

# Environmental Product Declaration



In accordance with ISO 14025 and EN 15804:2012+A2:2019 for:

## Swedish sawn and planed wood product

from

**Swedish Wood**



|                          |   |
|--------------------------|---|
| Programme:               | The International EPD® System, <a href="http://www.environdec.com">www.environdec.com</a> |
| Programme operator:      | EPD International AB  |
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*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)*



## General information

### Programme information

|                   |   |
|-------------------|---|
| <b>Programme:</b> | The International EPD® System                                       |
| <b>Address:</b>   | EPD International AB<br>Box 210 60<br>SE-100 31 Stockholm<br>Sweden |
| <b>Website:</b>   | <a href="http://www.environdec.com">www.environdec.com</a>          |
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|   |
|---|
| CEN standard EN 15804 serves as the Core Product Category Rules (PCR)   |
| Product category rules (PCR): <i>PCR 2019:14, v1.1. Construction products (EN 15804:A2). Sub-PCR-006, Wood and wood-based products for use in construction (EN 16485). UN CPC 311</i>   |
| PCR review was conducted by: <i>The Technical Committee of the International EPD® System. See <a href="http://www.environdec.com/TC">www.environdec.com/TC</a> for a list of members. Review chair: Claudia A. Peña, University of Concepción, Chile. The review panel may be contacted via the Secretariat <a href="http://www.environdec.com/contact">www.environdec.com/contact</a>.</i> |
| Independent third-party verification of the declaration and data, according to ISO 14025:2006:<br><input type="checkbox"/> EPD process certification <input checked="" type="checkbox"/> EPD verification   |
| Third party verifier: <i>Martin Erlandsson, IVL Svenska miljöinstitutet.</i>  |
| Approved by: The International EPD® System  |
| Procedure for follow-up of data during EPD validity involves third party verifier:<br><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No   |

The EPD owner has the sole ownership, liability, and responsibility for the EPD.

EPDs within the same product category but from different programmes may not be comparable. EPDs of construction products may not be comparable if they do not comply with EN 15804. For further information about comparability, see EN 15804 and ISO 14025.

## Company information

Owner of the EPD: Swedish wood

Contact: Patrice Godonou

Description of the organisation:

This environmental product declaration presents the average performance of sawn and planed wood products consisting of Swedish spruce or pine by members of Swedish Wood. Swedish wood is a department within The Swedish Forest Industries Federation and supported by the Swedish sawmill and glulam industries. Swedish Wood spreads knowledge provides inspiration and encourages development relating to wood, wood products and wood construction.

Following companies has contributed with data and enabled this branch EPD: Derome, JGA, Martinsons, Sandåsa Timber, SCA, Valbo trä, Varberg Timber and Vida plants.

Name and location of production site(s):

This study covers 25 % of the total planed wood products in Sweden. Input are collected from 16 planing mills and cover the production of 2 200 000 m<sup>3</sup> planed wood product. Data to produce planed wood is collected from a representative selection of planing mills in Sweden and weighted to an average.

## Product information

Product name: Swedish sawn and planed wood product of spruce or pine.

Product description: Planed wood products is produced in Sweden by members of Swedish Wood. The raw material which is used in the production is Swedish sawn dried timber of spruce or pine, with an average density of 489 kg/m<sup>3</sup> and a moisture content of 16 %. The average density of spruce is 469 kg/m<sup>3</sup> and 518 kg/m<sup>3</sup> for pine. The moisture content for the dried wood is about 12-18%. Around 59 % of the planed wood product are spruce and 41 % are pine.

The planed wood product can be produced in manufacturing facilities with both sawmill and planing mill in the same location (combination plant) and in manufacturing facilities working solely with planing (Standalone planing mill). Standalone planing mill purchases all sawn timber from several sawmills localized at various transport distances. The results in this EPD is a presented for an average combination plant and for an average standalone planing mill.

UN CPC code: 311

## LCA information

Functional unit / declared unit:

1m<sup>3</sup> Swedish planed wood product of spruce (59%) and pine (41%) with an average moisture ratio of 16 %

Conversion factor:

489 kg/m<sup>3</sup>

Time representativeness:

