

Principles for the acceptance of LCA data in the online database ÖKOBAUDAT

Preliminary remark

The original of this document has been drawn up in German (Grundsätze zur Aufnahme von Ökobilanzdaten in die Online-Datenbank ÖKOBAUDAT). The German version shall be the authentic one and prevail over the English one in all matters of interpretation and construction. The English version shall be deemed to be only a translation for information purposes.

1 General information

1.1 About ÖKOBAUDAT

The ÖKOBAUDAT platform is provided as a standardized database for ecological evaluations of buildings by the Federal Ministry of the Interior, Building and Community (BMI). Building materials, construction and transport processes are described regarding their ecological effects.

The provided data comply with DIN EN 15804 'Sustainability of construction works – Environmental product declarations – Core rules for the product category of construction products'. ÖKOBAUDAT can be found at www.oekobaudat.de. ÖKOBAUDAT is not designed for performing life cycle assessment of building products.

In ÖKOBAUDAT, the information is presented in form of datasheets comprising numerical data as well as textual information. The package of data and information to be delivered is called 'LCA data set'.

1.2 The principles at a glance

The principles for the acceptance of LCA data in the online database ÖKOBAUDAT were defined by BMI / BBSR as the owner of ÖKOBAUDAT and discussed and agreed on in the ÖKOBAUDAT users advisory group¹. References to 'DIN EN 15804' always relate to the most recent version (currently DIN EN 15804:2012+ A1:2013).

The following essential requirements apply for acceptance of LCA data in ÖKOBAUDAT:

- The data have been generated in compliance with DIN EN 15804.
- The data have been verified by independent third party (external verification according to ISO 14025 or external critical review). Non-reviewed data are not accepted in ÖKOBAUDAT.
- The datasets shall preferably be delivered in German language / nomenclature. For English EPD or LCA datasets abbreviated versions in German for each text field and references to more detailed information in the English dataset are appropriate.
- The ÖKOBAUDAT requirements for modelling and calculation of indicators shall be fulfilled (section 3.3).
- The datasets shall be delivered in the prescribed data format (ILCD + EPD, section 3.4.3).
- The valid time shall be given in each dataset (section 3.4.4).
- The owner of the dataset has released the data to be published in ÖKOBAUDAT.
- The required declarations / information shall be fully delivered (section 3.5).
- Before delivery, the datasets were checked using the Validation Tool.
- The datasets were subjected a plausibility check (completeness, plausibility) before approval in ÖKOBAUDAT.
- Datasets for the assessment system sustainable building BNB shall be based on the background database GaBi and preferably available in German language.

Figure 1: Essential requirements for the acceptance of LCA data in ÖKOBAUDAT. The compilation is not complete. The whole document 'Principles for the acceptance of LCA data in the online database ÖKOBAUDAT' has to be considered.

¹ current formation of the users advisory group ÖKOBAUDAT: <http://www.oekobaudat.de/en.html>

1.3 Change documentation

Compared to the version of 14 May 2018 the following changes have been integrated into the principles:

- Specification for acceptance of Category B data in 2.2.
- The mandatory requirement to split module D into sub modules has been removed. In module D the sum of all supplying modules has to be declared. An additional requirement is that module C must be declared as soon as module D is declared - regardless of whether material flows from module C are transferred to module D. (Section 3.1)
- In the BNB system, only English-language datasets may now be used without restriction. Section 3.4.2 has been reformulated accordingly.
- In the new section 3.4.6, the data provider's obligation to provide information in the case of significant changes in EPD renewals has been anchored.
- Editorial changes to a limited extent.

2 Categories of data

In general, LCA datasets can be distinguished by the categories according to table 1:

Table 1: Categories of LCA Datasets

Category	Description
Category A	Verified EPD according to DIN EN 15804 and generated in an EPD programme according to DIN EN ISO 14025
Category B	Verified EPD (B1) or LCA data with external critical review (B2), according to DIN EN 15804, but not generated in an EPD programme according to DIN EN ISO 14025
Category C	LCA data compliant to DIN EN 15804, non-reviewed (no verification or external critical review)
Category D	LCA data not compliant to DIN EN 15804

In principle, datasets of category A and category B are accepted in ÖKOBAUDAT.

2.1 Datasets Category A (EPD with programme operator)

Datasets of category A are LCA data which have been generated in the frame of an environmental product declaration (EPD) with external verification according to DIN EN 15804. The EPD generation is backed by an EPD programme according to DIN EN ISO 14025. The programme rules and product category rules (PCR) shall be publicly available and shall also fulfil DIN EN 15804 and DIN EN ISO 14025.

2.2 Datasets Category B (Verified EPD or LCA data according to DIN EN 15804)

Datasets of category B have not been generated in the frame of an EPD programme according to DIN EN ISO 14025 or have not been published in the frame of an EPD. Like data of category A, they have been subjected to an external verification or critical review though.²

Basically, ÖKOBAUDAT is targeted on data of Category A. Category B was created, for example, to record results from research studies of high national importance. The acceptance of datasets of category B therefore requires approval of the users advisory group of ÖKOBAUDAT. The conditions for the acceptance of these datasets are stipulated according to the case of need, depending amongst others on the origin of the delivered data. Basically a third party verification or external critical review has to prove the conformity with DIN EN 15804 also for this category of datasets. The applicant or provider of the LCA datasets respectively has to deliver the verification separately. Apart from that the requirements for datasets of category A shall be fulfilled accordingly.

