# **Verification Statement**

The MRPI recognized verifier shall give a statement about his work and the result, clarifying at minimum:

* Which EPD is addressed;
* That the work concerned is a verification;
* That the verification has been done by an independent third-party;
* That the EPD and project report was verified according to EN 15804+A2 and (if applicable) ECO Platform Standards or other applicable guidelines;
* The PCR and, if relevant, c-PCR, which were applied for the EPD.

# **Final Verification Statement**

Name and signature of

3th party external recognized verifier:

Place and date:

I hereby conform that, following detailed examination as independent 3rd party verifier, I have not been able to trace any unjustified deviations.

Issued for the Environmental Product Declaration(s):

1.

2.

3.

4.

5.

6.

By: *[company name + address]*

Project report from the requirements outlined in the corresponding product category regulations based on:

* EN 15804+ A1
* EN 15804+ A2

The Company-specific data have been examined as regards plausibility and consistency; the declaration owner is responsible for its factual integrity.

The project report on the Life Cycle Assessment is filed at *[company name]* and the report(s) on features of environmental relevance are filed at Stichting Milieu Relevante Product Informatie.

# **Verification checklist MRPI EPD+ LCA project report**

Below, the verification checklist for MRPI EPD+ LCA project reports is presented, for verification of an MRPI certificate that complies with both the ECO Platform and Stichting NMD Guidelines. All subjects mentioned in the list below must be checked and approved. The checklist follows the order of the original ECO Platform checklist for verification, with additional guidance when specific NMD PCR requirements apply.

The verification checklist is based on the following guidelines/standards and versions:

* Verification Guidelines for ECO EPD Programme Operators, Version 8.0, ECO Platform, December 2024.
* LCA Calculation Rules and Specifications for EPDs, Version 2.0, ECO Platform, December 2024.
* Bepalingsmethode Milieuprestatie Bouwwerken, Versie 1.2, January 2025, including amendments 1 & 2.
* NMD-Toetsingsprotocol Opname data in de Nationale Milieudatabase, Versie 1.2, August 2024.

The table contains the following columns:

* Reference (number) of the verification topic or subject;
* The verification topic or subject, following the order of the ECO Platform verification guidelines;
* Additional requirements from the NMD PCR, adopted from the NMD review protocol;
* Specification whether the topic is mandatory or optional;
* A reference to EN, ISO and/or PCR standards;
* An indication to be used by the MRPI recognized verifier to state if the topic is approved;
* *Optional:* The checklist may be expanded with additional columns to serve as dialogue document.

When the corresponding subjects in the LCA project report comply with the requirements and guidelines in the applicable references, the box “C & A” (check and approved) can be ticked. Most issues are mandatory to check, some can be optional. When all boxes can be checked, the report can be approved.

Any deviations from the requirements should be reported by the MRPI recognized verifier and the dialogue between MRPI recognized verifier and LCA consultant or applicant should be made transparent as well as improvements made following the verification process. This can be done separately from the checklist in the dialogue document (an example is provided in the last part of this annex).