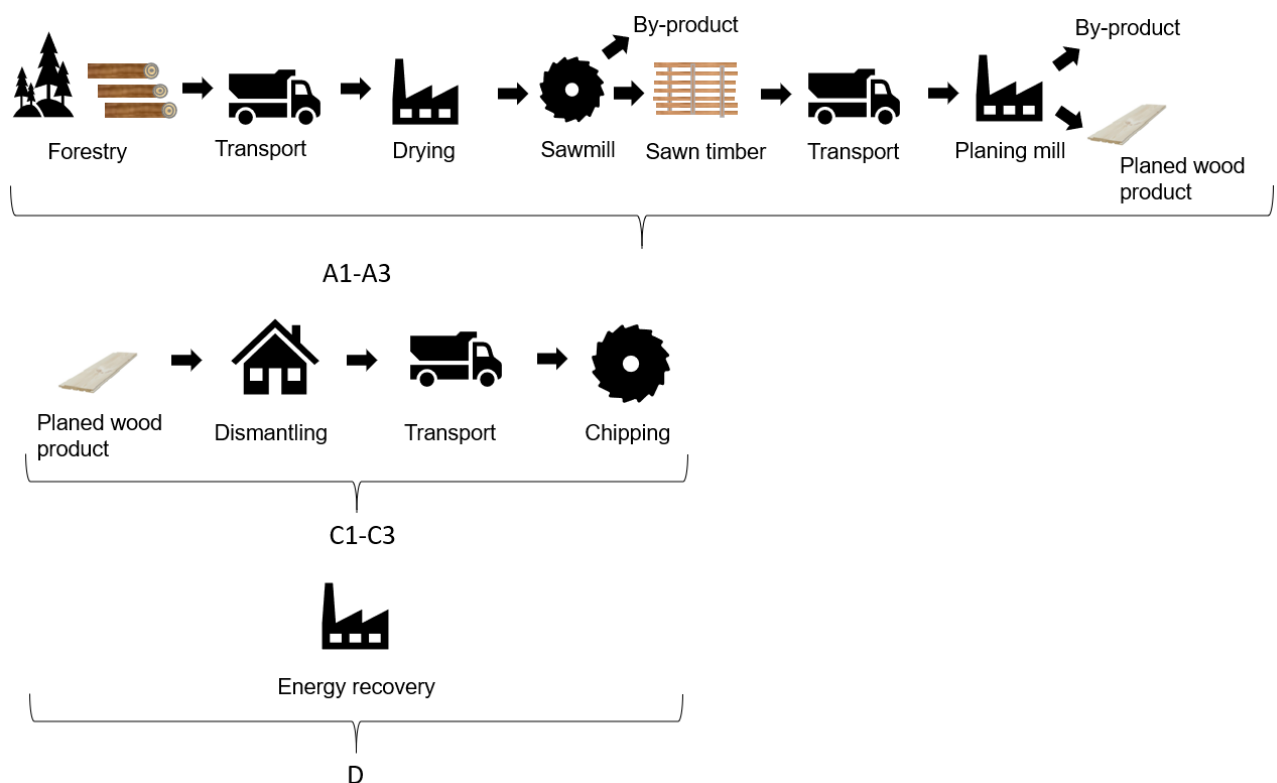
The data represents the year 2019

Database(s) and LCA software used: SimaPro 9.1.0.7 and Ecoinvent 3.6

Description of system boundaries:

The system boundaries are described in the system diagram and in the table in the section additional LCA information. The environmental Product Declaration (EPD) shows the environmental performance of the product through its life cycle stages from cradle to gate to end of life. The life cycle stages are product stage (A1-A3), construction process stage (A4-A5), end-of-life stage (C1-C4) and Benefits and loads beyond the system boundary (D).

System diagram:



Allocations

According to EN 15804, all by-products must take their environmental responsibility upstream and inherent properties cannot be allocated away. At the planing mills (Combination plant and Standalone planing mill) economic and energy allocation are used. The economic allocation is based on the relative revenues from the by-products and the planed wood products. Economic allocation is applied for all activities in the planing mills.

| Included   | Excluded  |
|--|---|
| <p><b>Production A1-A3</b></p> <ul style="list-style-type: none"> <li>• Production of all consumed raw materials and goods, like sawn timber, chemicals, oil etc.</li> <li>• Energy and fuels</li> <li>• Transports of consumed goods to planing mill.</li> <li>• Production processes.</li> <li>• Production and transport of all packaging and packaging materials for the planed goods</li> <li>• Management of the waste, by-products and waste produced during production.</li> <li>• Production of electricity and district heating</li> </ul> | <p><b>Production A1-A3</b></p> <ul style="list-style-type: none"> <li>• Infrastructure (building, roads and parking).</li> <li>• Raw materials to produce chemicals consumed in smaller quantities are excluded.</li> <li>• Personnel transport outside the planing mills area is not included.</li> <li>• Personnel space/office or purchase of tools or workwear are not included.</li> </ul> <p><b>A4-A5 Transport to construction site and construction</b></p> |
| <p><b>C1-C4 End of life stage</b></p> <ul style="list-style-type: none"> <li>• Dismantling of planed wood products</li> <li>• Transport to incineration facility</li> <li>• Chipping</li> </ul>  | <p><b>B1-B7 Use</b></p>   |
| <p><b>D Benefits and loads beyond the system boundary</b></p> <ul style="list-style-type: none"> <li>• Energy recovery where 95% of the sawn dried timber is incinerated</li> </ul>  |   |

More information:

The environmental impact from Standalone planing mill, working solely with planing is in general higher than for Combination plants due to the additional transportation of the sawn wood products. The average transport distance between sawmill and standalone planing mill is 171 km. The difference in environmental performance between combination plants and standalone planing mills is mostly due to the additional transport of the sawn timber from the sawmill to the standalone planing mill. The standalone planing mills also has a higher energy and fuel consumption and use more plastic packaging than the combination plants.