2.3 Datasets Category C („Unspecified datasets“)

Datasets of category C are generated on the basis of DIN EN 15804, but have not been subjected to an external verification or critical review. This category comprises “generic data”.

In ÖKOBAUDAT, generic datasets are provided primarily for the calculation of LCA of buildings or building components, e.g. within the evaluation system for sustainable construction (Bewertungssystem Nachhaltiges Bauen BNB). These can be used as a substitute if specific datasets are missing.

Generic datasets are not verified according to EN 15804, but quality-controlled. However, they are generated, subjected an internal quality test and continuously updated

- from a single source

² For LCA data which have not been generated in the frame of an EPD an external critical review is required, according to DIN EN 14040. For the acceptance of LCA data of category B2 in ÖKOBAUDAT the critical review has to be carried out following the verification principles acc. to DIN EN ISO 14025 (section 3.2.3).

- following standardised, consistent procedures audited by independent third parties
- according to the requirements for modelling and calculation of LCA data stated in the principles.

The internal quality test is carried out by thinkstep following the double check principle. In a quality check the LCA models are examined by an employee not involved in the LCA generation.

The environmental impact of generic datasets is estimated assuming worst case conditions, adding an uncertainty margin. In order to determine these uncertainty margins, the data generator classifies the production data (modules A1-A3) into three levels regarding completeness of the model and representativeness (in terms of technology, time and geography). Depending on the completeness and representativeness of data uncertainty margins of 10 %, 20 % or 30 %, respectively, are added. The level is documented in the ÖKOBAUDAT dataset, including an explanatory statement.

There are no uncertainty margins imposed on data for scenarios (modules B, C and D).

The ÖKOBAUDAT routine for checking generic datasets corresponds in principle to that for the product-specific datasets. However, these unspecific datasets are ordered by the BBSR. Other datasets of category C are not accepted in ÖKOBAUDAT. Hence, datasets of category C will not be described in more detail in this document.

2.4 Datasets Category D

Datasets of category D are LCA data which are not compliant with DIN EN 15804 (Note: These data can also originate from a verified EPD according to DIN EN ISO 14025). Data which are not compliant with DIN EN 15804 will not be accepted in ÖKOBAUDAT.

3 Criteria of acceptance of LCA data

3.1 General information

For acceptance of LCA data the subsequent general requirements as well as those dependent on the category of data shall be fulfilled. An overview is given in Table 2.

Table 2: Rules and evidence for the acceptance of data in ÖKOBAUDAT

Rule / evidence	Data category		
	Category A Verified EPD acc. to DIN EN 15804 within EPD programme acc. to DIN EN ISO 14025	Category B1 Verified EPD acc. to DIN EN 15804 without programme operator	Category B2 LCA data acc. to DIN EN 15804 with external critical review on the basis of DIN EN ISO 14025
(1) EPD programme operator (DIN EN ISO 14025)	X		
(2) Rules (PCR) (DIN EN ISO 14025)	X	X	(X) ³
(3) EPD verification (DIN EN ISO 14025) or external critical review (in principle following DIN EN ISO 14025)	X	X	X
(4) EPD (Category A and B1) or LCA data (Category B2) acc. to DIN EN 15804	X	X	X
(5) Additional requirements (section 3.3)	X	X	X
(6) Data shall be delivered in the stipulated data format (section 3.4.3)	X	X	X
Acceptance in ÖKOBAUDAT	If the criteria for acceptance are fulfilled EPD datasets are generally accepted.		Since general guidelines are missing, a critical review has to be provided for each data set

3.2 Requirements dependent on the category of data

Depending on the category of data the following requirements shall be met.

3.2.1 Datasets Category A

For datasets of category A to be accepted in ÖKOBAUDAT compliance with DIN EN 15804 and with the verification requirements (according to DIN EN ISO 14025, DIN EN ISO 14040, ISO 21930) shall be stipulated in the EPD programme. Evidence of the following general conditions (Table 2) shall be provided:

- (1) Programme rules used meet all mentioned standards (DIN EN ISO 14025, DIN EN ISO 14040, ISO 21930). **Attachment A, Table A.1** has to be considered.*
- (2) Product category rules (PCR) used meet DIN EN ISO 14025. PCR are in conformity with DIN EN 15804. **Attachment A, Table A.2** has to be considered. *
- (3) Verification rules meet all mentioned standards (DIN EN ISO 14025, DIN EN ISO 14040, ISO 21930).

³ If the LCA data have been generated using existing PCR documents, the requirements of DIN EN ISO 14025 shall be checked and proved. In case there are no PCR available the definition of the goal and scope of the LCA according to DIN EN ISO 14040 und 14044 has to be checked and confirmed.