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **1** | **General information** | **NMD PCR addition** | **Mandatory/ optional** | **Reference** | **Checked and approved** |
| 1.1 | Commissioner of LCA study, LCA practitioner. |  | M | EN15804+A2 ch.8.2 |  |
| 1.2 | Date of issue of LCA report. |  | M | EN15804+A2 ch.8.2 |  |
| 1.3 | Statement that the Life Cycle Assessment study has been performed in accordance with the requirements of EN 15804 and applicable PCR (date and version) and **JRC characterization factors (version).** | Add to the statement that the LCA is in compliance with ISO 14040, ISO 14044 and the most recent version of the NMD assessment method including applicable amendments. Also state that any EPD derived from the analysis complies with ISO 14025. | M | EN15804+A2 ch.8.1/8.2 + applicable PCR, Joint Research Center: https://eplca.jrc.ec.europa.eu/LCDN/EN15804.xhtml; NMD PCR |  |
| 1.4 | Statement of the version of EN15804+A2:2019 used for the study and EPD. |  | M | EN15804+A2 ch.8.2 |  |
| 1.5 | Any other independent verification of the data given in the LCI/LCA documentation? |  | O |  |  |
| **2** | **Study goal** | **NMD PCR addition** | **Mandatory/ optional** | **Reference** | **Checked and approved** |
| 2.1 | Reasons for performing the Life Cycle Assessment. |  | M | EN15804+A2 ch.8.2 |  |
| 2.2 | Intended application – (e.g. for EPD, databases, publication etc.). |  | M | EN15804+A2 ch.8.2 |  |
| 2.3 | Target group (B2B, B2C,). |  | M | EN15804+A2 ch.8.2 |  |
| **3** | **Functional unit / Declared unit** | **NMD PCR addition** | **Mandatory/ optional** | **Reference** | **Checked and approved** |
| 3.1 | Functional / Declared unit, including relevant technical specification as required in ECO Platform LCA Calculation Rules.   *Calculation Rules chapter 2.1:* *The functional unit of a construction product shall comply with EN 15804+A2, ch. 6.3.2.1 and any requirements in the relevant cPCR.* | The functional unit complies with the "functionele beschrijvingen" (functional descriptions) of Stichting NMD, the most recent list is accessible on www.milieudatabase.nl. The correct reference to the functional description is included. It is clear whether it concerns a "totaalproduct" (complete product), in which case it has been checked that all mandatory components have actually been included in the study. If it concerns a "deelproduct" (partial product), it is clearly described within which complete products and which component (CUAS categorization) the partial product is included. | M | EN 15804+A2, ch. 6.3.1-6.3.3; Applicable c-PCR; LCA Calculation Rules V2.0, ch. 2.1; NMD PCR |  |
| 3.2 | Indication of a factor for the conversion into kg, if applicable. |  | M | EN15804+A2: ch.6.3.2.1 and ch.6.3.3 |  |
| 3.3 | If product groups (similar products from one manufacturer and/or from different production plants) are declared: a. Description of the type of the EPD (e.g., average, representative product or worst-case product); b. Rules for the calculation of the declared results and content; c. Representativeness of the declared results and content. |  | M | EN15804+A2: ch.8.2 |  |
| **4** | **Product description** | **NMD PCR addition** | **Mandatory/ optional** | **Reference** | **Checked and approved** |
| 4.1 | Composition of the product  *Calculation Rules chapter 2.2:* *The level of detail that is required is the following: ▪the main components necessary to understand what type of product is concerned (detailed mass description is not necessary if confidential). ▪In case of average EPD: at minimum qualitative description of averages and qualitative description of ranges.* |  | M | ISO 14025; LCA Calculation Rules V2.0, ch. 2.2 |  |
| 4.2 | Description of technical and functional characteristics and area of intended application in the building. In case of EPD of product group: at minimum qualitative description of the products included and qualitative description of ranges of functions. |  | M | Applicable European product standard or c-PCR |  |
| 4.3 | Flow diagram of the product system, divided into the life-cycle stages, showing the main processes included and the system boundary of the LCA. The stages may be further divided into modules. | The life cycle of the construction product must be modelled in the form of a flow diagram (*stroomdiagram / procesboom*). The flow diagram includes all economic flows (both goods (materials, products) and services), both qualitative (names of the processes) and quantitative (quantities), that are required for the product unit or to fulfil the function(s) from the functional unit.  If the flow diagram becomes unclear because it consists of too many components, a diagram with the most important components may suffice. The other matters can be included in table form per information module.  Incidents, such as unforeseeable damage, are not included in the process tree. | M | EN 15804+A2: ch.7.2.1; NMD PCR |  |
| **5** | **System boundaries in accordance with the modular design of the EN 15804+A2** | **NMD PCR addition** | **Mandatory/ optional** | **Reference** | **Checked and approved** |
| 5.1 | Description of Life Cycle stages/modules declared. Omissions of the life cycle stages declared. Visualization of system boundaries. Level of detail: see LCA calculation rules and specifications for EPDs. |  | M | EN15804+A2 ch. 5.2 (incl. Figure 1) |  |
| 5.2 | Comprehensive declaration of modules A1-A3, C and D as a minimum requirement, unless conditions for excluding C and D in EN 15804+A2 ch. 5.2 are met. If necessary, A1-A3 can be reported. separately or as an aggregated module. Recommendation: A1-A3 must, if declared separately, also be reported in an aggregated column to facilitate comparison. | Restriction on declarations that only include modules A1-A3 (basisprofiel): only allowed if conditions for excluding C and D in EN 15804+A2 ch. 5.2 are met. | M | EN 15804+A2, ch. 6.3.5; EN 15804+A2, ch. 5.2; LCA Calculation Rules V2.0, ch. 2.3; NMD PCR |  |
| 5.3 | A1 to A3: System boundary • Clear description of what the modules cover; • System boundary to nature (e.g. in the case of forests between nature and technosphere); • Use of secondary materials and secondary fuels and waste produced (check end-of-waste state); • Fulfilment of requirements regarding offsetting. |  | M | EN 15804+A2, ch. 6.3.5.2; applicable c-PCR |  |
| 5.4 | A4 to A5 optional module, thus if covered: Clear description of system boundaries. | Not optional. The transport phase (A4) starts when the construction product or element is ready for transport to the customer at the manufacturer and ends when it is delivered to the construction site and is unloaded from the means of transport. Installation (A5) is taken into account by using one or more scenarios, in addition to 'losses in the form of construction waste’ for which standard values are included in paragraph 2.6.3.6 of the NMD assessment method. | M | EN15804+A2 ch. 6.3.5.3; NMD PCR |  |
| 5.5 | Accounting impact of losses in the modules in which they arise. |  | M | EN15804+A2 ch. 6.2.1 and 6.3.5.1 and 6.3.5.3 |  |
| 5.6 | B1 and B7: (optional modules except for EEE-construction products, thus if covered): Clear description of system boundaries.  *LCA calculation rules 2.3 on B modules:* *▪ B6 (energy consumption) shall be added in the calculation of EPD of final products which are consuming energy, directly or indirectly1. B6 shall be presented separately to let users of the EPD accommodate the calculation when appropriate. ▪ If there is no c-PCR available the programme operator may provide a justified use scenario to apply for each family of products (or product category) that it covers within its programme, together with the related calculation formula when appropriate. Usually this will be done through a PCR publication. ▪ When an existing regulation applies to the calculation of B6 at the geographical scope that the EPD states it covers, the “justified use scenario” to calculate B6 shall be the more demanding regulation applying to the entire scope (see also calculation rules ch. 2.10.1).* | Check the system boundaries of the use phase modules: B1 - The use of the construction product (life cycle phase B1) concerns its application in the Netherlands. B2 - Maintenance (life cycle phase B2) concerns only material related maintenance, and not building related or location related maintenance. Cleaning maintenance only if functionally important. B3 - Repair (life cycle phase B3). B4 – Replacement of the entire product is recorded in the calculation rules at building level by means of a multiplication of the environmental declarations. Replacement of the entire product is therefore not reported separately in the usage phase. Replacement of components that do not last the lifespan of the entire product is included here. B5 – Renovation (life cycle phase B5) is not part of the assessment method (declared as 0 impact). | M | EN15804+A2 ch. 6.3.5.4; NMD PCR |  |
