

PRODUCT CATEGORY RULES

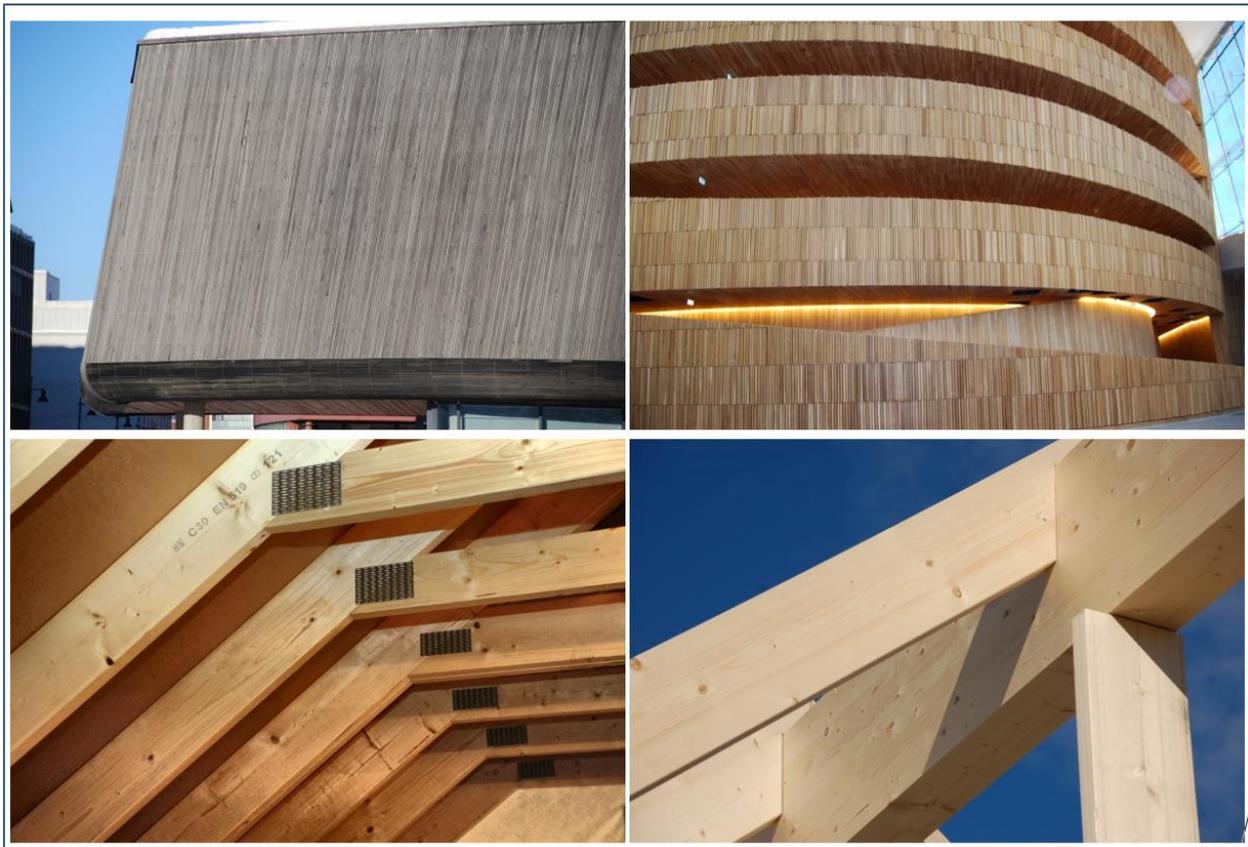
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PCR – Part B for wood and wood-based products for use in construction



REVISION LOG

This is an overview of the changes made to this PCR. Typology of changes:



- Editorial (ed): Text or layout edited, with no change in content.
- Technical (te): Existing content has been changed.
- Addendum (ad): New content has been added.

Naming convention: Version x.y, where x is a major revision and y is a minor revision.

Date (2019-04-10)	Type	Description of change
Version 1.0		
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Introduction

These product category rules (PCR) are intended for companies preparing an environmental product declaration (EPD) for wood and wood-based products. The PCR for wood and wood-based products consists of two parts. This document contains PCR part B specific for wood and wood-based products, which is the part of the PCR that is specific for wood and wood-based products. Part A contains the requirements that are common for all construction products. When preparing an EPD for wood and wood-based products, all requirements outlined in part A and part B must be followed. In PCR part B, the requirements for PCR part A are referred to in each section where they occur. The purpose of this document is to define clear guidelines for performing the underlying life cycle assessment (LCA) to ensure comparability between EPDs. In addition, EN 16485 PCR for wood and wood-based products is a normative reference for this PCR.