Attachment A, Table A.3 has to be considered. *

- (4) The LCA data have been generated in compliance with DIN EN 15804.
- (5) The ÖKOBAUDAT requirements for modelling and calculation of indicators for LCA datasets are fulfilled (section 3.3).
- (6) The LCA data are delivered in the stipulated data format (section 3.4.3).

* Note: Established 'ECO Platform EPD Programme Operators' can provide a successful auditing according to ECO Guidance Paper Verification as proof for the required quality assurance and verification measurements in frame of the EPD programme (subitem (1) to (3)). For these accepted EPD programmes the ÖKOBAUDAT requirements on modelling and calculation of indicators are to be proved in addition. Likewise, data shall fulfill formal demands of ÖKOBAUDAT (language, verification, completeness, ...).

3.2.2 Datasets Category B1

For datasets of category B1 to be accepted in ÖKOBAUDAT compliance with DIN EN 15804 and with the verification requirements (according to DIN EN ISO 14025, DIN EN ISO 14040, ISO 21930) shall be stated. Evidence of the following general conditions (Table 2) shall be provided:

- (1) Requirements on the programme operator are not applicable for datasets of category B1.
- (2) The product category rules (PCR) shall comply with DIN EN ISO 14025. Conformity of the PCR with DIN EN 15804 has to be ensured. **Attachment A, Table A.2** has to be considered.
- (3) The verification rules shall comply with the requirements of the specified standards (DIN EN ISO 14025, DIN EN ISO 14040, ISO 21930). **Attachment A, Table A.3** has to be considered.
- (4) The LCA data have been generated in compliance with DIN EN 15804.
- (5) The ÖKOBAUDAT requirements for modelling and calculation of indicators for LCA datasets are fulfilled (section 3.3).
- (6) The LCA data are delivered in the stipulated data format (section 3.4.3).

3.2.3 Datasets Category B2

The acceptance of datasets of category B2 needs an affirmation in the users advisory group of ÖKOBAUDAT (see section 2.2). The conditions for the acceptance of these datasets are stipulated there individually. In general the following principles apply.

For acceptance of datasets of category B2 in ÖKOBAUDAT compliance with DIN EN 15804 shall be stated. Datasets of category B2 are LCA data which require a so-called „critical review“ in DIN EN ISO 14040 – however the contents of the review are not clearly defined. In order to ensure high data quality also for LCA datasets of category B2, an external critical review along the lines of verification according to DIN EN ISO 14025 is required for acceptance in ÖKOBAUDAT. **Attachment A, Table A.3** has to be considered.

If the datasets have been generated using existing PCR documents, the latter shall be analysed in the external review along the lines of the requirements of the verification process according to DIN EN ISO 14025.

Evidence of the following general requirements (Table 2) shall be provided:

- (1) Requirements on the programme operator are not applicable for datasets of category B2.
- (2) As with category B1, data shall be generated on the basis of specified rules („definition of the goal and scope“ according to DIN EN ISO 14040, section 5 and DIN EN ISO 14044, section 4.2). If existing PCR are used, compliance with the requirements of DIN EN ISO 14025 shall be examined and confirmed. It shall be ensured that the PCR or the specified rules comply with DIN EN 15804. **Attachment A, Table A.2**

has to be considered.

- (3) The process of external review of data shall principally comply with the requirements of the specified standards (DIN EN ISO 14025, DIN EN ISO 14040, ISO 21930). The applicant or provider of the datasets respectively is responsible for instructing an appropriate critical review. **Attachment A, Table A.3** has to be considered.
- (4) The LCA data have been generated in compliance with DIN EN 15804.
- (5) The ÖKOBAUDAT requirements for modelling and calculation of indicators for LCA datasets are fulfilled (section 3.3).
- (6) The LCA data are delivered in the stipulated data format (section 3.4.3).

3.3 ÖKOBAUDAT requirements for modelling and calculation of indicators for LCA datasets

DIN EN 15804 allows diverging interpretation in various relevant aspects regarding modelling and calculation rules. In order to guarantee a high consistency and comparability, LCA data shall comply with the following specifications which have been affirmed in the ÖKOBAUDAT users advisory group.