All wood is assumed to be harvested sustainably and the wood in the studied system thus fulfills the criterium of biogenic carbon neutrality over its life cycle. Forestry takes approximately 100 years in Sweden from seed to harvest. The products biogenic carbon storage is 773kg CO<sub>2</sub>/m<sup>3</sup> during the life cycle.

Module D consist of energy recovery which is most common way for waste treatment in Sweden. However, it is possible to reuse certain wooden goods. By reusing wooden goods, the GHG-GWP can be reduced by 28.1 kgCO<sub>2</sub>e/m<sup>3</sup>

## Additional LCA information

LCA practitioners: Anna Pantze, Ida Adolfsson and Emanuel Lindbäck at Tyréns AB

Modules declared, geographical scope, share of specific data (in GWP-GHG indicator) and data variation:

|                      | Product stage   |           | Construction process stage |           |                           | Use stage |             |        |             |               |                        |                       | End of life stage          |           |                  |          | Resource recovery stage            |    |    |
|----------------------|---|-----------|----------------------------|-----------|---------------------------|-----------|-------------|--------|-------------|---------------|------------------------|-----------------------|----------------------------|-----------|------------------|----------|------------------------------------|----|----|
|                      | Raw material supply   | Transport | Manufacturing              | Transport | Construction installation | Use       | Maintenance | Repair | Replacement | Refurbishment | Operational energy use | Operational water use | De-construction demolition | Transport | Waste processing | Disposal | Reuse-Recovery-Recycling-potential |    |    |
| Module               | A1  | A2        | A3                         | A4        | A5                        | B1        | B2          | B3     | B4          | B5            | B6                     | B7                    | C1                         | C2        | C3               | C4       | D                                  |    |    |
| Modules declared     | X   | X         | X                          | ND        | ND                        | ND        | ND          | ND     | ND          | ND            | ND                     | ND                    | X                          | X         | X                | X        | X                                  |    |    |
| Geography            | SE  | SE        | SE                         | ND        | ND                        | ND        | ND          | ND     | ND          | ND            | ND                     | ND                    | SE                         | SE        | SE               | SE       | SE                                 |    |    |
| Specific data used   | >90%  |           |                            |           |                           | ND        | ND          | ND     | ND          | ND            | ND                     | ND                    | ND                         | ND        | ND               | ND       | ND                                 | ND |    |
| Variation – products | 0%  |           |                            |           |                           | ND        | ND          | ND     | ND          | ND            | ND                     | ND                    | ND                         | ND        | ND               | ND       | ND                                 | ND | ND |
| Variation – sites    | Combination plant -28 % to +46%<br>Standalone planing mill -13 % to +65 % |           |                            |           |                           | ND        | ND          | ND     | ND          | ND            | ND                     | ND                    | ND                         | ND        | ND               | ND       | ND                                 | ND | ND |

ND = Not declared

#### Variation – sites

The EPD is sector EPD which is based on 16 planing mills in Sweden. The variation between different production sites depends mostly on the transport distance of the raw material. Combination plants has a variation between manufacturing sites between -28 % and + 46 % and standalone planing mills has a variation between -13 % and +65 %.

## Content information

For 1 m<sup>3</sup> sawn and planed wood product produced in a combination plant (sawmill and planing mill)

| Product components  | Weight, kg | Post-consumer material, weight-% | Renewable material, weight-% |
|---------------------|------------|----------------------------------|------------------------------|
| Wood                | 489        | 100%                             | 100%                         |
| TOTAL               | 489        | 100%                             | 100%                         |
| Packaging materials | Weight, kg | Weight-% (versus the product)    |                              |
| Plastic             | 0.89       | 0.18 %                           |                              |
| Metal               | 0.001      | < 0.001 %                        |                              |
| Wood                | 1.37       | 0.28 %                           |                              |
| TOTAL               | 2.26       | 0.46 %                           |                              |

| Dangerous substances from the candidate list of SVHC for Authorisation | EC No. | CAS No. | Weight-% per functional or declared unit |
|--|--------|---------|--|
| Total  | 0      | 0       | 0%                                       |