This PCR was developed from July 2018 to December 2018, by a Norwegian PCR work group (WG) with representatives from the wood and wood-based products industry and with aid from Ostfold Research (Østfoldforskning) and the EPD program operator The Norwegian EPD Foundation. The sections of this PCR that deal with modified wood are based on the outcomes of a PCR workshop that took place in the European cooperation in science and technology (COST) Action FP1407 Understanding wood modification through an integrated scientific and environmental impact approach (ModWoodLife).

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1 Scope

This document complements the core rules for the product category of construction products as defined in EN 15804:2012+A1:2013 and NPCR part A and is intended to be used in conjunction with those standards.

In addition, this PCR gives further specification for creating EPDs for wood and wood-based products on the Norwegian market. The core rules valid for all construction products are given in EN 15804 and NPCR part A, in addition to the complementary PCR for wood and wood-based products in EN 16485 and are expected to be known by those preparing the EPD.

2 Normative references

NPCR Part A: Construction products and services. Oslo: EPD-Norge.

EN 16485 Round and sawn timber - Environmental Product Declarations - Product category rules for wood and wood-based products for use in construction.

If there are contradictions in requirements between PCR Part A and EN 16485, then PCR Part A shall be given priority.

3 Terms and Definitions

As in PCR part A and EN 16485.

In addition, the following product-specific terms and definitions are given:

3.1 Wood

Lignocellulosic substance between the pith and the bark of a tree or a shrub.

[based on ISO 6707-1, but pitch changed to pith]

3.2 Modified wood

Wood modification technologies is defined as chemical, biological or physical processes that produce desired property improvements for the service life of the modified wood. The modified wood should be non-toxic and not release toxic substances during use, recycling or disposal. For durability, the mode of action should be non-biocidal. It should be noted that the above does not necessarily exclude the use of a hazardous chemical in the preparation of modified wood, provided that no hazardous residues remain once the wood modification process is complete.

[based on Hill, 2006]

3.3 Solid wood

Wood, sawn or otherwise machined which may include finger jointed and/or laminated wood [EN 335-2]



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The Norwegian EPD Foundation

3.4 Round timber

Felled tree cross-cut at the top, with all branches removed, that may or may not have been further cross-cut, generally excluding firewood.

[EN844-2]

3.5 Thermally modified timber

Wood at which the composition of the cell wall material and its physical properties are modified by the exposure of temperature higher than 160 °C and condition of reduced oxygen availability.

[CEN/TS 15679]

3.6 Sawn timber

Section of timber produced by lengthwise sawing or chipping of log(s) or solid wood of larger dimensions(s), and by possible crosscutting, further machining or both, to obtain a certain work size

[ISO 6707-1]

3.7 Planed timber

Sawn timber that, after drying to the end-use moisture content has been machined further in thickness and/or width within tight specified permitted deviations.

[EN 844-3]

4 Abbreviations

EPD	Environmental product declaration
DU	Declared unit
FU	Functional unit
PCR	Product category rules
LCA	Life cycle assessment
LCI	Life cycle inventory
LCIA	Life cycle impact assessment
RSL	Reference service life
ESL	Estimated service life
N/A	Not applicable

5 General Aspects

5.1 Objective of PCR Part A and B

As in PCR part A and EN 16485.

5.2 Types of EPD in respect to life cycle stages covered

As in PCR part A and EN 16485, including the following additions:

Cradle-to-gate only EPDs are not valid according to this PCR. As a minimum, cradle-to-gate with options that include life cycle modules A1-A3, A4-A5, C1-C4 and D are required.

5.3 Comparability of EPD of construction products

As in PCR part A and EN 16485.

5.4 Additional information

As in PCR part A and EN 16485.

5.5 Ownership, responsibility and liability for the EPD

As in PCR part A and EN 16485.

5.6 Communication format

As in PCR part A and EN 16485.

6 Product Category Rules for LCA

As in PCR part A and EN 16485.