3.3.1 Specific requirements for modelling and calculation of indicators for LCA data sets in ÖKOBAUDAT

- The complementary Product Category Rules developed by product-related CEN Technical Committees and examined by CEN/TC 350 shall be considered (e.g. DIN EN 16485 Round and sawn timber - Environmental Product Declarations - Product category rules for wood and wood-based products for use in construction; German version EN 16485:2014).
- Energy flows generated within the modules A1-A3 may be factored as 'closed loop', as long as their amount is smaller than the amount of needed energy and the height of temperature of generated and needed thermal energy are comparable. If more energy is generated than needed within A1-A3, allocation shall be carried out according to DIN EN 15804.
- If module B is declared a value for the reference service life is mandatory.
- Module D can only be declared, if the information module which it refers to is also part of the system boundary. In addition, the declaration of module C is mandatory as soon as module D is declared, regardless of whether material flows from module C are transferred to module D.
- End-of-life scenarios: It is allowed that several scenarios for module C and module D are given. Each scenario shall be calculated and declared separately. Example: Two end-of-life scenarios are given for waste wood: Scenario 1 'Material recovery/recycling' and Scenario 2 'Energy recovery' where Scenario 1 comprises also the energy recovery of waste wood which is not recyclable. Each scenario shall be displayed separately in ÖKOBAUDAT. In addition, mixed scenarios (e.g. Scenario 3 '80 % Material recovery/recycling (Scenario 1) and 20 % Energy recovery (Scenario 2)') can be described.
- The rules for calculation of the average and the representativeness shall be indicated.
- The characterisation factors according to DIN EN 15804, Annex C shall be used for the calculation of the life cycle impact indicators. Complementary and consistent factors may be used in order to achieve compliance between the Life Cycle Inventory data and the available characterisation factors. EPD which were issued before 31-12-2013 are also accepted if CML IA version 3.9 from Nov 2010 referred to as 'baseline' was used. The corresponding reference has to be indicated in the LCA project report and in the EPD. The characterisation factors were published by CML (Institute of Environmental Sciences, Faculty of Science University of Leiden, Netherlands).

- For every process the water flows are indicated in terms of volume extracted, volume re-emitted and source (e.g. surface water, ground water, sea water).
If tap water is taken (e.g. from the public water supply), the treatment and distribution of water must be taken into account as upstream processes with their corresponding resource consumptions and emissions. Analogously water disposed of in the sewage system has to be connected with wastewater treatment and distribution as downstream processes.
Other water flows, as evaporation water or water input into the product, should ideally be indicated in the inventory of processes in order to achieve a complete water balance.
For every process the water consumption is the amount of water withdrawn from the drainage area/water catchment area. It can be calculated more easily as the sum of water evaporated, transpired by biomass, deposited in a product or transported into another drainage area/water catchment area. The amount of water which would have been withdrawn from the drainage area/water catchment area via a natural system before implementing the technical system will not be included in the balance, as mentioned above.
- If datasets are generated from template EPDs⁴ worst case scenarios shall be adopted. Other datasets are not accepted.
- The life cycle inventory shall not include benefits from CO₂ certificates, since CO₂ certificates are political measures for balancing greenhouse gas emissions which have no correlation with the manufacturing process itself.

3.3.2 Support for the interpretation of the standards for modelling and calculation of indicators for LCA data sets in ÖKOBAUDAT

- In the scenario 'thermal waste treatment', the waste flow reaches the status 'end of waste' not before the burning and the incineration plant has an R1 value < 0,6. The environmental impact of the waste treatment and of the incineration processes are declared as disposal in module C4. The net energy which is produced in the row of waste treatment is declared as exported energy (indicators EEE and EET) in C4 and the corresponding benefits in module D.
The indicator 'materials for energy recovery' (MER) has to be set to '0' in module C4.
Primary energy from raw material use (PERM, PENRE) has to be indicated as negative value in C4 and considered as corresponding flow in module D (indicators PERE, PENRE), if module D is declared.
The global warming potential (GWP) of the biogenic carbon of the wood has to be exported in module C4 (see EN 16485).
- In the scenario 'use of secondary fuel', the waste flow reaches the status 'end of waste' before the energy recovery. Hence, the material flow on the system boundary is qualified as secondary material and the criterion for the R1 value is not applicable. The environmental impacts of the waste processing to secondary fuel are declared in module C3, the material flow is declared as material for energy recovery' (indicator MER) in module C3, the incineration process and the benefits created due to the produced net energy are declared in module D, if module D is declared. The indicators for exported energy (EEE and EET) shall be set to '0' in C3.
Primary energy from raw material use (PERM, PENRE) has to be indicated as negative value in C3 and considered as corresponding flow in module D (indicators PERE, PENRE).
The global warming potential (GWP) of the biogenic carbon of the wood has to be exported in module C3 (see EN 16485).
- In the scenario 'energy recovery', the waste flow reaches the status 'end of waste' not before the

⁴ Template EPDs contain LCA data and verbal descriptions for a typical product of a product group. Manufacturers may use the template EPD as a template for the generation of specific product EPDs, if the product is verifiably represented by the product group.

energy recovery, but the incineration plant has an R1 value > 0,6. The environmental impacts of the waste treatment and of the incineration processes are declared in module C3. The net energy which is produced in the row of waste treatment is declared as exported energy (indicators EEE and EET) in C3 and the corresponding benefits in module D, if module D is declared.

The indicator 'materials for energy recovery' (MER) has to be set to '0' in module C3.

Primary energy from raw material use (PERM, PENRM) shall be indicated as negative value in C3 and considered as corresponding flow in module D (indicators PERE, PENRE).

The global warming potential (GWP) of the biogenic carbon of the wood has to be exported in module C3 (see EN 16485).

- In Module B1 only product inherent properties may be regarded.
- The GWP of biogenic carbon uptake has to be considered as a negative value in modules A1 to A3. Double counting over the life cycle is not allowed.
- The amount of primary energy used as raw material is calculated by the mass multiplied by the lower heating value of the considered raw material.