| 5.7 | In addition, for Products using energy in module B6 of the use stage and permanently installed into building or infrastructure (defined by the manufacturer): B6 is mandatory for EPDs of products using energy in the use stage. Any maintenance [B2], repair [B3] and replacement [B4] processes which are required to achieve the stated service life of the products using energy in the use stage and emissions in use [B1] shall also be described as technical scenarios in the EPD. |  | M | LCA Calculation Rules V2.0, ch. 2.10 |  |
| 5.8 | C1 to C4: Clear description of system boundaries. | C1 - The demolition phase, which starts when the building is decommissioned and ends when the building is demolished or dismantled. This phase therefore includes the work on the demolition site. C2 - Standard values ​​for the transport distances to sorting locations, landfill sites and waste incineration plants (AVIs) are included in paragraph 2.6.3.6 of the NMD assessment method. | M | EN15804+A2 ch. 6.3.5.5; NMD PCR |  |
| 5.9 | C3: Clear description of the declared scenarios, like: • Waste treatment • Materials for recycling • Impacts of recycling processes to achieve end of waste • Justification of the “end-of-waste state”  a. Existing purpose  b. Existing market or demand  c. Compliance with technical requirements and legal guidelines  d. Fulfils limit values for Substances of Very High Concern (SVHC) | C3, C4 and D - The environmental effects are calculated using the ‘verwerkings- scenario’s einde leven’ as published on www.milieudatabase.nl. In module D all deducted environmental interventions are included. | M | EN15804+A2 ch. 6.3.5.5 + table 8 + ch. 7.2.4.4 + annex B.1; NMD PCR |  |
| 5.10 | C4: Is the complete waste disposal process included in this module? Is its inclusion described transparently and is it plausible?  Carefully check the correct allocation for deposition of biogenic material.  *LCA calculation rules ch. 2.3 on C modules:* *C4: The degradation of a product’s biogenic carbon content in a solid waste disposal site, declared as GWP biogenic, shall be calculated without time limit. Any remaining biogenic carbon is treated as an emission of biogenic CO2 from the technosphere to nature.* | For landfill processes, a period of 100 years after landfill is assumed as the end point (see also 2.6.3.6 under generic data in the NMD assessment method). | M | EN 15804+A2, ch. 6.3.5.5 and ch. 6.3.5.6; LCA Calculation Rules V2.0, ch. 2.3; NMD PCR |  |
| 5.11 | D: System boundary and loads and benefits of all relevant modules shall be clearly described and justified.  Assumptions with regard to substituted processes in D incl. year of reference (e.g. assumptions with regard to substitution of energy production). | Raw material equivalents are clearly described in accordance with the requirements of the NMD Assessment Method (2.6.3.4) and plausible. | M | EN15804+A2 ch. 6.3.5.6; NMD PCR |  |
| 5.12 | D: Check if the net flow calculation is done correctly taking into consideration relevant factors, e.g.: *• Processing losses over the whole life cycle (including collection and pre-processing); • Inputs in Modules A1 to A3 (and A4 to B5 if necessary); • The reaching of end-of-waste-state by all waste flows considered in module D.* | Paragraph 2.6.4.3 and appendix V of the NMD Assessment Method describe how the net impact of module D should be calculated. The calculation is clearly documented and plausible. The following aspects are substantiated in this: - A mass balance in which all individual input flows of secondary raw materials and all output flows of materials for recycling are included. - The quality and quantity of the materials for recycling, which are used as secondary materials, must be determined. - Any waste flows from the recycling process are included. - Module D is calculated on the basis of the sum of the net output of the individual flows of secondary raw materials.  For the end-of-waste phase, the system boundary is determined according to Annex IV of the NMD Assessment Method. If a material, product or element remains without fulfilling a further function (‘laten zitten zonder functie’), it is treated as landfill. | M | EN15804+A2 ch. 6.3.5.6 and 6.4.3.3; NMD PCR |  |
| 5.13 | D: No benefits or loads of allocated co-products. |  | M | EN15804+A2 ch. 6.3.6.5 and ch.6.4.3.3 |  |
| **6** | **Power mix** | **NMD PCR addition** | **Mandatory/ optional** | **Reference** | **Checked and approved** |
| Info | Terms & Definitions Definitions for the terms “market-based approach”, “location-based approach”, “Contractual Instrument”, “reliable and transparent book and claim registry”, “Guarantee of Origin (GO)”, “Consumption Mix” and “Residual Mix” are provided in EN 15941, ISO 14067 and/or the LCA Calculation Rules ch. 2.5. |  |  | EN 15941; ISO 14067; LCA Calculation Rules V2.0, ch. 2.5. | n/a |
| 6.1 | Do the main LCA results in the EPD follow the EPD programme’s the choice of the market-based approach (contractual instruments allowed) or Location-based approach [contractual instruments not allowed) for electricity? |  | M | LCA Calculation Rules V2.0, ch. 2.5; EN 15941; applicable PCR |  |
| 6.2 | **Electricity rules if the market-based approach is used for either the main results or for an additional set of results (rules in addition to ISO 14067 and EN 15941).** |  |  |  |  |
| 6.2.1 | If Contractual instruments (e.g. GO) have been used: Is there a registry for the Contractual instrument and is the registry a “reliable and transparent book and claim registry”? Validity period of the certificates for contractual instruments (date of purchase must relate to period of production and primary data collection on site) in accordance with the PCR?  If these requirements have not been met for contractual instruments, has the residual mix been used? |  | M | Applicable PCR; LCA Calculation Rules V2.0, ch. 2.5 |  |
| 6.2.2 | For an entity producing more than one product, electricity with contractual instruments shall not be virtually allocated to specific products unless a separate energy supply and contract is in place. |  | M | LCA Calculation Rules V2.0, ch. 2.5 |  |
| 6.2.3 | **Foreground data in the control of the manufacturer  Case 1: Manufacturer produces energy on site or is directly linked to plants nearby:**  Check on electricity amounts from accounts. Check if any contractual instruments have been generated and supplied into the market for the electricity used on site. If yes, then has residual mix been used?  In case of any export, contractual instruments can only cover the exported electricity Has the generated mix been modelled correctly?  Note 1: Attention: LCA-models for CO2 figures (or other indicators in the contractual instrument documentation and/or on energy bills may be different from LCA models needed to fulfil EN 15804+A2/ISO 21930 and construction related PCRs/this guidance paper on hand. The figures cannot replace each other.  **Case 2: Electricity provider chosen from national state with legislation for electricity labelling\*, e.g. Austria:** Energy mix is found in detail on contracts/bills, registry for proof of origin existing, no residual mix necessary, everything is marked. Check on documentation as required in ECO Platform LCA calculation rules and specifications for EPDs Has the provider energy mix been used?  **Case 3: Electricity provider chosen from national state with a “reliable and transparent book and claim registry” [e.g. covered by AIB registry in EU]** If compliant contractual instruments (see 6.2.2) have been provided, has the supplier mix been used? If no compliant contractual instruments have been provided, has grid electricity been modelled with the residual mix using the published mix if provided [case 3a)], or calculated correctly based on the calculation rules ch. 2.5 if not published [case 3b)]?  **Case 4a**: EU/EAA national states (or federal states) with no registry – all EU/EAA states are covered by the AIB registry, see Case 3a).  **Case 4b**: Energy provider from national states (or federal states) with no registry (outside EU and EEA). Check the ECO Platform List to ensure that no registry exists for the state or region. Only if there have been no compliant Contractual Instruments and registry can consumption mix be used, otherwise consider as per the ECO Platform list (case 2/3a/3b/4c as appropriate).  **Case 4c**: Energy provider from national state with one or more registry but no “single reliable and transparent book and claim registry”, outside EU, e.g. Turkey, US. If valid contractual instruments been provided, has the contractual mix been modelled? If not, has grid electricity been modelled on the residual mix, calculated according to the calculation rules? |  | M | ISO 14067; EN 15941; LCA Calculation Rules V2.0, ch. 2.5, table 2 |  |
| 6.2.4 | Background data: have the recommendations of Table 3 in the LCA Calculation rules been applied?  Has justification been provided if they have not been followed? |  | O | LCA Calculation Rules V2.0, ch. 2.5 |  |
