | 1,27E-1 |
| Non-re. PER as energy | MJ | 7,05E2 | 3,1E1 | 0E0 | 1,72E0 | 1,38E1 | 2,23E-1 | -9,6E0 |
| Non-re. PER as material | MJ | 4,18E1 | 0E0 | 0E0 | 0E0 | 0E0 | 0E0 | 0E0 |
| Total use of non-re. PER | MJ | 7,47E2 | 3,1E1 | 0E0 | 1,72E0 | 1,38E1 | 2,23E-1 | -9,6E0 |
| Secondary materials | kg | 5,37E-1 | 0E0 | 0E0 | 0E0 | 0E0 | 0E0 | 6,08E-1 |
| Renew. secondary fuels | MJ | 1,7E-2 | 0E0 | 0E0 | 0E0 | 0E0 | 0E0 | 0E0 |
| Non-ren. secondary fuels | MJ | 8,61E-3 | 0E0 | 0E0 | 0E0 | 0E0 | 0E0 | 0E0 |
| Use of net fresh water | m3 | 8,24E-1 | 4,2E-3 | 0E0 | 2,94E-4 | 7,04E-2 | 2,52E-4 | -8,62E-3 |

PORTA-53W - USE OF NATURAL RESOURCES

| Impact category | Unit | A1-A3 | A4 | C1 | C2 | C3 | C4 | D |
|--------------------------|------|---------|---------|-----|---------|---------|---------|----------|
| Renew. PER as energy | MJ | 3,49E2 | 2,59E-1 | 0E0 | 2,3E-2 | 5,58E0 | 3,07E-3 | -4,31E1 |
| Renew. PER as material | MJ | 2,51E2 | 0E0 | 0E0 | 0E0 | -2,14E2 | 0E0 | 0E0 |
| Total use of renew. PER | MJ | 6,01E2 | 2,59E-1 | 0E0 | 2,3E-2 | -2,08E2 | 3,07E-3 | -4,31E1 |
| Non-re. PER as energy | MJ | 1,25E3 | 2,98E1 | 0E0 | 1,63E0 | 5,89E1 | 1,86E-1 | -3,46E2 |
| Non-re. PER as material | MJ | 2,86E1 | 0E0 | 0E0 | 0E0 | 0E0 | 0E0 | 0E0 |
| Total use of non-re. PER | MJ | 1,28E3 | 2,98E1 | 0E0 | 1,63E0 | 5,89E1 | 1,86E-1 | -3,46E2 |
| Secondary materials | kg | 5,29E0 | 0E0 | 0E0 | 0E0 | 0E0 | 0E0 | -3,2E0 |
| Renew. secondary fuels | MJ | 3,51E-3 | 0E0 | 0E0 | 0E0 | 0E0 | 0E0 | 0E0 |
| Non-ren. secondary fuels | MJ | 1,77E-3 | 0E0 | 0E0 | 0E0 | 0E0 | 0E0 | 0E0 |
| Use of net fresh water | m3 | 1,07E0 | 4,04E-3 | 0E0 | 2,79E-4 | 2,44E-1 | 2,1E-4 | -8,87E-2 |

WOODSLIDE - USE OF NATURAL RESOURCES

| Impact category | Unit | A1-A3 | A4 | C1 | C2 | C3 | C4 | D |
|--------------------------|------|---------|---------|-----|---------|---------|---------|----------|
| Renew. PER as energy | MJ | 3,35E2 | 1,67E-1 | 0E0 | 1,51E-2 | 1,91E0 | 2,17E-3 | 4,67E-2 |
| Renew. PER as material | MJ | 1,82E2 | 0E0 | 0E0 | 0E0 | -1,60E2 | 0E0 | 0E0 |
| Total use of renew. PER | MJ | 5,17E2 | 1,67E-1 | 0E0 | 1,51E-2 | -1,58E2 | 2,17E-3 | 4,67E-2 |
| Non-re. PER as energy | MJ | 7,4E2 | 1,92E1 | 0E0 | 1,07E0 | 2,3E1 | 1,31E-1 | -3,52E0 |
| Non-re. PER as material | MJ | 2,69E1 | 0E0 | 0E0 | 0E0 | 0E0 | 0E0 | 0E0 |
| Total use of non-re. PER | MJ | 7,67E2 | 1,92E1 | 0E0 | 1,07E0 | 2,3E1 | 1,31E-1 | -3,52E0 |
| Secondary materials | kg | 2,28E0 | 0E0 | 0E0 | 0E0 | 0E0 | 0E0 | 2,23E-1 |
| Renew. secondary fuels | MJ | 2,95E-2 | 0E0 | 0E0 | 0E0 | 0E0 | 0E0 | 0E0 |
| Non-ren. secondary fuels | MJ | 1,49E-2 | 0E0 | 0E0 | 0E0 | 0E0 | 0E0 | 0E0 |
| Use of net fresh water | m3 | 3,86E0 | 2,6E-3 | 0E0 | 1,83E-4 | 1E-1 | 1,48E-4 | -3,16E-3 |