3.3.3 Additional requirement on background data

- All datasets used for the 'assessment system sustainable building (BNB)' shall be based on GaBi background database. If data from other sources were used in the LCA (other background databases, literature data) this information must be given in the dataset, including an explanatory statement. The data used must not influence the result significantly or must be equivalent to GaBi data modelling regarding method and data quality.
- Additional datasets, which are in principle compliant with the ÖKOBAUDAT requirements, but based onecoinvent background data, are published on the ÖKOBAUDAT platform as well. As they are only by exception to be used within the 'building assessment scheme sustainable building' (BNB - Bewertungssystem Nachhaltiges Bauen), they are not part of the downloadable ZIP archive nor are they directly available by default in the eLCA assessment tool.

3.4 Formal ÖKOBAUDAT rules

The following formal requirements and rules shall be considered, fulfilled or approved respectively.

3.4.1 General requirements

The appropriateness of the LCA data delivered to ÖKOBAUDAT shall be stated in the verification report [or in the critical review report respectively].

Modifications of the programme rules, verification or external review rules, which are relevant for LCA and verification or external review processes respectively, shall be reported to BMI / BBSR immediately, in time ahead of delivery of relevant LCA datasets. Albeit the programme operator (the process workflow of data generation and delivery) shall be examined 3 years after acceptance in order to detect changes in the programme operator (the process workflow of data generation and delivery) which might affect compatibility of the LCA datasets to be delivered with ÖKOBAUDAT.

LCA data generated in the frame of an EPD programme are to be imported into ÖKOBAUDAT exclusively by the programme operator.

3.4.2 Language

In the field of federal responsibility, datasets available in German should be used preferably. However, datasets and corresponding textual information only available in English are in principle acceptable. For English EPD or

LCA datasets it would be desirable for the core information of each description field to be delivered in German language. Also abbreviated versions with links to more detailed information in English are appropriate.

3.4.3 Data format

Data sets shall be provided in the prescribed data format ("ILCD+EPD" data format). Before delivery, the datasets must be checked using the Validation Tool. Detailed information to data format and further technical requirements for ÖKOBAUDAT data see ÖKOBAUDAT-Handbook – Technical description of ÖKOBAUDAT incl. guidance for delivery and use of datasets.

3.4.4 Valid time

BMI / BBSR reserves the right to remove LCA data from ÖKOBAUDAT 1 year after expiration of the valid time. Hence there remains a period of 1 year to the owner of the LCA data for updating the datasets. (Note: Expired datasets are not deleted, but filed or held available in an appropriate place.)

3.4.5 Availability of data

BMI / BBSR is the owner of ÖKOBAUDAT. The applicant must confirm that the owner has released consent for the use of his data within ÖKOBAUDAT under the following conditions:

The applicants give their consent that data published in ÖKOBAUDAT are published on www.oekobaudat.de publicly available at no charge and can be used for further calculation like life cycle assessment of building components and buildings. The owner of the datasets remains responsible for the datasets (contents, values).

3.4.6 Obligation to provide information in case of significant data changes

The data provider must be able to provide information within a reasonable time in the event of significant changes in EPD revisions. The data providers are recommended to anchor corresponding regulations in the programme rules. Programme operators who are unable to fulfil this condition will be de-authorized.

3.5 Applicant's declarations and supporting documents

The applicant provides the declarations and supporting documents (hardcopy form or electronically) mentioned in the application form (www.oekobaudat.de). These comprise amongst others

- Completed application form incl. Declaration of compliance with the „Principles for the acceptance of LCA data in the online database ÖKOBAUDAT“ (Data Category A, B, C)
- Programme rules (only Data Category A)
- List of members PCR panel incl. name, position, institution (only Data Category A)
- List of verifiers and external reviewers respectively, incl. name, position, institution (Data Category A, B,)
- Description of demands on verifiers and external reviewers respectively and verification process or external review (Data Category B – in case of Data Category A covered by programme rules)
- Verification reports and reports of external review respectively (at least on request)
- Access to the PCR documents; indication of internet link incl. required access data (Data Category A, B)
- List of submitted LCA datasets incl. valid time

- Consent of datasets' owner for use in ÖKOBAUDAT

4 Procedure of application and acceptance of LCA data in ÖKOBAUDAT

The procedure of application and acceptance of LCA data in ÖKOBAUDAT comprises the following steps:

1. The applicant classifies his LCA data with the correspondent category of data set according to section 2.
2. The applicant confirms the fulfilment of the requirements in writing in the application form (date, signature, company stamp).
3. The applicant delivers the required declarations and documents of evidence (section 3.5).
4. The check of the documents and data is carried out in responsibility of BMI/BBSR in consultation of the ÖKOBAUDAT users advisory group.
5. After the successful check the applicant may import the data into ÖKOBAUDAT.

Data of Category A

After the documents of evidence have been checked successfully the verified EPD data sets can be imported into ÖKOBAUDAT without essential check with regard to content.