6.1 Product Category

As in PCR part A and EN 16485, including the following additions:

The product group includes all kinds of wood and wood-based products. The products that shall follow this PCR, and their related standards, are listed here:

6.1.1 Strength graded structural timber

According to the following standard:

- EN 14081 Timber structures - Strength graded structural timber with rectangular cross section - Part 1: General requirements

6.1.1 Solid wood panelling and cladding

Solid wood products are described in the following standards:

- EN 14915 Solid wood panelling and cladding - Characteristics, requirements and marking

6.1.2 Glued laminated wood products

Glued laminated wood products are described in the following standards:

- EN 14080 Timber structures - Glued laminated timber - Requirements
- EN 16351 Timber structures - Cross laminated timber - Requirements

6.1.3 Wood flooring

Wood flooring products are described in the following standards:

- EN 14342 Wood flooring - Characteristics, evaluation of conformity and marking

6.1.4 Timber structures

Timber structure products are described in the following standards:

- EN 14250 Timber structures – Products requirements for prefabricated structural members assembled with punched metal plate fasteners

6.1.5 Thermally modified timber (TMT)

Wood at which the composition of the cell wall material and its physical properties are modified by the exposure of temperature between 160 and 300 °C and condition of reduced oxygen availability. The wood is altered in such way that at least some of the wood properties are permanently affected through the cross section of the timber. The purpose of thermal modification is to improve resistance to biological degradation, dimensional stability, decrease the thermal conductivity and change colour. Thermally modified wood products are described in the following specification:

- CEN/TS 15679 Thermal modified timber. Definitions and characteristics.

6.1.6 Acetylated wood

Wood acetylation using primarily acetic anhydride catalysed by zinc chloride or pyridine sodium acetate, potassium acid, urea-ammonium sulphate in a liquid and vapour systems, or as most acetylation reactions today realised without the use of a catalyst. Like untreated wood, acetylated wood is comprised only of carbon, hydrogen, and oxygen, and contains no toxic constituents.

6.1.7 Furfurylation wood

Chemical modification of wood with furfuryl alcohol (C₅H₆O₂) using cyclic carboxylic anhydrides as key catalysts. Furfurylation is executed by impregnating wood with a mixture of furfuryl alcohol and catalysts, and then heating it to cause polymerisation. The purpose of furfurylation is to improve resistance to biological degradation and dimensional stability by applying a non-toxic, furfuryl alcohol polymer.

6.1.8 Laminated veneer lumber

Laminated veneer lumber (LVL) are described in the following standards:

- EN 14374 Timber structures - Structural laminated veneer lumber - Requirements

6.1.9 Industrially protected wood

Wood products industrially protected have standardised requirements for solid wood:

- EN 351-1 Durability of wood and wood-based products - Preservative-treated solid wood - Part 1: Classification of preservative penetration and retention

6.2 Life cycle stages and their information modules to be declared

6.2.1 General

As in PCR part A and EN 16485.

Transport in all life cycle module A4 shall include the following:

- Direct emissions during transport (exhaust, tyres, etc.)
- Upstream emissions from fuel extraction, processing and distribution
- Life cycle emissions of vehicles (raw materials, manufacturing, maintenance and disposal)
- Life cycle emissions of infrastructure (raw materials, manufacturing, maintenance and disposal)

6.2.2 A1-A3, Product stage, information modules

As in PCR part A and EN 16485, including the following clarifications:

The activities and allocation applied for forestry and industry are listed in the table below.

Table 1: Allocation and completeness

	Activities included (Completeness check)	Allocation
Forestry	All silviculture activities included in national statistics and its infrastructure. Completeness as in transport are required for harvesting, forwarding and transport.	Silviculture shall first be divided into separate processes. Harvesting activities are regarded as joint co-production and shall be allocated by revenue. Forwarding and road transport shall not be allocated by revenue as they are not regarded as joint co-production.
Sawmills and other wood industry	The sawmills include all internal and external sources of energy used at the sawmill. The life cycle of the materials in buildings and machinery shall be included but can be based on generic data. All raw materials ending up in the final products shall be included. Final product packaging shall be included but can be based on a typical packaging of final products. Raw material packaging shall be included and other raw materials not ending in the final products when data is available and in sum contributing to more than 1 % of the impacts. Waste amounts can be used as a proxy for raw material packaging and other material use.	Sawmills should be subdivided and allocated on an economic basis for joint co-production processes. A simplified approach can be applied when all flows are allocated to the main product declared, but then the co-products and output flow cannot be declared.