END OF LIFE – WASTE

DOOR - END OF LIFE – WASTE

| Impact category | Unit | A1-A3 | A4 | C1 | C2 | C3 | C4 | D |
|---------------------|------|---------|---------|-----|---------|-----|---------|----------|
| Hazardous waste | Kg | 3,11E0 | 3,22E-2 | 0E0 | 1,75E-3 | 0E0 | 3,91E-4 | -1,56E-1 |
| Non-hazardous waste | Kg | 1,07E2 | 1,53E0 | 0E0 | 1,2E-1 | 0E0 | 9E-1 | -1,76E0 |
| Radioactive waste | Kg | 3,05E-3 | 2,16E-4 | 0E0 | 1,18E-5 | 0E0 | 1,34E-6 | 7,03E-6 |

PORTA-53W - END OF LIFE – WASTE

| Impact category | Unit | A1-A3 | A4 | C1 | C2 | C3 | C4 | D |
|---------------------|------|---------|---------|-----|---------|-----|---------|----------|
| Hazardous waste | Kg | 1,18E1 | 3,1E-2 | 0E0 | 1,66E-3 | 0E0 | 3,26E-4 | -6,23E0 |
| Non-hazardous waste | Kg | 2,02E2 | 1,48E0 | 0E0 | 1,14E-1 | 0E0 | 7,5E-1 | -5,85E1 |
| Radioactive waste | Kg | 4,15E-3 | 2,08E-4 | 0E0 | 1,12E-5 | 0E0 | 1,12E-6 | -8,34E-4 |

WOODSLIDE - END OF LIFE – WASTE

| Impact category | Unit | A1-A3 | A4 | C1 | C2 | C3 | C4 | D |
|---------------------|------|---------|---------|-----|---------|-----|--------|----------|
| Hazardous waste | Kg | 5,71E0 | 2E-2 | 0E0 | 1,08E-3 | 0E0 | 2,3E-4 | -5,72E-2 |
| Non-hazardous waste | Kg | 1,13E2 | 9,5E-1 | 0E0 | 7,45E-2 | 0E0 | 5,3E-1 | -6,45E-1 |
| Radioactive waste | Kg | 2,77E-3 | 1,34E-4 | 0E0 | 7,32E-6 | 0E0 | 7,9E-7 | 2,58E-6 |

END OF LIFE – OUTPUT FLOWS

DOOR - END OF LIFE – OUTPUT FLOWS

| Impact category | Unit | A1-A3 | A4 | C1 | C2 | C3 | C4 | D |
|--------------------------|------|---------|-----|-----|-----|--------|-----|-----|
| Components for re-use | Kg | 0E0 | 0E0 | 0E0 | 0E0 | 0E0 | 0E0 | 0E0 |
| Materials for recycling | Kg | 1,19E-2 | 0E0 | 0E0 | 0E0 | 9E-1 | 0E0 | 0E0 |
| Materials for energy rec | Kg | 6,45E0 | 0E0 | 0E0 | 0E0 | 4,39E1 | 0E0 | 0E0 |
| Exported energy | MJ | 0E0 | 0E0 | 0E0 | 0E0 | 0E0 | 0E0 | 0E0 |

PORTA-53W - END OF LIFE – OUTPUT FLOWS

| Impact category | Unit | A1-A3 | A4 | C1 | C2 | C3 | C4 | D |
|--------------------------|------|---------|-----|-----|-----|--------|-----|-----|
| Components for re-use | Kg | 0E0 | 0E0 | 0E0 | 0E0 | 0E0 | 0E0 | 0E0 |
| Materials for recycling | Kg | 7,52E-1 | 0E0 | 0E0 | 0E0 | 5,86E0 | 0E0 | 0E0 |
| Materials for energy rec | Kg | 5,46E0 | 0E0 | 0E0 | 0E0 | 3,66E1 | 0E0 | 0E0 |
| Exported energy | MJ | 0E0 | 0E0 | 0E0 | 0E0 | 0E0 | 0E0 | 0E0 |