For 1 m<sup>3</sup> sawn and planed wood product produced in standalone planing mill

| Product components  | Weight, kg | Post-consumer material, weight-% | Renewable material, weight-% |
|---------------------|------------|----------------------------------|------------------------------|
| Wood                | 489        | 100%                             | 100%                         |
| TOTAL               | 489        | 100%                             | 100%                         |
| Packaging materials | Weight, kg | Weight-% (versus the product)    |                              |
| Plastic             | 0.59       | 0.12 %                           |                              |
| Metal               | 0.014      | 0.003 %                          |                              |
| Wood                | 2.21       | 0.45 %                           |                              |
| TOTAL               | 2.81       | 0.57 %                           |                              |

| Dangerous substances from the candidate list of SVHC for Authorisation | EC No. | CAS No. | Weight-% per functional or declared unit |
|--|--------|---------|--|
| Total  | 0      | 0       | 0%                                       |

## Environmental Information

### Combination plant (Sawmill and planing mill)

#### Potential environmental impact – 1 m<sup>3</sup> sawn and planed wood product produced in combination plant (sawmill and planing mill)

| Indicator              | Unit  | Tot. A1-A3    | C1           | C2           | C3           | C4           | Tot. C1-C4   | D             |
|------------------------|---|---------------|--------------|--------------|--------------|--------------|--------------|---------------|
| GWP-fossil             | kg CO <sub>2</sub> eq.  | 2.96<br>E+01  | 2.45<br>E-01 | 6.66<br>E+00 | 9.49<br>E-01 | 0.00<br>E+00 | 7.86<br>E+00 | -1.15<br>E+02 |
| GWP-biogenic           | kg CO <sub>2</sub> eq.  | -7.73<br>E+02 | 0.00<br>E+00 | 0.00<br>E+00 | 7.73<br>E+02 | 0.00<br>E+00 | 7.73<br>E+02 | 0.00<br>E+00  |
| GWP-luluc              | kg CO <sub>2</sub> eq.  | 2.71<br>E-01  | 1.93<br>E-05 | 2.74<br>E-03 | 7.48<br>E-05 | 0.00<br>E+00 | 2.83<br>E-03 | -1.08<br>E+00 |
| GWP-total              | kg CO <sub>2</sub> eq.  | -7.43<br>E+02 | 2.45<br>E-01 | 6.67<br>E+00 | 7.74<br>E+02 | 0.00<br>E+00 | 7.81<br>E+02 | -1.16<br>E+02 |
| ODP                    | kg CFC 11 eq.   | 8.89<br>E-06  | 5.30<br>E-08 | 1.48<br>E-06 | 2.05<br>E-07 | 0.00<br>E+00 | 1.74<br>E-06 | -7.40<br>E-06 |
| AP                     | mol H <sup>+</sup> eq.  | 2.76<br>E-01  | 2.57<br>E-03 | 2.02<br>E-02 | 9.93<br>E-03 | 0.00<br>E+00 | 3.27<br>E-02 | -3.84<br>E-01 |
| EP-freshwater          | kg PO <sub>4</sub> <sup>3-</sup> eq.  | 3.75<br>E-03  | 8.81<br>E-06 | 5.68<br>E-04 | 3.41<br>E-05 | 0.00<br>E+00 | 6.11<br>E-04 | -1.87<br>E-02 |
| EP-marine              | kg N eq.  | 8.87<br>E-02  | 1.13<br>E-03 | 4.28<br>E-03 | 4.39<br>E-03 | 0.00<br>E+00 | 9.80<br>E-03 | -2.03<br>E-01 |
| EP-terrestrial         | mol N eq.   | 9.70<br>E-01  | 1.24<br>E-02 | 4.68<br>E-02 | 4.81<br>E-02 | 0.00<br>E+00 | 1.07<br>E-01 | -1.22<br>E+00 |
| POCP                   | kg NMVOC eq.  | 2.96<br>E-01  | 3.42<br>E-03 | 1.78<br>E-02 | 1.32<br>E-02 | 0.00<br>E+00 | 3.45<br>E-02 | -6.35<br>E-01 |
| ADP-minerals & metals* | kg Sb eq.   | 1.90<br>E-04  | 3.76<br>E-07 | 2.15<br>E-04 | 1.46<br>E-06 | 0.00<br>E+00 | 2.17<br>E-04 | -2.64<br>E-04 |
| ADP-fossil*            | MJ  | 8.66<br>E+02  | 3.38<br>E+00 | 9.99<br>E+01 | 1.31<br>E+01 | 0.00<br>E+00 | 1.16<br>E+02 | -2.30<br>E+03 |
| WDP                    | m <sup>3</sup>  | 8.05<br>E+00  | 4.52<br>E-03 | 3.33<br>E-01 | 1.75<br>E-02 | 0.00<br>E+00 | 3.55<br>E-01 | -2.61<br>E+01 |
| Acronyms               | GWP-fossil = Global Warming Potential fossil fuels; GWP-biogenic = Global Warming Potential biogenic; GWP-luluc = Global Warming Potential land use and land use change; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential, Accumulated Exceedance; EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption |               |              |              |              |              |              |               |

\* Disclaimer: The results of this environmental impact indicator shall be used with care as the uncertainties of these results are high or as there is limited experience with the indicator.