6.2.3 A4-A5, Construction process stage, information modules As in PCR part A and EN 16485, including the following clarification:

The installation in A5 shall include the following:

- Waste treatment of packaging
- Energy use during installation
- Wastage of material during installation
- Paint or other surface treatments for products which are intended to be surface treated at the building site

Fasteners (screws) and other additional materials are not included, these are expected to be included at building level assessments.

6.2.4 B1-B5, Use stage, information modules related to the building fabric As in PCR part A and EN 16485.

6.2.5 B6-B7, Use stage, information modules related to the operation of the building As in PCR part A and EN 16485.

6.2.6 C1-C4 End-of-life stage, information modules As in PCR part A and EN 16485.

See also CEN/TC 16970, section 6.2.6, Table 2 for additional guidance.

6.2.7 Benefits and loads beyond the system boundary, information module
As in PCR part A and EN 16485.

6.3 Calculation rules for the LCA

For declaring wood and wood-based products, a functional or declared unit can be used. The functional unit should be applied when a specific function and scenario that is typically used is known for the product. If these typical functions and scenarios are many or not known, the declared unit should be used.

The scope and variations of products must be declared according to EPD-Norway guidelines. As of 2014, similar products in the same EPD can only be included if the variations of the results for each LCIA category does not exceed +/- 10 %.

6.3.1 Functional unit

As in PCR part A and EN 16485, with the following additions:

Functional unit shall be used for all products with surface treatment and which are intended for maintenance. The products listed in Table 2 shall be declared with the following functional units.

Table 2: Functional units for wood and wood-based products

Product standard	Functional unit	Reference dimension
EN 14915 with primer or another surface treatment	1 m ² of wall covering (based on net running meters).	Panelling with tongue and groove 14 mm thickness Cladding with tongue and groove 19 mm thickness
EN 14342 with surface treatment	1 m ² of floor covering (based on net running meters).	Floor boards with tongue and groove and reference dimension for non-bearing or c/c 60 load-bearing
Outdoor decking board of solid wood	1 m ² of floor covering (based on net running meters).	Dimension used for c/c 60

The functional unit shall also specify:

- Quantified key properties of the product, when integrated into the construction works, facilitating a functional equivalent comparison with similar products.
- The defined in-use conditions and time period for these performance characteristics. Use class according to EN 335 which defines assumed in-use conditions in addition to

geographic use of the product. The Scheffer index should be used to define geographic in-use conditions assumed for outdoor use of the product.

Materials used for both cladding and roofing need to be declared with two different scenarios in the EPD, in order to be representative for both products.

For surface treatment with pigments, white and egg white (0502-Y) can be used as a proxy for all colours.

6.3.2 Declared unit

As in PCR part A and EN 16485, with the following additions:

The declared unit shall only be used for products where the functional unit is not specified in this PCR. The products listed in Table 3 shall use the declared unit as listed.

Table 3: Declared units for wood and wood-based products

Product standard	Declared unit	Reference dimension
EN 14081	1 m ^{3*}	Average among produced dimensions and moisture content
EN 14915 without primer or surface treatment	1 m ^{3*}	Panelling with tongue and groove 14 mm thickness Cladding with tongue and groove 19 mm thickness
EN 14080	1 m ^{3*}	Average among produced dimensions and moisture content
EN 16351	1 m ^{3*}	Average among produced dimensions and moisture content
EN 14342 without surface treatment	1 m ^{3*}	20 mm thickness and moisture content
EN 14250	1 item	0.115 m ³ C30 wood and 3.52 kg of steel fasteners
Sawn timber	1 m ^{3*}	Average among produced dimensions and moisture content if within a 10 % deviation of requirements in product variation. More specific if larger variations.

* The volume of wood shall be reported in terms of real measure, as defined in Figure 1.

The declared unit (cradle to gate with options – A1-A5, C1-C4 and D) for other products is defined as:

1 unit of manufactured product, installed and waste treated at end-of-life (mass, length, area, item or volume)

Life cycle modules A1-A5, C1-C4 and D shall be included as a minimum.

For EN 14250, the EPD shall also include a formula to adjust GWP to other amounts of wood and steel. This formula shall be justified in the LCA report and verified.