WOODSLIDE - END OF LIFE – OUTPUT FLOWS

| Impact category | Unit | A1-A3 | A4 | C1 | C2 | C3 | C4 | D |
|--------------------------|------|---------|-----|-----|-----|--------|-----|-----|
| Components for re-use | Kg | 0E0 | 0E0 | 0E0 | 0E0 | 0E0 | 0E0 | 0E0 |
| Materials for recycling | Kg | 2,61E-1 | 0E0 | 0E0 | 0E0 | 1,87E0 | 0E0 | 0E0 |
| Materials for energy rec | Kg | 3,73E0 | 0E0 | 0E0 | 0E0 | 2,59E1 | 0E0 | 0E0 |
| Exported energy | MJ | 0E0 | 0E0 | 0E0 | 0E0 | 0E0 | 0E0 | 0E0 |

KEY INFORMATION TABLE (RTS) – KEY INFORMATION PER KG OF PRODUCT

5) Biog. C in product = Biogenic carbon content in product

DOOR - KEY INFORMATION TABLE (RTS) – KEY INFORMATION PER KG OF PRODUCT

| Impact category | Unit | A1-A3 | A4 | C1 | C2 | C3 | C4 | D |
|-----------------------|-----------|---------|---------|-----|---------|---------|---------|----------|
| GWP - total | kg CO2e | 6,24E-1 | 4,94E-2 | 0E0 | 2,5E-3 | 1,22E0 | 2,09E-4 | -2,82E-2 |
| ADP-minerals & metals | kg Sbe | 1,09E-3 | 5,03E-7 | 0E0 | 6,76E-8 | 6,1E-7 | 2,23E-9 | -2,82E-8 |
| ADP-fossil | MJ | 1,69E1 | 6,77E-1 | 0E0 | 3,77E-2 | 3,02E-1 | 4,88E-3 | -2,1E-1 |
| Water use | m3e depr. | 1,12E0 | 1,76E-3 | 0E0 | 1,21E-4 | 3,7E-2 | 2,18E-4 | -4,04E-3 |
| Secondary materials | kg | 1,18E-2 | 0E0 | 0E0 | 0E0 | 0E0 | 0E0 | 1,33E-2 |
| Biog. C in product | kg C | 9.98 | N/A | N/A | N/A | N/A | N/A | N/A |
| Biog. C in packaging | kg C | 0.85 | N/A | N/A | N/A | N/A | N/A | N/A |

PORTA-53W - KEY INFORMATION TABLE (RTS) – KEY INFORMATION PER KG OF PRODUCT

| Impact category | Unit | A1-A3 | A4 | C1 | C2 | C3 | C4 | D |
|-----------------------|-----------|---------|---------|-----|---------|---------|---------|----------|
| GWP - total | kg CO2e | 1,93E0 | 5,03E-2 | 0E0 | 2,5E-3 | 1,18E0 | 1,84E-4 | -7,47E-1 |
| ADP-minerals & metals | kg Sbe | 1,33E-3 | 5,12E-7 | 0E0 | 6,76E-8 | 4,53E-4 | 1,96E-9 | 1,09E-4 |
| ADP-fossil | MJ | 2,99E1 | 6,89E-1 | 0E0 | 3,77E-2 | 1,36E0 | 4,3E-3 | -8E0 |
| Water use | m3e depr. | 8,43E-1 | 1,79E-3 | 0E0 | 1,21E-4 | 1,33E-1 | 1,92E-4 | -1,05E-1 |
| Secondary materials | kg | 1,22E-1 | 0E0 | 0E0 | 0E0 | 0E0 | 0E0 | -7,39E-2 |
| Biog. C in product | kg C | 6.7 | N/A | N/A | N/A | N/A | N/A | N/A |
| Biog. C in packaging | kg C | 0.88 | N/A | N/A | N/A | N/A | N/A | N/A |