## Potential environmental impact – 1 m<sup>3</sup> sawn and planed wood product produced in combination plant (sawmill and planing mill)

| Results per functional unit   |                        |              |              |              |              |              |              |
|---|------------------------|--------------|--------------|--------------|--------------|--------------|--------------|
| Indicator   | Unit                   | Tot.A1-A3    | C1           | C2           | C3           | C4           | Tot. C1-C4   |
| GWP-GHG <sup>1</sup>  | kg CO <sub>2</sub> eq. | 2.96<br>E+01 | 2.42<br>E-01 | 6.60<br>E+00 | 9.39<br>E-01 | 0.00<br>E+00 | 7.78<br>E+00 |
| <i>Additional voluntary indicators e.g. the voluntary indicators from EN 15804 or the global indicators according to ISO 21930:2017</i> |                        |              |              |              |              |              |              |

## Use of resources – 1 m<sup>3</sup> sawn and planed wood product produced in combination plant (sawmill and planing mill)

| Results per functional unit |  |              |              |              |              |              |              |               |
|-----------------------------|--|--------------|--------------|--------------|--------------|--------------|--------------|---------------|
| Indicator                   | Unit   | Tot. A1-A3   | C1           | C2           | C3           | C4           | Tot. C1-C4   | D             |
| PERE                        | MJ   | 2.52<br>E+02 | 1.83<br>E-02 | 1.65<br>E+00 | 7.07<br>E-02 | 0.00<br>E+00 | 1.74<br>E+00 | 1.34<br>E+03  |
| PERM                        | MJ   | 8.10<br>E+03 | 0.00<br>E+00 | 0.00<br>E+00 | 0.00<br>E+00 | 0.00<br>E+00 | 0.00<br>E+00 | 0.00<br>E+00  |
| PERT                        | MJ   | 8.35<br>E+03 | 1.83<br>E-02 | 1.65<br>E+00 | 7.07<br>E-02 | 0.00<br>E+00 | 1.74<br>E+00 | 1.34<br>E+03  |
| PENRE                       | MJ   | 9.00<br>E+02 | 3.58<br>E+00 | 1.0<br>6E+02 | 1.39<br>E+01 | 0.00<br>E+00 | 1.23<br>E+02 | -2.33<br>E+03 |
| PENRM                       | MJ   | 0.00<br>E+00 | 0.00<br>E+00 | 0.00<br>E+00 | 0.00<br>E+00 | 0.00<br>E+00 | 0.00<br>E+00 | 0.00<br>E+00  |
| PENRT                       | MJ   | 9.00<br>E+02 | 3.58<br>E+00 | 1.06<br>E+02 | 1.39<br>E+01 | 0.00<br>E+00 | 1.23<br>E+02 | -2.33<br>E+03 |
| SM                          | kg   | 0.00<br>E+00 | 0.00<br>E+00 | 0.00<br>E+00 | 0.00<br>E+00 | 0.00<br>E+00 | 0.00<br>E+00 | 0.00<br>E+00  |
| RSF                         | MJ   | 0.00<br>E+00 | 0.00<br>E+00 | 0.00<br>E+00 | 0.00<br>E+00 | 0.00<br>E+00 | 0.00<br>E+00 | 0.00<br>E+00  |
| NRSF                        | MJ   | 0.00<br>E+00 | 0.00<br>E+00 | 0.00<br>E+00 | 0.00<br>E+00 | 0.00<br>E+00 | 0.00<br>E+00 | 0.00<br>E+00  |
| FW                          | m <sup>3</sup>   | 2.98<br>E-02 | 0.00<br>E+00 | 0.00<br>E+00 | 0.00<br>E+00 | 0.00<br>E+00 | 0.00<br>E+00 | 0.00<br>E+00  |
| Acronyms                    | 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 re-sources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water |              |              |              |              |              |              |               |

<sup>1</sup> The indicator includes all greenhouse gases included in GWP-total but excludes biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product. This indicator is thus equal to the GWP indicator originally defined in EN 15804:2012+A1:2013.