If the reference service life of the product is shorter than the reference study period of the building, independent of the application, then life cycle module B4 for replacement shall be included.

6.3.3 Reference service life (RSL)

As in PCR part A and EN 16485.

The reference service life of the wood and wood-based products depends on the material itself and the building site location. When declaring the functional unit, the number of replacements of the product shall be declared according to the reference study period of 60 years for the building.

6.3.4 System boundaries

As in PCR part A and EN 16485.

6.3.5 Criteria for the exclusion of inputs and outputs (cut-off)

As in PCR part A and EN 16485, including the following further clarification:

The cut-off criteria in EPD-Norway's general program of instructions (GPI) shall also be followed. As of 2018, the key requirements are:

- that processes and activities that do not contribute more than 1 % of the total environmental impact in some of the environmental impacts categories can be left out
- production of capital, buildings and equipment that are not included shall also be justified according to the GPI. This justification shall be based on quantitative assessments to the cut-off criteria. Conservative assumption can be used when data is missing and is always better than leaving out activities in the inventory.

6.3.6 Selection of data

As in PCR part A and EN 16485, including the following additions:

For transport data in life cycle modules A2 and A4, the data representativeness of the vehicle type, fuel use and load factor must be shown to be realistic and conservative for the actual use and scenario.

6.3.7 Data quality requirements

As in PCR part A and EN 16485, including the following additions:

If data for wood as raw materials are not available from an EPD according to EN 15804 and/or verified according to ECO Platform, the compliance of the data to EN 15804 and specifications in this PCR must be shown in the LCA report and the LCI must be checked during verification. This includes the whole value chain from forestry and industrial processes.

NOTE: When using databases special attention is needed as many databases do not comply with EN 15804 for all parameters. Typical challenges are completeness, coproduct allocation, and inherent properties such as energy and carbon.

6.3.8 Scenarios at the product level As in PCR part A and EN 16485.

6.3.8.1 A4 Transport to the building site

Transport from the manufacturing site to the construction site is estimated based on information from the manufacturer. The following default values can be used for developing scenarios at the product level:

- For domestic production, the default travel distance from the manufacturing site to the building site is 300 km.
- For import, the distance is measured from the manufacturing site to a specific storage location, plus a transport distance from the storage location to the building site (300 km if not specified). If no specific storage location is given, then the capital city of the country that the product is being imported to may be used as an approximate location.

6.3.8.2 A5 Installation

As in PCR part A and EN 16485.

6.3.8.3 B1-B7 Use phase

As in PCR part A and EN 16485, in addition:

The release of substances to air, soil or ground shall be provided as information, see chapter 7.4 in EN 15804:2012. These emissions do not need to be included in the LCA if the emissions are not relevant for the LCIA categories included.

Module B2-B5, Maintenance, repair, replacement and refurbishment scenarios are provided by the manufacturer depending on the area of utilisation. Maintenance of wood and wood-based materials will be required to reach the expected reference service life described. When the reference service life of the product is of a number that will make a replacement at a time when the service life of the building is less than the service life of the replaced product, this shall not be modelled as a complete replacement, but as a repair in module B3. The amount of replacement is then the percent replacement of the materials at the same percent of the residual service life of the building to service life of the product.

Table 4 defines default scenarios for solid wood. These values are conservative and other values can be used if documented by the manufacturer. The geographical application is representative

for Eastern Norway. If the market is mainly other places, use phase scenarios must be representative for the actual markets declared.

Table 4: Default values for use phase scenarios for common solid wood products.

Product standard	Product	RSL	B1	B2	B3	B4	B5	B6	B7
EN 14915 solid wood with primer or another surface treatment	Exterior cladding	60		According to surface treatment product	10 %		N/A	N/A	N/A
EN 14342 solid floor boards with surface treatment	Interior flooring	60		According to surface treatment product			N/A	N/A	N/A
Decking solid board treated to use class 3 in EN 351-1	Exterior decking	30	Leaching of copper				N/A	N/A	N/A
EN 14915 treated to use class 3 in EN 351-1 or without primer or another surface treatment	Exterior cladding	60	Leaching of copper	According to surface treatment product			N/A	N/A	N/A

Table 5 defines default scenarios for modified wood. These values are conservative and other values can be used if documented by the manufacturer. The geographical application is representative for Eastern Norway. If the market is mainly other places, use phase scenarios must be representative for the actual markets declared.