WOODSLIDE - KEY INFORMATION TABLE (RTS) – KEY INFORMATION PER KG OF PRODUCT

| Impact category | Unit | A1-A3 | A4 | C1 | C2 | C3 | C4 | D |
|-----------------------|-----------|---------|---------|-----|---------|---------|---------|----------|
| GWP - total | kg CO2e | 1,36E0 | 4,94E-2 | 0E0 | 2,5E-3 | 1,21E0 | 1,99E-4 | -1,67E-2 |
| ADP-minerals & metals | kg Sbe | 2,07E-3 | 5,03E-7 | 0E0 | 6,76E-8 | 2,2E-4 | 2,12E-9 | -1,67E-8 |
| ADP-fossil | MJ | 2,82E1 | 6,77E-1 | 0E0 | 3,77E-2 | 8,11E-1 | 4,63E-3 | -1,24E-1 |
| Water use | m3e depr. | 2,81E0 | 1,76E-3 | 0E0 | 1,21E-4 | 8,38E-2 | 2,07E-4 | -2,39E-3 |
| Secondary materials | kg | 8,04E-2 | 0E0 | 0E0 | 0E0 | 0E0 | 0E0 | 7,87E-3 |
| Biog. C in product | kg C | 7.69 | N/A | N/A | N/A | N/A | N/A | N/A |
| Biog. C in packaging | kg C | 0.54 | N/A | N/A | N/A | N/A | N/A | N/A |

SCENARIO DOCUMENTATION

MANUFACTURING ENERGY SCENARIO DOCUMENTATION

| Scenario parameter | Value |
|--|---|
| Electricity data source and quality | Market for electricity, high voltage (Reference product: electricity, high voltage) Estonia, Ecoinvent 3,6, year: 2020 |
| Electricity CO ₂ e / kWh | 0.84 kg CO ₂ /kWh |
| Heating data source and quality (firewood) | Heat production, mixed logs, at wood heater 6kw, state-of-the-art 2014 (Reference product: heat, central or small-scale, other than natural gas) Global, Ecoinvent 3,6, year: 2020 |
| Heating (firewood) CO ₂ e / kWh | 0.0184 kg CO ₂ /MJ |
| Heating data source and quality (gas) | Heat production, natural gas, at industrial furnace >100kw (Reference product: heat, district or industrial, natural gas) Europe, Ecoinvent 3,6, year: 2020 |
| Heating (gas) CO ₂ e / kWh | 0.0687 kg CO ₂ /kWh |

TRANSPORT SCENARIO DOCUMENTATION (A4)

| Scenario parameter | |
|--|---------|
| A4 specific transport CO ₂ e emissions, kg CO ₂ e / tkm, lorry | 0.090 |
| A4 specific transport CO ₂ e emissions, kg CO ₂ e / tkm, ferry | 0.011 |
| A4 average transport distance, lorry, km | 175 |
| A4 average transport distance, ferry, km | 285 |
| A4 Capacity utilization (including empty return) % | 75 |
| A4 Bulk density of transported products, kg / m ² | 28 - 46 |
| A4 Volume capacity utilization factor | 1 |



END OF LIFE SCENARIO DOCUMENTATION

| Scenario parameter | DOOR | PORTA-53W | WOODSLIDE |
|--|-------|-----------|-----------|
| Collection process - kg collected separately | 45.71 | 43.24 | 28.33 |
| Collection process - kg collected with mixed waste | 0.00 | 0.00 | 0.00 |
| Recovery process - kg for re-use | 0.00 | 0.00 | 0.00 |
| Recovery process - kg for recycling | 0.90 | 5.86 | 1.86 |
| Recovery process - kg for energy recovery | 43.91 | 36.64 | 25.93 |
| Disposal (total) - kg for final disposition | 0.90 | 0.75 | 0.53 |

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ABOUT THE MANUFACTURER

All our products are manufactured according to the customer's individual requirements. As a result, our products fit perfectly in the designated interior space and comply with all requirements of the building. Structo's products are practical, of high quality and stylish.

Not only do we manufacture products that look good, we also make them practical, long lasting and easy to handle. It is our greatest aim to provide all present and future customers with the satisfaction that can be guaranteed by our extensive experience and professional expertise.

Structo's products are characterised by innovative ideas and immaculate workmanship. Our constant product development makes sure you will get the best solutions for even your most complicated requirements.

EPD AUTHOR AND CONTRIBUTORS

| | |
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| EPD program | The Building Information Foundation RTS sr |
| Background data | This EPD is based on Ecoinvent 3.6 and One Click LCA databases. |
| LCA software | One Click LCA |