## Waste production and output flows

### Waste production – 1 m3 sawn and planed wood product produced in combination plant (sawmill and planing mill)

| Results per functional unit  |      |              |              |              |              |              |              |               |
|------------------------------|------|--------------|--------------|--------------|--------------|--------------|--------------|---------------|
| Indicator                    | Unit | Tot. A1-A3   | C1           | C2           | C3           | C4           | Tot. C1-C4   | D             |
| Hazardous waste disposed     | kg   | 1.17<br>E-03 | 9.19<br>E-06 | 2.60<br>E-04 | 3.56<br>E-05 | 0.00<br>E+00 | 3.05<br>E-04 | -4.08<br>E-04 |
| Non-hazardous waste disposed | kg   | 1.15<br>E+01 | 4.09<br>E-03 | 5.76<br>E+00 | 1.58<br>E-02 | 0.00<br>E+00 | 5.78<br>E+00 | -8.25<br>E+00 |
| Radioactive waste disposed   | kg   | 8.84<br>E-03 | 2.34<br>E-05 | 6.73<br>E-04 | 9.07<br>E-05 | 0.00<br>E+00 | 7.87<br>E-04 | -3.04<br>E-02 |

### Output flows – 1 m3 sawn and planed wood product produced in combination plant (sawmill and planing mill)

| Results per functional unit   |      |              |              |              |              |              |              |              |
|-------------------------------|------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| Indicator                     | Unit | Tot. A1-A3   | C1           | C2           | C3           | C4           | Tot. C1-C4   | D            |
| Components for re-use         | kg   | 0.00<br>E+00 | 0.00<br>E+00 | 0.00<br>E+00 | 0.00<br>E+00 | 0.00<br>E+00 | 0.00<br>E+00 | 0.00<br>E+00 |
| Material for recycling        | kg   | 2.78<br>E+00 | 0.00<br>E+00 | 0.00<br>E+00 | 0.00<br>E+00 | 0.00<br>E+00 | 0.00<br>E+00 | 0.00<br>E+00 |
| Materials for energy recovery | kg   | 1.24<br>E+00 | 0.00<br>E+00 | 0.00<br>E+00 | 4.89<br>E+02 | 0.00<br>E+00 | 4.89<br>E+02 | 0.00<br>E+00 |
| Exported energy. electricity  | MJ   | 0.00<br>E+00 | 0.00<br>E+00 | 0.00<br>E+00 | 0.00<br>E+00 | 0.00<br>E+00 | 0.00<br>E+00 | 0.00<br>E+00 |
| Exported energy. thermal      | MJ   | 5.63<br>E+01 | 0.00<br>E+00 | 0.00<br>E+00 | 0.00<br>E+00 | 0.00<br>E+00 | 0.00<br>E+00 | 0.00<br>E+00 |

### Information on biogenic carbon content – 1 m3 sawn and planed wood product produced in combination plant (sawmill and planing mill)

| Results per functional unit          |      |          |
|--------------------------------------|------|----------|
| BIOTIC CARBON CONTENT                | Unit | QUANTITY |
| Biogenic carbon content in product   | kg C | 211      |
| Biogenic carbon content in packaging | kg C | 0,7      |

## Environmental Information

### Standalone planing mill

#### Potential environmental impact – 1 m<sup>3</sup> sawn and planed wood product produced in standalone planing mill

| Indicator              | Unit  | Tot. A1-A3    | C1           | C2           | C3           | C4           | Tot. C1-C4   | D             |
|------------------------|---|---------------|--------------|--------------|--------------|--------------|--------------|---------------|
| GWP-fossil             | kg CO <sub>2</sub> eq.  | 4.89<br>E+01  | 2.45<br>E-01 | 6.66<br>E+00 | 9.49<br>E-01 | 0.00<br>E+00 | 7.86<br>E+00 | -1.15<br>E+02 |
| GWP-biogenic           | kg CO <sub>2</sub> eq.  | -7.73<br>E+02 | 0.00<br>E+00 | 0.00<br>E+00 | 7.73<br>E+02 | 0.00<br>E+00 | 7.73<br>E+02 | 0.00<br>E+00  |
| GWP-luluc              | kg CO <sub>2</sub> eq.  | 3.01<br>E-01  | 1.93<br>E-05 | 2.74<br>E-03 | 7.48<br>E-05 | 0.00<br>E+00 | 2.83<br>E-03 | -1.08<br>E+00 |
| GWP-total              | kg CO <sub>2</sub> eq.  | -7.24<br>E+02 | 2.45<br>E-01 | 6.67<br>E+00 | 7.74<br>E+02 | 0.00<br>E+00 | 7.81<br>E+02 | -1.16<br>E+02 |
| ODP                    | kg CFC 11 eq.   | 1.03<br>E-05  | 5.30<br>E-08 | 1.48<br>E-06 | 2.05<br>E-07 | 0.00<br>E+00 | 1.74<br>E-06 | -7.40<br>E-06 |
| AP                     | mol H <sup>+</sup> eq.  | 4.27<br>E-01  | 2.57<br>E-03 | 2.02<br>E-02 | 9.93<br>E-03 | 0.00<br>E+00 | 3.27<br>E-02 | -3.84<br>E-01 |
| EP-freshwater          | kg PO <sub>4</sub> <sup>3-</sup> eq.  | 4.07<br>E-03  | 8.81<br>E-06 | 5.68<br>E-04 | 3.41<br>E-05 | 0.00<br>E+00 | 6.11<br>E-04 | -1.87<br>E-02 |
| EP-marine              | kg N eq.  | 3.33<br>E-02  | 1.13<br>E-03 | 4.28<br>E-03 | 4.39<br>E-03 | 0.00<br>E+00 | 9.80<br>E-03 | -2.03<br>E-01 |
| EP-terrestrial         | mol N eq.   | 3.63<br>E-01  | 1.24<br>E-02 | 4.68<br>E-02 | 4.81<br>E-02 | 0.00<br>E+00 | 1.07<br>E-01 | -1.22<br>E+00 |
| POCP                   | kg NMVOC eq.  | 4.28<br>E-01  | 3.42<br>E-03 | 1.78<br>E-02 | 1.32<br>E-02 | 0.00<br>E+00 | 3.45<br>E-02 | -6.35<br>E-01 |
| ADP-minerals & metals* | kg Sb eq.   | 1.27<br>E-03  | 3.76<br>E-07 | 2.15<br>E-04 | 1.46<br>E-06 | 0.00<br>E+00 | 2.17<br>E-04 | -2.64<br>E-04 |
| ADP-fossil*            | MJ  | 1.12<br>E+03  | 3.38<br>E+00 | 9.99<br>E+01 | 1.31<br>E+01 | 0.00<br>E+00 | 1.16<br>E+02 | -2.30<br>E+03 |
| WDP                    | m <sup>3</sup>  | 4.98<br>E+00  | 4.52<br>E-03 | 3.33<br>E-01 | 1.75<br>E-02 | 0.00<br>E+00 | 3.55<br>E-01 | -2.61<br>E+01 |
| Acronyms               | GWP-fossil = Global Warming Potential fossil fuels; GWP-biogenic = Global Warming Potential biogenic; GWP-luluc = Global Warming Potential land use and land use change; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential, Accumulated Exceedance; EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption |               |              |              |              |              |              |               |