Table 5: Default values for use phase scenarios for modified wood products.

Product standard	Product	RSL	B1	B2	B3	B4	B5	B6	B7
CEN/TS 15679	Exterior cladding	60			10 %		N/A	N/A	N/A
CEN/TS 15679	Exterior decking	25			40 %	1 full replacement for 25 years	N/A	N/A	N/A
CEN/TS 15679	Interior panelling	60					N/A	N/A	N/A

Section 6.1.6 of this PCR	Exterior cladding	60					N/A	N/A	N/A
Section 6.1.6 of this PCR	Exterior decking	35			70 %	0 full replacement for 60 years	N/A	N/A	N/A
Section 6.1.7 of this PCR	Exterior cladding	60					N/A	N/A	N/A
Section 6.1.7 of this PCR	Exterior decking	30				1 full replacement for 60 years	N/A	N/A	N/A

6.3.8.4 C1-C4 End-of-life

As in PCR part A and EN 16485. In addition:

Transport from the building/demolition site to the waste treatment/recycling facility is estimated based on information from the manufacturer and shall be relevant for the intended market. Default scenarios for life cycle module C2 transport to waste processing should be based on national statistics.

More than one scenario for waste treatment and disposal should be included if there are several relevant common practices, but the most conservative scenario shall always be included. Default conservative scenarios for solid and modified wood are listed in Table 6.

Table 6: Default conservative scenarios for life cycle modules C3 and C4 for solid and modified wood

Product types	Market	C3	C4
Solid wood, modified wood, treated wood	Europe and Japan	Municipal incineration with energy recovery	Landfilling of ashes from incineration
Solid wood, modified wood, treated wood	North-America	Central sorting of mixed construction waste	Landfilling of wasted product in sanitary landfill
Solid wood, modified wood, treated wood	Rest of the world		Open burning

6.3.9 Units

As in PCR part A and EN 16485, including the following aspects:

There are many ways to quantify the volume of wood. It depends on what we are measuring (from living tree to finished product) and the moisture content (from green wood to dry matter). It is therefore important to be aware of what the dimensions are referring to. One example from a sawmill's perspective is illustrated in Figure 1.

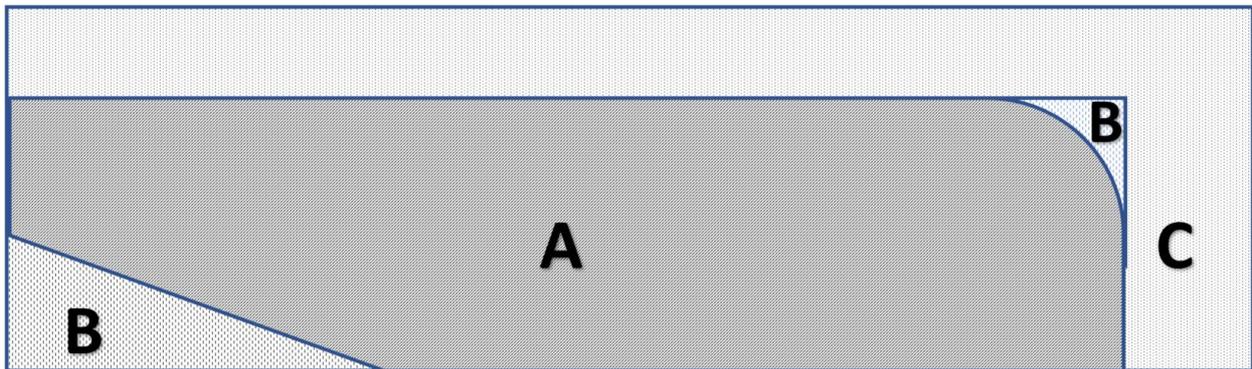


Figure 1: Measuring the volume of wood – illustration of a cross section of sawn timber. A = real measure / real dimensions of the finished product. B + C = planing allowance / shavings. A + B = actual size. A + B + C = nominal size / basic size. For a rectangular product, the real measure and the actual size are identical.

6.4 Inventory analysis

As in PCR part A and EN 16485.

6.5 Impact assessment

As in PCR part A and EN 16485.