| 6.2.5 | If location-based modelling is used for the main results or is used to provide results as additional information, have the requirements from LCA Calculation Rules 2.5.1 and Table 2 been implemented?  Has the national consumption mix been used (except for Australia, Brazil, Canada, China, India, and USA subnational consumption mix shall be used)? |  | M | Applicable PCR LCA Calculation Rules V2.0, ch. 2.5.1, Table 2 |  |
| 6.2.6 | Reporting and communication done as required in EN 15941:2024 and the LCA Calculation Rules. The report clearly states which approach [marketbased or location-based] has been used for electricity for any modelling and results.  The required documentation is provided, and meets the requirements of the Calculation Rules, for: - Any on-site generated electricity - Any directly connected electricity - Any electricity supplied for Case 2 - Any use of contractual instruments - The calculation of the residual mix  The modelling of electricity [datasets used, reference year, GWP/kWh] in the foreground system has been described and meets the requirements of the calculation rules. |  | M | EN 15941; LCA Calculation Rules V2.0, ch. 2.5 |  |
| 6.3 | Biogas |  | M | EN 15941, Annex E2.3 |  |
| 6.3.1 | If a PO allows the calculation of Biogas (the market based approach):  Are the LCA Calculation rules for any on-site generated biogas or directly connected biogas met?  Is the supplier able to guarantee that any contractual instrument meets the requirements for tracking and traceability, see EN 15941 E.2.1.  For gas purchased without contractual instruments, has the residual mix been applied? |  | M | EN 15941, Annex E2.1 and E2.33; LCA Calculation Rules V2.0, ch. 2.5.2 |  |
| 6.3.2 | If a PO does not allow the calculation of Biogas (the location-based approach):  Has the consumption mix been used for gas from the gas network, and any biogas from a directly connected supplier and/or internally generated biogas been modelled based on the supplied gas? |  | M | LCA Calculation Rules V2.0, ch. 2.5.2 |  |
| 6.3.3 | Additional information for transparency given as stated in the ECO Platform LCA Calculation Rules  The report clearly states which approach [market based or location-based] has been used for biogas for any modelling and results.  The required documentation is provided, and meets the requirements of the Calculation Rules, for: - Any on-site generated biogas - Any directly connected biogas - Any use of contractual instruments - The calculation of the residual mix  If gas accounts for more than 30 % of the total energy use in stage A1-A3, provide in the Project Report, the GWP-total of the applied gas mix in kg CO2e/MJ, e.g. of any gas purchased with contractual instruments or biogas used in the foreground manufacturing processes, and any other processes which the manufacturer has direct control over. |  | M | LCA Calculation Rules V2.0, ch. 2.5.2; EN 15941, Annex E 2.8.1 |  |
| **7** | **Criteria for excluding inputs and outputs** | **NMD PCR addition** | **Mandatory/ optional** | **Reference** | **Checked and approved** |
| 7.1 | Selection of the cut-off criteria, description of application of the criteria and assumptions in line with standard and PCR? (Note: A complete mass balance is normally not possible without high effort. This is why cut-off decisions are often based on assumptions about the effect of the flow that has been cut off). | All inputs and outputs for which data is available are included in the calculation. • Estimates for missing data have been made conservatively (‘worst case’). • Process data include infrastructure and capital goods (such as the generic Ecoinvent data).  The evaluation of the environmental effects for ignoring inputs and outputs must be based on the environmental effects from set 2 and the environmental effects from set 1. Within set 2, only the result of the indicator ‘Climate change – total’ is considered for the contribution of the environmental effects to climate change. | M | EN15804+A2: ch. 6.3.6 and ch. 8.2; NMD PCR |  |
| 7.2 | List of excluded processes declared? | Any deviations from the above have been substantiated / reported. | M | EN15804+A2 ch. 8.2; NMD PCR |  |
| **8** | **Data collection, electing background data** | **NMD PCR addition** | **Mandatory/ optional** | **Reference** | **Checked and approved** |
| 8.1 | Selection and use of background data (specific and/or generic) justified and validity demonstrated? | The background database as prescribed in the NMD assessment method must be applied. | M | EN 15804+A2, ch. 6.3.7; EN 15941; NMD PCR |  |
| 8.2 | Data collection, including data quality issues, according to LCA rules: • Assessment period for each module considered in the Life Cycle Assessment (e. g. one year average, etc.); • Appropriateness of background data (temporal, geographical, technological); • Other assumptions concerning background data, e.g. about data gaps; • Assumptions regarding energy and electricity production incl. year of reference. It should also be transparent which electricity/energy model is applied as avoided product if energy recovery is included in the optional Module D; • Assumptions concerning other relevant background data where relevant for the system boundary. |  | M | ISO 14044:2006, section 4.3.2; ISO 14040 section 5 (and 6); EN 15804+A2, ch. 6.3.7 + ch. 6.3.8; EN 15941, ch. 7.3.2 |  |
| 8.2.1 |  | The order of preference for determining emissions is: 1. Methods designated in laws, decrees or ministerial regulations; 2. Methods from industry standards; 3. Methods described in (possibly sector-specific) private law agreements. | M | NMD PCR |  |
| 8.2.2 |  | All environmental interventions from the most recent CML-NMD method available via www.milieudatabase.nl for set 1 and that of the International Reference Life Cycle Data System (ILCD) Handbook (“identified by the name EN 15804+A2”) must be considered. The following interventions must have a value as a minimum: — emissions to air when using thermal energy of CO2, CO, NOx (NO2 and NO), SO2, CxHy and particulate matter (PM10: particles < 10 µm); — emissions to water of COD, BOD, P-total, N-total and solid matter (PM10: particles < 10 µm); — emissions to soil of PAHs and heavy metals; — other emissions for which requirements are imposed on the producer of the construction product under environmental legislation. | M | NMD PCR |  |
| 8.2.3 |  | The CML-NMD environmental interventions are assigned a value, unless the value is unknown. Three options are possible: 1) A positive or negative value; 2) The value 0 (for all interventions whose value is below the detection limit); 3) A question mark (if it is unknown whether the intervention is taking place). | M | NMD PCR |  |
| 8.2.4 |  | Where available, sum parameters (such as NOx, CxHy, COD, BOD, P-total, N-total, PAH10 and heavy metals) must be broken down into their individual components in order to obtain an accurate characterisation. The standard list contains a number of sum parameters for which characterisation factors are also available.  The intervention value of the sum parameters can be entered in two ways: a) The intervention value of the sum parameter is known. This is entered. b) One or more individual substances are known, but only a characterisation factor is available for the sum parameter. A sum parameter can be a representative characterisation value for the sum of a group of substances for a specific environmental effect, for example PAHs. In that case, the values for the substances underlying the sum parameter are then entered using the som parameters' intervention value, in accordance with the mass contribution for each substance to get an accurate total. c) If characterisation factors are available for a limited number of substances underlying the sum parameter, the sum parameter is calculated for each, after which the results are averaged and used for the missing substances. | M | NMD PCR |  |
| 8.2.5 |  | Data collection of biogenic carbon: Both biogenic carbon uptakes and emissions are modelled in the modules in which they occur. See also NMD guideline / roadmap on dealing with Biogenic Carbon Storage. | M | NMD PCR |  |
| 8.2.6 |  | Data collection of waste: is for all outgoing flows considered whether it is waste? Has the end-of-waste status been checked? Has any waste been determined to be hazardous waste? | M | NMD PCR |  |
| 8.2.7 |  | If a supplier uses industry average data (cat. 2), it must be demonstrated that the supplier is part of this particular industry average. | M | NMD PCR |  |
| 8.2.8 |  | If (background) processes or standard values from different regions are available, the following order of priority is used: 1) the country in question; 2) a comparable neighboring country; 3) the region in question (e.g. North-West Europe); 4) the (part of) continent in question; 5) the world. | M | NMD PCR |  |
| **9** | **Validity of data** | **NMD PCR addition** | **Mandatory/ optional** | **Reference** | **Checked and approved** |