Data of Category B (B1 and B2)

The acceptance of datasets of category B2 needs an affirmation in the users advisory group of ÖKOBAUDAT. The conditions for the acceptance of these datasets are stipulated there individually. After the documents of evidence have been checked successfully LCA data sets which have been generated acc. to DIN EN 15804 und externally verified can be imported into ÖKOBAUDAT. Since guidelines acc. to DIN EN 14025 are missing, an external review has to be brought forward again for every new data set.

6. The applicant delivers the data in the stipulated data format ("ILCD+EPD" data format)⁵. The instruction for this will be provided by BBSR or via the ÖKOBAUDAT website.
7. The imported data will be subjected a plausibility check and a random check in substance, where appropriate by BMI/BBSR. After the successful check the data sets will be published in ÖKOBAUDAT.

⁵ Detailed information to data format and further technical requirements for ÖKOBAUDAT data see ÖKOBAUDAT-Handbook – Technical description of ÖKOBAUDAT incl. guidance for delivery and use of datasets.

5 Literature and standards

- DIN EN ISO 14020 Umweltkennzeichnungen und -deklarationen - Allgemeine Grundsätze (ISO 14020:2000); Deutsche Fassung EN ISO 14020:2001, Februar 2002 (*Environmental Labels and Declarations - General principles*)
- DIN EN ISO 14025 Umweltkennzeichnungen und -deklarationen – Typ III Umweltdeklarationen – Grundsätze und Verfahren (ISO 14025:2006), Deutsche und Englische Fassung EN ISO 14025:2011, Oktober 2011 (*Environmental Labels and Declarations – Type III Environmental Declarations – Principles and Procedures*)
- DIN EN ISO 14040 Umweltmanagement – Ökobilanz – Grundsätze und Rahmenbedingungen (ISO 14040:2006); Deutsche und Englische Fassung EN ISO 14040:2006 (*Environmental Management – Life Cycle Assessment – Principles and Framework*)
- DIN EN ISO 14044 Umweltmanagement – Ökobilanz – Anforderungen und Anleitungen (ISO 14044:2006); Deutsche und Englische Fassung EN ISO 14044:2006 (*Environmental Management – Life Cycle Assessment – Requirements and Guidelines*)
- DIN EN 15804 Nachhaltigkeit von Bauwerken – Umweltproduktdeklarationen – Grundregeln für die Produktkategorie Bauprodukte, Deutsche Fassung EN 15804:2012+A1:2013, Ausgabedatum: 2014-07 (*Sustainability of construction works – Environmental product declarations – Core rules for the product category of construction products*)
- DIN EN 15942 Nachhaltigkeit von Bauwerken – Umweltproduktdeklarationen – Kommunikationsformate zwischen Unternehmen, Deutsche Fassung EN 15942:2011, Januar 2012 (*Sustainability of construction works – Environmental product declarations – Communication format*)
- DIN EN 15978 Nachhaltigkeit von Bauwerken – Bewertung der umweltbezogenen Qualität von Gebäuden – Berechnungsmethode, Deutsche Fassung EN 15978:2011, Januar 2012 (*Sustainability of construction works – Environmental product declarations – Calculation methods*)
- ISO 21930 Hochbau - Nachhaltiges Bauen - Umweltdeklaration von Bauprodukten, (*Sustainability in Building Construction - Environmental Declaration of Building Products*), 2007

A Attachment

A.1 Requirements on an EPD programme

The following Table A.1 lists requirements on an EPD programme as defined in DIN EN ISO 14025.

Table A.1 Requirements on an EPD programme according to DIN EN ISO 14025

Requirement	Basis DIN EN ISO 14025
Verification	
PCR review including review of the LCA, LCI, information modules and additional environmental information on which the PCR are based	section 5.7 and 8.1.2
Independent verification of the LCA, LCI, information modules and additional environmental information on which the declaration is based	section 5.7 and 8.1.3
Independent verification of the Type III environmental declaration	section 5.7 and 8.1.4
Transparency	
Availability of general programme instructions	section 5.9 and 6.4
A list of all published PCR documents within the programme	section 5.9
Availability of PCR documents	section 5.9
Availability of explanatory material	section 5.9 and 7.2.1/ 9.2.3
Programme instructions	
Scope of the programme defined	section 6.2
Responsibilities of the programme operator	
Preparing, maintaining and communicating general programme instructions (a)	section 6.3
Publishing the names of the organizations actually involved as interested parties in the programme development (b)	
Ensuring that the Type III environmental declaration requirements are followed (c)	
Establishing a procedure to safeguard the consistency of data within a programme (d)	
Maintaining publicly available lists and records of PCR documents and Type III environmental declarations within the programme (e)	
Publishing PCR documents and Type III environmental declarations within the programme (f)	
Monitoring changes in procedures and documents of related Type III environmental declaration programmes and revising procedures and documents when necessary (g)	
Ensuring the selection of competent independent verifiers and PCR review panel members (h)	
Establishing a transparent procedure for the PCR review, including the scope of the review, detail of the review and how the PCR review panel is constituted (i)	
Establishing procedures to avoid misuse of references to DIN EN ISO 14025, the Type III environmental declaration programme, its Type III environmental declarations and, where relevant, its logo (j)	
General programme instructions must include at minimum the following information:	
Scope of programme (a)	section 6.4
Objectives of the programme (b)	
Identification of programme operator (c)	
Intended audience of the programme, which may be business-to-business (B-to-B) or business-to-consumer (B-to-C), or both (d)	
Involvement of interested parties (e)	section 6.4
Procedure for definition of product categories (f)	
Procedure for the management of the data and documentation used; such procedures may be based on ISO 14001:2004, 4.4.5, or ISO 14044:2006, Clause 5 (g)	