7 Content of the EPD

7.1 Declaration of general information

As in PCR part A and EN 16485, including the following aspects:

The material composition of the product shall be listed with specific weights of the main components as it is installed. This information shall be included in the LCA report. Usage areas and conditions must be specified in the EPD. The harmonised standard for which the product is produced according to must be specified in the EPD.

The scope of products declared in an EPD must be specified so that the product range can easily be identified by the customer. The ability of scaling LCA results to other dimensions must also be

specified.

7.2 Declaration of environmental parameters derived from LCA

7.2.1 General

As in PCR part A and EN 16485.

7.2.2 Rules for declaring LCA information per module

As in PCR part A and EN 16485.

7.2.3 Parameters describing environmental impacts

As in PCR part A and EN 16485.

7.2.4 Parameters describing resource use

As in PCR part A and EN 16485.

7.2.4.1 Water use

As in PCR part A.

7.2.4.2 Electricity used in A3 Manufacturing

As in PCR part A.

7.2.5 Other environmental information describing waste categories and output flows

As in PCR part A and EN 16485.

7.2.6 Accounting of biogenic carbon during the life cycle

As in PCR part A, including the following additions:

If no specifications are given in PCR part A, biogenic carbon shall be declared according to ISO 21930 or EN 16485.

The documentation used in the LCA-report for the origin and sustainability of the wood raw materials shall be specified in the EPD. This could be based on chain of custody certifications such as FSC and PEFC. If chain-of-custody certification is not available, declaration of conformity with EUTR 995/2010 shall be included in the LCA-report.

7.2.7 Greenhouse gas emissions from land use change

As in PCR part A, including the following additions:

If no specifications are given in PCR part A, greenhouse gas emissions from land use change shall be declared according to ISO 21930 or EN 16485.

7.3 Scenarios and additional technical information

7.3.1 General

As in PCR part A and EN 16485.

7.3.2 Construction process stage

7.3.2.1 A4, Transport from the production site to the construction site.

As in PCR part A and EN 16485, including the following additions:

Transport from the production gate to the construction site is typically carried out using trucks. The distance, type of vehicle, fuel consumption and degree to which the transport capacity is utilised may have a large impact on transport emissions, thus these factors must be stated. Capacity utilisation is calculated as a percentage (%) of the mass of the total load capacity of the vehicle. The percentage given shall be the average of the capacity utilisation including the return trip. Table 7 shows which information shall be provided in the EPD when module A4 is included.

Table 7. Information on the transport to the construction site (A4) required in the EPD.

Type	Capacity utilisation (incl return) %	Type of vehicle, incl emissions class	Distance km	Fuel/energy consumption pr tkm	Fuel energy consumption pr km
Truck					
Railway					
Other transport mode					

7.3.2.2 A5, Installation

As in PCR part A and EN 16485, including the following additions:

The EPD shall specify the following information about the installation scenario:

- The consumption of fasteners, adhesives and necessary accessories
- The amount of energy per energy carrier
- Guidance for installation, international standards/regulations or national standards/regulations in which the scenario is based on
- If the EPD deviates from the predefined scenarios, this shall be clearly stated and justified.
- Usage areas and conditions must be specified in the EPD.

7.3.3 Use stage

As in PCR part A and EN 16485.

7.3.4 End of life

As in PCR part A and EN 16485, including the following additions:

Transport from the building to end of life is typically carried out using trucks. The distance, type of vehicle, fuel consumption and degree to which the transport capacity is utilised may have a large impact on transport emissions, thus these factors must be stated. Capacity utilisation is calculated as a percentage (%) of the mass of the total load capacity of the vehicle. The percentage given shall be the average of the capacity utilisation including the return trip. Table 7 shows which information shall be provided in the EPD when module C2 is included.

Table 7. Information on the transport from the building to end of life (C2) required in the EPD.

Type	Capacity utilisation (incl return) %	Type of vehicle, incl emissions class	Distance km	Fuel/energy consumption pr tkm	Fuel energy consumption pr km
Truck					
Railway					
Other transport mode					

7.4 Additional information

As in PCR part A and EN 16485.