ANNEX 1 : ENVIRONMENTAL IMPACTS – EN 15804+A1, CML / ISO 21930

DOOR - ANNEX 1 : ENVIRONMENTAL IMPACTS – EN 15804+A1, CML / ISO 21930

| Impact category | Unit | A1-A3 | A4 | C1 | C2 | C3 | C4 | D |
|----------------------|-----------|---------|---------|-----|---------|---------|---------|----------|
| Global Warming Pot. | kg CO2e | 5,2E1 | 2,24E0 | 0E0 | 1,13E-1 | 2,28E1 | 9,3E-3 | -1,24E0 |
| Ozone depletion Pot. | kg CFC11e | 5,57E-6 | 3,81E-7 | 0E0 | 2,07E-8 | 1,68E-7 | 2,34E-9 | -3,06E-8 |
| Acidification | kg SO2e | 2,52E-1 | 4,07E-2 | 0E0 | 2,29E-4 | 9,65E-3 | 6,44E-4 | -3,94E-3 |
| Eutrophication | kg PO4 3e | 9,8E-2 | 4,72E-3 | 0E0 | 4,71E-5 | 1,27E-2 | 1,31E-5 | -2,18E-3 |
| POCP (“smog”) | kg C2H4e | 1,49E-2 | 1,1E-3 | 0E0 | 1,51E-5 | 2,76E-4 | 2,43E-6 | -1,02E-3 |
| ADP-elements | kg Sbe | 5E-2 | 2,3E-5 | 0E0 | 3,09E-6 | 2,79E-5 | 1,02E-7 | -1,29E-6 |
| ADP-fossil | MJ | 7,75E2 | 3,1E1 | 0E0 | 1,72E0 | 1,38E1 | 2,23E-1 | -9,6E0 |

PORTA-53W - ANNEX 1 : ENVIRONMENTAL IMPACTS – EN 15804+A1, CML / ISO 21930

| Impact category | Unit | A1-A3 | A4 | C1 | C2 | C3 | C4 | D |
|----------------------|-----------|---------|---------|-----|---------|---------|---------|----------|
| Global Warming Pot. | kg CO2e | 9,78E1 | 2,16E0 | 0E0 | 1,07E-1 | 2,34E1 | 7,75E-3 | -3,08E1 |
| Ozone depletion Pot. | kg CFC11e | 7,21E-6 | 3,66E-7 | 0E0 | 1,95E-8 | 4,48E-7 | 1,95E-9 | -1,36E-6 |
| Acidification | kg SO2e | 5,02E-1 | 3,92E-2 | 0E0 | 2,17E-4 | 3,22E-2 | 5,37E-4 | -1,49E-1 |
| Eutrophication | kg PO4 3e | 1,84E-1 | 4,54E-3 | 0E0 | 4,45E-5 | 1,9E-2 | 1,09E-5 | -5,59E-2 |
| POCP (“smog”) | kg C2H4e | 2,88E-2 | 1,06E-3 | 0E0 | 1,43E-5 | 1,05E-3 | 2,02E-6 | -1,07E-2 |
| ADP-elements | kg Sbe | 5,75E-2 | 2,21E-5 | 0E0 | 2,92E-6 | 1,96E-2 | 8,49E-8 | 4,72E-3 |
| ADP-fossil | MJ | 1,29E3 | 2,98E1 | 0E0 | 1,63E0 | 5,89E1 | 1,86E-1 | -3,46E2 |

WOODSLIDE - ANNEX 1 : ENVIRONMENTAL IMPACTS – EN 15804+A1, CML / ISO 21930

| Impact category | Unit | A1-A3 | A4 | C1 | C2 | C3 | C4 | D |
|----------------------|-----------|---------|---------|-----|---------|---------|---------|----------|
| Global Warming Pot. | kg CO2e | 5,72E1 | 1,39E0 | 0E0 | 7,02E-2 | 1,48E1 | 5,48E-3 | -4,54E-1 |
| Ozone depletion Pot. | kg CFC11e | 6,54E-6 | 2,36E-7 | 0E0 | 1,28E-8 | 1,94E-7 | 1,38E-9 | -1,12E-8 |
| Acidification | kg SO2e | 3,05E-1 | 2,52E-2 | 0E0 | 1,42E-4 | 1,34E-2 | 3,79E-4 | -1,44E-3 |
| Eutrophication | kg PO4 3e | 1,03E-1 | 2,93E-3 | 0E0 | 2,92E-5 | 1,02E-2 | 7,73E-6 | -7,99E-4 |
| POCP (“smog”) | kg C2H4e | 1,85E-2 | 6,84E-4 | 0E0 | 9,35E-6 | 4,22E-4 | 1,43E-6 | -3,73E-4 |
| ADP-elements | kg Sbe | 5,87E-2 | 1,43E-5 | 0E0 | 1,92E-6 | 6,23E-3 | 6E-8 | -4,73E-7 |
| ADP-fossil | MJ | 7,98E2 | 1,92E1 | 0E0 | 1,07E0 | 2,3E1 | 1,31E-1 | -3,52E0 |

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