| 9.1 | Represent a reference year within 10 years for generic data. • Represent a reference year within 5 years for specific data. • Specific data based on 1 year average, unless an exception is justified. • Time period of 100 years over which inputs and outputs from the product system shall be accounted for. In case of landfill scenario: longer, if relevant. • Technical coverage of data complies with physical reality. • Integrity of generic data records, system boundary and cut-off criteria for generic data records validity demonstrated. | The processes in the product system must provide a representative or typical picture of the current geographical and technological situation. The area of ​​application to which this standard relates is the Netherlands. ‘Representative’ means that the data accurately reflect the real population. ‘Typical’ means that the data describe a specific, frequently occurring situation. | M | EN15804+A2 ch. 6.3.8; EN15941; NMD PCR |  |
| 9.1.1 |  | In case of an average product, the average composition is based on: annual or multi-year figures of the entire production, weighted by production; or on a composition covering more than 80% of the production quantity in that year of study. | M | NMD PCR |  |
| 9.1.2 |  | If all production locations for a specific product provide data in the case of horizontal aggregation, the result is automatically representative for the group in question. If not all production locations in the group provide data, a representative cross-section must be made from the group of production locations, insofar as they produce for the Dutch market, with regard to geographical and technical differences that can lead to differences in environmental impact. | M | NMD PCR |  |
| 9.1.3 |  | The value of an environmental intervention must be an average of measurements or calculations over a period of time, within which fluctuations due to seasonal influences, measurement methods, etc. are averaged out. | M | NMD PCR |  |
| 9.2 | Documentation on background data (specific and/or generic): • name of the data record; • its source (database, bibliographic source, etc.); • year of data collection and its representativeness.  Handling missing data Assessing data quality (time, geographical and technological representativeness). Documentation of data quality for all datasets with a major contribution, together contributing to at least 80% of the results of the core environmental impact indicators.  Check on plausibility, comparison of indicators with others from datasets verified EN 15804+A2 and applicable c-PCR or comparison of flows and/or indicators of other significant sources of information. | The documentation format and datasets for the life cycle inventory data used in the LCA modelling use the current ILCD format and nomenclature as defined in the document “International Reference Life Cycle Data System (ILCD) Handbook - Nomenclature and other conventions”, available from the central website of the European Commission. | M | EN 15941 ; NMD PCR ; EN 15804+A2, Annex E |  |
| 9.2.1 |  | The data quality is based on the principle that the data quality of the data of the processes that take place at the manufacturer of the construction product must be higher than that of the other processes. Furthermore, the principle is used that the economic flows must approximate reality as closely as possible within practically feasible limits for the executor of the LCA. If the aforementioned ILCD format has not (yet) been followed, the data quality must be assessed with a data quality system according to Annex D of the NMD review protocol and any additional instructions laid down by the NMD. | M | NMD PCR |  |
| 9.2.2 |  | Suppliers and customers (if applicable) of the relevant production locations of the construction product must be asked to provide data on the production process in accordance with the same requirements that this standard sets for manufacturer data. | M | NMD PCR |  |
| 9.2.3 |  | If a supplier or customer (if applicable) does not provide any or insufficient data, public sources, industry figures and literature data will be used. In that case, it will be checked whether there are any deviations from the NMD regulations. Any deviations must be stated in the assessment report (see also NMD assessment method 2.6.3.7).  The reviewer must also indicate whether the deviation is so significant that the deviation must be stated in the report, review statement and EPD. | M | NMD PCR |  |
| **10** | **Development of scenarios at product level in modules A4-A5-B-C-D** | **NMD PCR addition** | **Mandatory/ optional** | **Reference** | **Checked and approved** |
| 10.1 | Statement that the scenarios included are currently in use and are representative for one of the most likely scenario alternatives.   Declaration of additional representative scenarios for the relevant region(s) is permissible. | C3, C4 and D - The environmental effects are calculated using the ‘verwerkings- scenario’s einde leven’ as published on www.milieudatabase.nl. In module D all deducted environmental interventions are included.  As an exception to the rule of actuality, a future scenario may be assumed for the disposal scenario if the condition is met for a plausible working (return) system at the time of disposal. If there is a deviation from the actuality requirement, this must be transparent. The plausibility of this has been explicitly tested. A more elaborate instruction is provided in the NMD assessment method, section 2.6.3.9. | M | EN 15804+A2, ch. 6.3.9; applicable PCR |  |
| 10.1.1 |  | The following obligatory rules ​​apply for transport distances: - transport distance one way to the construction site if the construction product is produced in the Netherlands: for bulk material 50 km, for other materials, products and elements 150 km; for civil engineering works, the - transport distance per project is calculated in the calculation tool. - location to determine transport distance of materials from abroad to and from the construction site or customer in NL: Utrecht (only if actual transport distance is unknown);  - end-of-life processing scenarios as published on https://milieudatabase.nl; - transport distance one way from demolition site to sorting and/or crushing plant, or storage location for reuse: 50 km; - transport distance one way soil removal: 50 km; - transport distance one way from demolition or sorting site to landfill site: 100 km; - transport distance one way for combustible material from demolition site to waste incineration plant (AVI): 150 km;  - transport distance for products that remain at disposal site (‘laten zitten’): 0 km. | M | NMD PCR |  |
| 10.1.2 |  | For the loss product during installation (waste at construction site), the following standard values ​​from the NMD Assessment Method apply: - Prefab products; It has been assumed that 3% of the materials are lost (on the construction site or during transport). - In-situ products: It has been assumed that 5% of the materials are lost. - Auxiliary and finishing materials: It has been assumed that 15% of the materials are lost.  If a deviation from these standard values ​​is desired, this is possible provided that this is substantiated quantitatively with research results. | M | NMD PCR |  |
| 10.1.3 |  | In the case of combustion in a waste incineration plant (AVI), the avoided energy production can be offset in module D from the amount of net exported energy (MJ per energy carrier). See more on the assumptions for AVI in NMD Assessment method section 2.6.3.7. | M | NMD PCR |  |
| 10.1.4 |  | If there are multiple installation options for a product (or functional unit) that have an impact on the end-of-life phase and/or the options for reuse, recovery or recycling, multiple environmental profiles (C1-C4, D) can be created. The following conditions apply: — the product is actually supplied suitable for the application; — additional (auxiliary) resources and/or substances are declared in the relevant module D; — specific design conditions for application are clearly described; — disposal scenarios are current, the same exception as described above applies. | M | NMD PCR |  |
| 10.2 | Documentation of the relevant technical information, e.g. recycling or reuse rates, with references? |  | M | EN 15804+A2 table 8 |  |
| 10.3 | Default values in CEN TC c-PCR shall be checked on applicability for the product. Deviations from these values must be justified. |  | M | Applicable c-PCR |  |
| **11** | **Allocation** | **NMD PCR addition** | **Mandatory/ optional** | **Reference** | **Checked and approved** |
| 11.1 | General allocation principles applied (avoidance of allocation, no double counting (unless due to a conservative assumption) or omissions, uniform application of the allocation rules, sum of inputs and outputs of a unit process after allocation must be equivalent to sum of inputs and outputs before allocation etc.). |  | M | ISO14044:2006 4.3.4 |  |