\* Disclaimer: The results of this environmental impact indicator shall be used with care as the uncertainties of these results are high or as there is limited experience with the indicator.

## Potential environmental impact – 1 m3 sawn and planed wood product produced in standalone planing mill

| Results per functional unit   |                        |              |              |              |              |              |              |
|---|------------------------|--------------|--------------|--------------|--------------|--------------|--------------|
| Indicator   | Unit                   | Tot.A1-A3    | C1           | C2           | C3           | C4           | Tot. C1-C4   |
| GWP-GHG <sup>2</sup>  | kg CO <sub>2</sub> eq. | 4.89<br>E+01 | 2.42<br>E-01 | 6.60<br>E+00 | 9.39<br>E-01 | 0.00<br>E+00 | 7.78<br>E+00 |
| <i>Additional voluntary indicators e.g. the voluntary indicators from EN 15804 or the global indicators according to ISO 21930:2017</i> |                        |              |              |              |              |              |              |

## Use of resources – 1 m3 sawn and planed wood product produced in standalone planing mill

| Results per functional unit |  |              |              |              |              |              |              |               |
|-----------------------------|--|--------------|--------------|--------------|--------------|--------------|--------------|---------------|
| Indicator                   | Unit   | Tot. A1-A3   | C1           | C2           | C3           | C4           | Tot. C1-C4   | D             |
| PERE                        | MJ   | 3.42<br>E+02 | 1.83<br>E-02 | 1.65<br>E+00 | 7.07<br>E-02 | 0.00<br>E+00 | 1.74<br>E+00 | 1.34<br>E+03  |
| PERM                        | MJ   | 8.10<br>E+03 | 0.00<br>E+00 | 0.00<br>E+00 | 0.00<br>E+00 | 0.00<br>E+00 | 0.00<br>E+00 | 0.00<br>E+00  |
| PERT                        | MJ   | 8.44<br>E+03 | 1.83<br>E-02 | 1.65<br>E+00 | 7.07<br>E-02 | 0.00<br>E+00 | 1.74<br>E+00 | 1.34<br>E+03  |
| PENRE                       | MJ   | 1.14<br>E+03 | 3.58<br>E+00 | 1.0<br>6E+02 | 1.39<br>E+01 | 0.00<br>E+00 | 1.23<br>E+02 | -2.33<br>E+03 |
| PENRM                       | MJ   | 0.00<br>E+00 | 0.00<br>E+00 | 0.00<br>E+00 | 0.00<br>E+00 | 0.00<br>E+00 | 0.00<br>E+00 | 0.00<br>E+00  |
| PENRT                       | MJ   | 1.14<br>E+03 | 3.58<br>E+00 | 1.06<br>E+02 | 1.39<br>E+01 | 0.00<br>E+00 | 1.23<br>E+02 | -2.33<br>E+03 |
| SM                          | kg   | 0.00<br>E+00 | 0.00<br>E+00 | 0.00<br>E+00 | 0.00<br>E+00 | 0.00<br>E+00 | 0.00<br>E+00 | 0.00<br>E+00  |
| RSF                         | MJ   | 0.00<br>E+00 | 0.00<br>E+00 | 0.00<br>E+00 | 0.00<br>E+00 | 0.00<br>E+00 | 0.00<br>E+00 | 0.00<br>E+00  |
| NRSF                        | MJ   | 0.00<br>E+00 | 0.00<br>E+00 | 0.00<br>E+00 | 0.00<br>E+00 | 0.00<br>E+00 | 0.00<br>E+00 | 0.00<br>E+00  |
| FW                          | m <sup>3</sup>   | 2.95<br>E-02 | 0.00<br>E+00 | 0.00<br>E+00 | 0.00<br>E+00 | 0.00<br>E+00 | 0.00<br>E+00 | 0.00<br>E+00  |
| Acronyms                    | 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 re-sources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water |              |              |              |              |              |              |               |