Data confidentiality management (h)	
Procedure for development and maintenance of PCR (i) - Content of PCR - Rules for period of validity - Selection procedure for pre-determined parameters	
Procedure for independent verification (j) - Competence of verifiers - Competence of PCR review panel	
Funding sources and other resources provided for programme development and operation (k)	
Periodic review of the programme instructions (l)	
Fees, if relevant (m)	
The general programme instructions shall be available to any person on request.	
Involvement of interested parties	section 6.5
Procedure for definition of product categories Product categories defined using a transparent procedure; when products have similar functions and applications, the basis for assigning a group of products to a product category shall be that the same functional unit can be applied.	section 6.6

A.2 Requirements on PCR according to DIN EN ISO 14025 and additional requirements for ÖKOBAUDAT

The following Table A.2 lists requirements on PCR as defined in DIN EN ISO 14025 as well as additional requirements for ÖKOBAUDAT (*blue lettering, in italics*).

Table A.2: Requirements on PCR according to DIN EN ISO 14025 and additional requirements for ÖKOBAUDAT

Requirement	Basis
<i>PCR compliant with DIN EN 15804 and complementary Product Category Rules developed by product-related CEN Technical Committees and examined by CEN/TC 350</i>	<i>ÖBD</i>
Developing the contents of a PCR document	DIN EN ISO 14025, section 6.7.1
Explanations for not using readily available PCR documents in the same product category shall be reported in the PCR document (explain deviations).	
Product category definition and description (e.g. function, technical performance and use) (a)	
Goal and scope definition for the product LCA, according to the ISO 14040 series, including (b) - functional unit - system boundary - description of data - criteria for the inclusion of inputs and outputs - data quality requirements including coverage, precision, completeness, representativeness, consistency, reproducibility, sources and uncertainty - units	
Inventory analysis including (c) - data collection - calculation procedures - allocation of material and energy flows and releases	
Impact category selection and calculation rules, if applied (d)	
Predetermined parameters for reporting of LCA data (inventory data categories and impact category indicators) (e)	
Requirements for provision of additional environmental information, including any methodological requirements (e.g. specifications for hazard and risk assessment) (f)	
Materials and substances to be declared (e.g. information about product content, including specification of materials and substances that can adversely affect human health and the environment, in all stages of the life cycle) (g)	
Instructions for producing the data required to develop the declaration (LCA, LCI, information modules and	

additional environmental information) (h)	
Instructions on the content and format of the Type III environmental declaration (i)	
Information on which stages are not considered, if the declaration is not based on an LCA covering all life cycle stages (j)	
Period of validity (k)	
Competence of PCR review panel	DIN EN ISO 14025, section 8.2.3
General background knowledge of LCA	
General background knowledge of relevant sector, product and product-related environmental aspects	
Expertise in LCA and methodology for LCA work	
Awareness of relevant standards in the fields of environmental labelling and declarations and LCA	
Knowledge of the regulatory framework within the scope of the PCR	
Knowledge of the programme for Type III environmental declarations <i>Not applicable for datasets of category B and C</i>	
In addition, the programme operator shall ensure a reasonable mix of interested party perspectives and competencies.	
PCR review	DIN EN ISO 14025, section 8.1.2
PCR review conducted by a third party panel (at a minimum a chair and two members)	
PCR document includes the results of the PCR review as well as comments and recommendations made by the panel members	
PCR have been developed in accordance with the ISO 14040 series of standards and DIN EN ISO 14025, section 6.7.1 (see above)	
PCR fulfil the general programme instructions <i>Not applicable for datasets of category B and C</i>	
The LCA-based data, together with the additional environmental information prescribed by the PCR, give a description of the significant environmental aspects of the product	

A.3 Requirements on the independent verification according to ISO 14025 *or external critical review² respectively* and additional requirements for ÖKOBAUDAT

As LCA data in ÖKOBAUDAT are available for consumers, section 9.4 of DIN EN ISO 14025 applies („...*Type III environmental declarations used for business to consumer communication ...*“), thus the verification is to be carried out by independent third party („...*The independent verifier ... shall not have been involved in the execution of the LCA or the development of the declaration, and shall not have conflicts of interests resulting from their position in the organization. ...*“).

For LCA data (non-verified EPD data, i.e. datasets of category B2) DIN EN ISO 14040 stipulates a so-called „critical review“ – however the contents of the review are not clearly defined. In order to ensure high data quality for LCA datasets of category B2, an external critical review along the lines of verification according to DIN EN ISO 14025 is required for acceptance in ÖKOBAUDAT (Table A.3).