| 11.2 | Presentation and justification of allocations in the use of secondary materials or secondary fuels as raw materials. |  | M | EN15804+A2. 6.4.3 + 8.2; applicable PCR |  |
| 11.3 | Presentation and justification of allocations in the plant (allocation between different products/production lines in a plant). |  | M | EN15804+A2. 6.4.3 + 8.2; applicable PCR |  |
| 11.4 | If applicable: Presentation and justification of allocation of multi-input processes (e.g. landfilling or incineration). |  | M | applicable PCR |  |
| 11.5 | Allocation of co-products: • Selection of the allocation factors for co-product allocation and justification of allocation method; • Justification of allocation method (e.g. if data are not available to allocate according to the EN 15804+A2 rules); • Presentation of the energy and material flows in case of deviating allocation method; • No declaration of loads and benefits in Module D of flows undergone co-product allocation. |  | M | EN15804+A2 ch. 6.4.3.2; applicable PCR |  |
| 11.5.1 | Economic allocation for processes producing co-products used in cement and concrete, e.g. blast furnace slag, crystallised basic oxygen furnace slag, fly ash, artificial gypsum, silica fume, aluminium-oxide-containing co-products. • Economic allocation has been used to assign impact to these low value co-products. • Even where the co-product's contribution to the overall revenue of the co-production process is less than 1%, economic allocation has been used to assess the impact, even if small, for low value co-products. • When assessing steel, coal-fired electricity, and other processes producing these co-products, physical partitioning and other forms of allocation have not been used to assign impact to low value co-products.  See also LCA Calculation Rules section 2.6 | Check any c-PCR underlying the NMD PCR: must comply with ECO Platform | M | EN 15804+A2; EN 16908; ECO Platform decision |  |
| 11.6 | Documentation of allocation factors used and their (independent) sources. |  | M |  |  |
| 11.7 | Allocation process for reuse, recycling and recovery, check specifically: • End-of-waste state, Consistency with other scenarios of waste management; • Technology representativeness for the region / country; • Specification and justification of end-of-waste state where applicable; • If applicable (module D): Selecting substituted processes in accordance with the PCR or (if no PCR is available) representative actual processes.  NOTE: Application of the “polluter pays” principle to the use of waste as substitute for primary fuels or materials is left to the programme operator. • If applicable (substitution in Module D): Calculation of net flows. • Conservative approach, i.e. choice of those scenarios and calculation rules that reflect the highest environmental impacts in comparison to other choices. |  | M | EN15804+A2 ch.6.4.3.3; applicable PCR |  |
| 11.8 | Justification if generic data is applied which does not comply with the allocation principles, or where this compliance is not known and there are reasons to doubt it. Expert guess of how this influences the indicator results should be provided.  If the allocation principles are not followed, or it is unknown whether or not they are followed, conservative assumptions should be done, for example by modifying the generic data. |  | M | Applicable PCR |  |
| 11.9 | If applicable: transparent documentation of the calculations of biogenic carbon content of product and packaging in CO2-eq. The conversion factor shall be stated. |  | M | EN 15804+A2: ch.7.2.5 (table 9) |  |
| 11.10 | If packaging contains biogenic carbon, has this been balanced out in A1-A3 if A5 is not reported? If balanced out in A5, have other relevant impacts for A5 been reported? |  | M | LCA Calculation Rules V2.0, ch. 2.11 |  |
| **12** | **Life cycle modelling information** | **NMD PCR addition** | **Mandatory/ optional** | **Reference** | **Checked and approved** |
| 12.1 | Transparent presentation of LCA modelling (for example by tables, screenshots from LCA software programmes etc.). |  | M | EN15804+A2 ch.8.4 |  |
| 12.2 | Clear description how specific (company) data are used. Is the assignment of company data to the datasets provided by the LCA software, described transparently and is it plausible? |  | M | EN15804+A2 ch.8.4 |  |
| 12.3 | Assignment of process data to the life cycle modules plausible? |  | M | EN15804+A2 ch.8.4 |  |
| 12.4 | For several locations/products: Presentation of modelling of all manufacturing sites (name and address to at least the country and city level: this applies for manufacturers and organizations providing products for sale/resellers) and products as well as any weighting thereof. |  | M | EN 15804+A2, ch 7.1 a); LCA Calculation Rules V2.0, ch. 2.12 |  |
| 12.5 | Plausibility and consistency of data (mass balance, energy balance) This can only be fulfilled with random checks if the effort for a verification shall be reasonable, e. g.: • Check on equations and total sums: Mass balance of inputs and outputs, e.g. mass balance of (renewable and non-renewable) material resource (feedstock) inputs and outputs (products/waste/emissions/secondary materials). • CO and CO2 emissions coherent with the mass input of fossil energetic resources. • Are the energy indicators coherent with the energy resources used? |  | M | EN15804+A2 ch.8.4 |  |
| 12.5.1 |  | For the processes taking place at the manufacturer of the construction product, the energy balance at company level must be determined and deviations must be corrected to an accuracy of ≥ 95 %. | M | NMD PCR |  |
| 12.5.2 |  | For the processes that take place at the manufacturer of the construction product (if deviating from the data at company level), the mass balance must be determined per process used (if deviating from the data at company level) and deviations must be corrected to an accuracy of ≥ 95 %. | M | NMD PCR |  |
| 12.5.3 |  | The validity of the other processes must be checked by determining the mass balance per process and correcting deviations to an accuracy of ≥ 95 %. | M | NMD PCR |  |
| 12.6 | BMB (biomass balance) and/or recycled content allocation (attribution) approaches like “mass balance credit method” and/or “book and claim” methods as per ISO 22095 has not been used. Biogas used for energy purposes is exempt from this rule, if allowed by the PO, see 6.1. |  | M | LCA Calculation Rules V2.0, ch. 2.4 based on ECO Platform position paper from January 2023 |  |
| **13** | **Indicators of the Life Cycle Inventory (LCI) and Life Cycle Impact Assessment (LCIA)** | **NMD PCR addition** | **Mandatory/ optional** | **Reference** | **Checked and approved** |
| 13.1 | Presentation of the parameters in tabular form for all modules A1 to D. |  | M | EN15804+A2 ch. 7.2.2 |  |
| 13.2 | Presentation of the indicators describing: EN15804+A2: • Core environmental impacts (13 indicators), • Additional environmental impacts (6 indicators) and coherent disclaimers. Table 4 shall be included in the EPD for the declared additional environmental indicators. If additional indicators are not declared, they shall be mentioned in the EPD, e.g. as an entry of "ND" to Table 4 or as text. • The use of resources (10 indicators). • The waste categories (3 indicators). • Output material flows (4 indicators). And other environmental performance indicators required by the PCR. Note: The sum of GWP fossil + GWP biogenic + GWP Land use and land use change shall be equivalent to GWP Total. | The environmental profile of set 1 (EN 15804+A2/A1:2013, characterisation factors taken from the ‘NMD assessment method’) consists of the eleven environmental impact indicators mentioned in paragraph 2.6.5 of the NMD assessment method.  The environmental profile of set 2 (EN 15804+A2/A2:2019) consists of the 19 core and additional environmental impact indicators mentioned in paragraph 2.6.5 of the assessment method. | M | EN15804+A2 ch. 6.5, 7.2.3 – 7.2.5, Table 4; NMD PCR |  |
| 13.2.1 |  | The values ​​of the environmental impact categories are calculated by: 1) Assigning the environmental interventions from the inventory to the environmental impact indicators; 2) Multiplying the interventions per environmental impact indicator by the characterization factors from the CML-NMD method “NMD assessment method; 3) Summing the values ​​obtained per environmental impact indicator. | M | NMD PCR |  |
| 13.2.2 |  | The emissions of substance groups are included in accordance with the NMD assessment method. | M | NMD PCR |  |
| 13.2.3 |  | If not all environmental interventions have been characterised: - If the cause concerns a different naming: correction of the naming, so that the substance is still characterised; - If the cause is a missing characterisation factor: characterisation according to a chemically and physically similar substance. If this is not present, then inclusion in a list of non-characterised interventions, with an indication of whether a(n) (significant) environmental impact can be expected. | M | NMD PCR |  |