7.4.1 Additional information on release of dangerous substances to indoor air, soil and water

7.4.1.1 Indoor air

As in PCR part A and EN 16485, with the following additions:

Release of substances to indoor air is relevant when the product is used on the inside of the vapour barrier. The following standard should be applied for measuring emissions to indoor air:

- EN 16516 Construction products: Assessment of release of dangerous substances - Determination of emissions into indoor air

7.4.1.2 Soil, ambient air and water

As in PCR part A and EN 16485, with the following additions:

Release of substances to ground water or soil is relevant for products when they are used in direct contact with the ground or rain water. Until horizontal standards for the measurement of leaching characteristics are available, the following reports should be used:

- CEN/TS 16637-3 Construction products. Assessment of release of dangerous substances. Horizontal up-flow percolation test.
- CEN/TR 17105 Construction products. Assessment of release of dangerous substances. Guidance on the use of ecotoxicity tests applied to construction products.

7.4.2 Additional Norwegian requirements

As in PCR part A.

7.4.2.1 Greenhouse gas emissions from electricity use in A3 Manufacturing

As in PCR part A.

7.4.2.2 Dangerous substances and content declaration

As in PCR part A, including the following additions:

Specification of materials and substances that can adversely affect human health and environment shall be reported.

A detailed list of the product's substances (chemicals included in the final product), including CAS number and health class (risk phrases or CLP regulations Regulation (EC) No. 1272/2008) when these are in force, shall be included in the product content declaration. The content of substances shall be declared in terms of weight percentages. Only substances that are mentioned in the raw material safety declaration sheets (SDS) shall be included. The EPD owner has no obligation to investigate the content of ingredients used in raw material production, with the exception of products on the REACH candidate list and the Norwegian Priority List.

In cases where information about contents could affect patent or company secrets, a qualitative list of chemicals and their expected functions is sufficient, including the risk phrases. This does not apply to substances registered under the REACH Directive.

7.4.2.3 Emission classification of building materials

As in PCR part A.

7.4.2.4 Carbon footprint of products

As in PCR part A, including the following additions:

Global warming potential (GWP) should be declared in two sub-categories for all life cycle modules declared in the EPD, in order to make carbon footprint of buildings easier to understand, and to facilitate for comparison to national greenhouse gas accounting possible, the GWP shall also be declared in two subcategories for all modules declared. The two sub-categories are listed in

Table 8.

Table 8: Sub-categories for GWP

Abbreviation	Name	Explanation
GWP-IOBC	Global warming potential – instantaneous oxidation of biogenic carbon	The accounting assumes that all carbon in bio-based materials will eventually oxidize and can therefore be accounted as an emission at harvest. This implies that the emissions of biogenic methane need to be adjusted so that the carbon that oxidizes from methane is not double counted. In national greenhouse gas accounting methods from IPCC, this approach is known as instantaneous oxidation.
GWP-BCIP	Global warming potential – Biogenic carbon in products and packaging	The flows of carbon to and from the bio-based material is accounted as CO ₂ in the life cycle module where it occurs. This follows the harvested wood products (HWP) methodology in IPCC but is also accounting other bio-based materials than wood.
GWP	Global warming potential	As in the LCIA results. This is the sum of GWP-IOBC and GWP-BCIP.

The differentiation in LCI results between product and packaging should be presented according to ISO 21930:2017, Annex E, Table E.4.

7.5 Aggregation of information modules

As in PCR part A and EN 16485.

8 Project Report

As in PCR part A and EN 16485.

9 Verification and Validity of an EPD

As in PCR part A and EN 16485.

During verification, the verifier must check that the EPD and accompanying LCA report are carried out according to the normative standards listed in this PCR.

10 Bibliography

As in PCR part A, including the following additions:

CEN/TS 16637-3:2016 Construction products. Assessment of release of dangerous substances. Horizontal up-flow percolation test.

CEN/TR 16970:2016. Sustainability of construction works. Guidance for the implementation of EN 15804.

CEN/TS 15679 Thermal modified timber. Definitions and characteristics.

EN 16485:2014 Round and sawn wood. Product category rules (PCR) for wood and wood-based products for use in construction.

EN 335. Durability of wood and wood-based products - Use classes: definitions, application to solid wood and wood-based products

EN 16516. Construction products: Assessment of release of dangerous substances - Determination of emissions into indoor air.

Hill, C.A.S. 2006. Wood Modification. Chemical, Thermal and Other Processes

ISO 21930:2017 Sustainability in buildings and civil engineering works – Core rules for environmental product declarations of construction products and services.