Table A.3: Requirements on the independent verification according to DIN EN ISO 14025 *or external critical review² (in principle following DIN EN ISO 14025) respectively (highlighted in grey)* and additional requirements for ÖKOBAUDAT *(blue lettering, in italics)*

Requirement	Remark
<i>Identification of verifier / external reviewer (degree, name, institution, position, contact data)</i>	<i>Requirement ÖBD</i>
Independence of verifier / external reviewer <i>The verification is carried out by independent third party (i.e. the verifier shall not have been involved in the execution of the LCA or the development of the declaration, and shall not have conflicts of interests resulting from their position in the organization)</i> <i>For ÖKOBAUDAT external verifiers/reviewers shall be consulted (i.e. not internal to the organization).</i>	DIN EN ISO 14025, 8.2.1/9.4 <i>Requirement ÖBD</i>
Verifier / external reviewer was not involved in the execution of the LCA	DIN EN ISO 14025, 8.2.1
Verifier / external reviewer was not involved in the development of the declaration	
Verifier / external reviewer does not have conflicts of interests resulting from their position in the organization <i>Remark: As ÖKOBAUDAT requires external verifiers/reviewers, this paragraph does not apply.</i>	
<i>Verifier / external reviewer was not appointed by manufacturer or generator of LCA</i>	<i>Requirement ÖBD</i>
Competence of verifiers / external reviewers	
<i>Preferably university degree in engineering or natural science</i>	<i>Requirement ÖBD</i>
<i>Appropriate professional experience in the construction sector or a related field</i>	<i>Requirement ÖBD</i>
<i>Practice in using simulation tools for generating LCA (e.g. GaBi, Umberto, Simapro)</i>	<i>Requirement ÖBD</i>
Knowledge of relevant sector, product and product-related environmental aspects	DIN EN ISO 14025, section 8.2.2
Process and product knowledge of the product category	
Expertise in LCA and methodology for LCA work Example: Evidence by at least 3 LCA generated independently using simulation tools (e.g. GaBi, Umberto, Simapro)	
Knowledge of relevant standards in the fields of environmental labelling and declarations and LCA	
Knowledge of the regulatory framework within which requirements for Type III environmental declarations have been prepared Example: Experience in the critical review of LCA/verification of EPD, evidence by 3 critical reviews of LCA or critical reviews of Type III environmental declarations <i>Not applicable for datasets of category B2, here: Knowledge of the regulatory framework (PCR), for instance if the datasets have been generated using existing regulatory frameworks.</i>	
Knowledge of the Type III environmental declarations programme Example: at least 2 completed EPD verifications under supervision in the frame of a Type III EPD programme according to ISO 14025 <i>Not applicable for datasets of category B</i>	
<i>Knowledge of the ÖKOBAUDAT requirements for modelling and calculation of indicators (see section 3.3)</i>	<i>Requirement ÖBD</i>
Independent verification / independent external critical review of data The independent verification / external critical review of data from LCA, LCI and information modules, and of additional environmental information (according to DIN EN ISO 14025) shall as a minimum confirm	
- conformance of data with the current and relevant PCR documents <i>or with the defined goal and scope respectively, if no PCR were used</i>	DIN EN ISO 14025, 8.1.3
- conformance of data with general EPD programme instructions <i>Not applicable for datasets of category B</i>	
- conformance of data with ISO 14040 and ISO 14044	DIN EN ISO 14025, 8.1.3

Requirement	Remark
that data evaluation includes - coverage - precision - completeness - representativeness - consistency - reproducibility - sources - uncertainty	DIN EN ISO 14025, 8.1.3
- plausibility, quality and accuracy of the LCA-based data - quality and accuracy of additional environmental information - quality and accuracy of the supporting information	
Independent verification of the EPD (not applicable for datasets of category B2)	
Conformance of EPD with ISO 14020 and DIN EN ISO 14025	DIN EN ISO 14025, 8.1.4
Conformance of EPD with general programme instructions <i>Not applicable for datasets of category B</i>	
Conformance of EPD with current and relevant PCR documents <i>Conformance of EPD with DIN EN 15804</i>	
Verification report / report on external critical review	<i>Requirement ÖBD</i>
Verification report (at least on request) / <i>report on external critical review</i> available	DIN EN ISO 14025, 8.1.4
The verification report / <i>report on external critical review</i> documents the verification process / <i>external review process</i> .	
The verification report / <i>report on external critical review</i> confirms whether the information given in the Type III environmental declaration (<i>or EPD without programme respectively</i>) accurately reflects the information in the documents on which the declaration is based. <i>Not applicable for datasets of category B2 as LCA data are not necessarily generated as an EPD.</i>	DIN EN ISO 14025, 8.1.4 <i>Requirement ÖBD</i>
The verification report / <i>report on external critical review</i> confirms whether the information given in the Type III environmental declaration (<i>or EPD without programme respectively</i>) / <i>LCA datasets</i> is valid and scientifically sound	
The verification report / <i>report on external critical review</i> is available to any person upon request.	DIN EN ISO 14025, 8.1.4