| 13.2.4 |  | Aggregation of environmental profiles results in an ‘average’ environmental profile of a process. The average environmental profiles are calculated on the basis of a production quantity (or volume, if applicable) weighted average of the selected production locations. The production quantities may be estimated in terms of order of magnitude. | M | NMD PCR |  |
| 13.3 | Has the packaging been included in the declaration of the LCI related indicators, e.g. in the quantification of the content of primary energy? |  | M | EN 15804+A2 ch.6.3.5.2 + ch. 7.2.5 (Table 9), also some other chapters regarding modules B and C |  |
| 13.4 | Selection of correct characterisation factors and elimination of long-term emissions (> 100 years) Version of CF Factors to be stated to facilitate comparison. | Check whether the most recent complete set of characterization factors for environmental indicators and environmental impact indicators has been used. Information on last version can be found on: www.milieudatabase.nl. | M | EN15804+A2 ch.8.2 and annex C; applicable PCR  Note: some CEN TC product c-PCR documents contain additional and/or more appropriate CF Factors missing in the JRC tables. |  |
| 13.5 | Justification of indicators and characterisation methods applied in case they are not among the mandatory indicators/methods of the EN15804 and applicable PCR. |  | M | NMD PCR |  |
| 13.6 | Information on the environmental impacts in the project report: • Reference to characterisation models and factors • Statement that the estimated impact results are only relative statements which do not indicate the end points of the impact categories, exceeding threshold values, safety margins or risks |  | M | EN15804+A2 ch.8.2 |  |
| **14** | **Interpretation** | **NMD PCR addition** | **Mandatory/ optional** | **Reference** | **Checked and approved** |
| 14.1 | Interpretation of the results based on a dominance/contribution analysis of elected indicators? | The contribution analysis must follow the instructions of section 2.6.6.1 of the NMD assessment method. | M | NMD PCR |  |
| 14.2 | Is the relationship between the results of the LCI and the results of the LCIA plausible? Examples: • Relationships are checked, e.g. wood-mass balance, input-material, compare with order of scale/order of magnitude. • Insight into the model is important, where does the link between life cycle inventory and impact happen in the model. The link happens in the software… • Check orders of scale/magnitude, especially for indicators that are changed manually. • Currently, the following results shall be the same: Coherence of primary energy (n.e.) with ADPF values. • Check allocations, consistency with physical flows |  | M | EN15804+A2 ch.8.2 |  |
| 14.3 | Assumptions and restrictions as regard the interpretation of results in the EPD, in terms of both methods and data | The sensitivity analysis includes the assessment of the most important choices and assumptions made in de LCA, see also below and section 2.6.6.2 of the NMD assessment method. | M | EN15804+A2 ch.8.2 |  |
| 14.3.1 |  | Includes assessement of the influence of geographic and analogous distribution within a group of production locations. Use the highest and lowest values ​​in the uncertainty analysis. | M | NMD PCR |  |
| 14.3.2 |  | Includes assessment of the spread of results within an average composition. Use the highest and lowest values in terms of environmental impact ​​in the sensitivity analysis. | M | NMD PCR |  |
| 14.3.3 |  | Includes assessment of the spread of results due to averaging when establishing a group average. Use the highest and lowest values in terms of environmental impact ​​in the sensitivity analysis. | M | NMD PCR |  |
| 14.3.4 |  | Includes assessment of the spread of results due to uncertainty in assumptions within the allocation in recycling. If method 1) or 2) from section 2.6.4.3 of the NMD assessment method is applied, use method 3) in a sensitivity analysis. If method 3) is applied, perform a sensitivity analysis for the spread in outcomes. | M | NMD PCR |  |
| 14.3.5 |  | The differences in the spread of results described above do not exceed 20% on any of the environmental impact indicators compared to the average value. If the sensitivity analysis shows that the differences exceed 20%, the environmental declaration must be split into separate declarations to remain within the 20% limit. A higher deviation than 20% can be accepted, if all conditions in paragraph 2.6.6.2 of the NMD assessment method are met.   It is also possible to choose to show the worst case environmental profiles. In this way, the variations in environmental effects with very low values ​​can be dealt with.  The requested interpretation and sensitivity analyses in paragraph 2.6.6.2 of the NMD assessment method must be based on the environmental impacts from set 2, and also on the environmental impacts from set 1. Within set 2, only the summed result ‘Climate change – total’ is considered for the contribution of the environmental impacts to climate change. | M | NMD PCR |  |
| 14.4 | In the case where an EPD is for a product group a statement to that effect shall be included in the declaration together with a description of the range/ variability of the LCIA results if significant; The description of the range can be qualitative or quantitative. |  | M | EN 15804+A2, ch. 7.1 + 8.2; EN 15941, ch. 7.3.2 |  |
| 14.5 | Interpretation of the influence of data quality. An assessment of data quality should be provided if the data quality differs for significant data. |  | O | EN 15804+A2, ch. 6.3.8 + 8.2 + Annex E; ISO 14040 and EN15941 |  |
| 14.6 | Comprehensive transparency as regards value decisions, justifications and expert judgements, i.e. transparency to avoid misinterpretation. |  | M | EN15804+A2 ch.8.2 |  |
| **15** | **Additional information / requirements to LCA report and dossier** | **NMD PCR addition** | **Mandatory/ optional** | **Reference** | **Checked and approved** |
| 15.1 | If additional information is given, check the documentation: • Laboratory results/measurements listed in the content declaration; • Laboratory results/measurements listed in the functional/technical performance; • Documentation on the declared technical information on individual life cycle stages not taken into consideration in the construction product's LCA (but applicable building assessment (e.g. transport routes, energy consumption during the use stage, cleaning cycles etc.); • Laboratory results/measurements pertaining to the declared emissions in indoor air, oil or water during the use stage; • All declared information is in line with requirements in the PCR. |  | O | EN15804+A2 ch.8.3; Applicable PCR |  |
| 15.2 | Where relevant: ensure that information additional to EN 15804+A2 is either verified or has been verified/ certified by others e.g. by reference to standards or other publicly accepted test requirements. |  | M | LCA Calculation Rules, V2.0, ch. 2.13 |  |
| 15.2.1 |  | A project report includes the issues as described in paragraph 2.8 of the NMD assessment method. | M | NMD PCR |  |
| 15.2.2 |  | A project dossier includes the issues as described in paragraph 2.8 of the NMD assessment method. | M | NMD PCR |  |
| 15.2.3 |  | If applicable, the scaling of the environmental declaration complies with the requirements of paragraph 2.8.2.2. of the NMD assessment method. | M | NMD PCR |  |
| 15.2.4 |  | For reproducibility purposes, the information as included in paragraph 2.8.4 of the NMD assessment method is available to the reviewer. | M | NMD PCR |  |
| 15.2.5 |  | Reference is made to all data sources, both primary and public sources and literature is recorded. This includes at least: title, author/composer and year. | M | NMD PCR |  |
| **16** | **Lifespan and reference service life (RSL)** | **NMD PCR addition** | **Mandatory/ optional** | **Reference** | **Checked and approved** |
| 16.1 | The RSL shall be declared, if applicable (i.e., if defined as part of the functional unit). The lifespan of the product shall be declared, if applicable (e.g., if module B is declared). The lifespan may or may not be identical to the RSL.  Note: The lifespan shall be representative for the declared product and the calculation of the lifespan shall be documented and, if relevant, follow the PCR. |  | M | EN15804+A2 ch. 6.3.4 and normative Annex A |  |
| 16.1.1 |  | If the entire life cycle A-D is declared, the reference life span (RSL) is based on the reference life span per type of construction product from the SBR publication "Levensduur van bouw- producten" (Life span of construction products) [SBR, 2011], which can be downloaded from the ISSO Knowledge Bank. This can be deviated from if substantiated. Documentation is then required for the calculation of the RSL.  The RSL must be representative for the specified product in the specified application(s). | M | NMD PCR |  |