<sup>2</sup> The indicator includes all greenhouse gases included in GWP-total but excludes biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product. This indicator is thus equal to the GWP indicator originally defined in EN 15804:2012+A1:2013.

## Waste production and output flows

### Waste production – 1 m3 sawn and planed wood product produced in standalone planing mill

| Results per functional unit  |      |            |           |           |           |           |            |            |
|------------------------------|------|------------|-----------|-----------|-----------|-----------|------------|------------|
| Indicator                    | Unit | Tot. A1-A3 | C1        | C2        | C3        | C4        | Tot. C1-C4 | D          |
| Hazardous waste disposed     | kg   | 6.49 E-04  | 9.19 E-06 | 2.60 E-04 | 3.56 E-05 | 0.00 E+00 | 3.05 E-04  | -4.08 E-04 |
| Non-hazardous waste disposed | kg   | 1.12 E+01  | 4.09 E-03 | 5.76 E+00 | 1.58 E-02 | 0.00 E+00 | 5.78 E+00  | -8.25 E+00 |
| Radioactive waste disposed   | kg   | 1.04 E-02  | 2.34 E-05 | 6.73 E-04 | 9.07 E-05 | 0.00 E+00 | 7.87 E-04  | -3.04 E-02 |

### Output flows – 1 m3 sawn and planed wood product produced in standalone planing mill

| Results per functional unit   |      |            |           |           |           |           |            |           |
|-------------------------------|------|------------|-----------|-----------|-----------|-----------|------------|-----------|
| Indicator                     | Unit | Tot. A1-A3 | C1        | C2        | C3        | C4        | Tot. C1-C4 | D         |
| Components for re-use         | kg   | 0.00 E+00  | 0.00 E+00 | 0.00 E+00 | 0.00 E+00 | 0.00 E+00 | 0.00 E+00  | 0.00 E+00 |
| Material for recycling        | kg   | 1.73 E-01  | 0.00 E+00 | 0.00 E+00 | 0.00 E+00 | 0.00 E+00 | 0.00 E+00  | 0.00 E+00 |
| Materials for energy recovery | kg   | 1.13 E+00  | 0.00 E+00 | 0.00 E+00 | 4.89 E+02 | 0.00 E+00 | 4.89 E+02  | 0.00 E+00 |
| Exported energy. electricity  | MJ   | 0.00 E+00  | 0.00 E+00 | 0.00 E+00 | 0.00 E+00 | 0.00 E+00 | 0.00 E+00  | 0.00 E+00 |
| Exported energy. thermal      | MJ   | 0.00 E+00  | 0.00 E+00 | 0.00 E+00 | 0.00 E+00 | 0.00 E+00 | 0.00 E+00  | 0.00 E+00 |

### Information on biogenic carbon content – 1 m3 sawn and planed wood product produced in standalone planing mill

| Results per functional unit          |      |          |
|--------------------------------------|------|----------|
| BIOTIC CARBON CONTENT                | Unit | QUANTITY |
| Biogenic carbon content in product   | kg C | 211      |
| Biogenic carbon content in packaging | kg C | 1,1      |

Note: 1 kg biogenic carbon is equivalent to 44/12 kg CO<sub>2</sub>.

## Information related to Sector EPD

List of contributing manufacturers:

|                |                |
|----------------|----------------|
| Derome         | SCA            |
| JGA            | Valbo trä      |
| Martinsons     | Varberg Timber |
| Sandåsa Timber | Vida plants    |

This study covers 25 % of the total planed softwood timber in Sweden. Input are collected from 16 planing mills (13 combination plants and 3 standalone planing mills) and cover the production of 2 200 000 m<sup>3</sup> planed wood products. Data to produce planed wood is collected from a representative selection of planing mills in Sweden and weighted to an average. Since this is a sector EPD it is not possible to buy this planed wood on the market. The main purpose with the EPD is to facilitate the development of more EPDs for different wood products.

## References

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