# **Verification checklist for the MRPI+ EPD contents**

Below, the verification checklist for MRPI EPD+ certificates, specifically for the EPD contents is presented, for verification of an MRPI certificate that complies with both the ECO Platform and Stichting NMD Guidelines. The checklist is used to verify the contents of the MRPI Spreadsheet.

All subjects mentioned in the list below must be checked and approved. The checklist follows the order of the original ECO Platform checklist for verification, with additional guidance when specific NMD PCR requirements apply.

The verification checklist is based on the following guidelines/standards and versions:

* Verification Guidelines for ECO EPD Programme Operators, Version 8.0, ECO Platform, December 2024.
* LCA Calculation Rules and Specifications for EPDs, Version 2.0, ECO Platform, December 2024.
* Bepalingsmethode Milieuprestatie Bouwwerken, Versie 1.2, January 2025, including amendments 1 & 2.
* NMD-Toetsingsprotocol Opname data in de Nationale Milieudatabase, Versie 1.2, August 2024.

The table contains the following columns:

* Reference (number) of the verification topic or subject
* The verification topic or subject, following the order of the ECO Platform verification guidelines;
* Additional requirements from the NMD PCR, adopted from the NMD review protocol;
* A reference to EN, ISO and/or PCR standards;
* An indication to be used by the MRPI recognized verifier to state if the topic is approved;
* *Optional:* The checklist may be expanded with additional columns to serve as dialogue document.

There is no specification whether the topic is mandatory or optional, all topics are mandatory.

When the corresponding subjects in the MRPI Spreadsheet comply with the requirements and guidelines in the applicable references, the box “C & A” (check and approved) can be ticked. When all boxes can be checked, the input is approved. Any deviations from the requirements should be reported by the MRPI recognized verifier and the dialogue between MRPI recognized verifier and LCA consultant or applicant should be made transparent as well as improvements made following the verification process. This can be done separately from the checklist in the dialogue document (an example is provided in the last part of this annex).

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **1** | **Requirements** | **NMD PCR addition** | **Reference** | **Checked and approved** |
| 1.1 | EPD include as general information: On the frontpage / titlepage / cover page: • Text “Environmental Product Declaration in accordance with ISO 14025 and EN 15804+A2”, prominently visible in the EPD. • Name of declared product. • Programme Operator (Name). • Name and address of manufacturer/association. • Date of issue + validity (5 years)/date of expiry + date of update if relevant. • EPD identification (registration number of the EPD on programme operator level). • Logo of ECO Platform.  In other chapters of the EPD: • Programme Operator / publisher, and name, address, logo, website as relevant. • Name of declared product. • Electricity mix (market-based approach or location based approach used for main results as per the PCR). • Statement that “EPD of construction products may not be comparable if they do not comply with EN 15804+A2”. • Geographical area, i.e. market range, where the product is produced, where it may be applied and where the end-of-life is assumed. • For EPDs of product group: a statement that the EPD covers a product group and a description of the type of such EPD (e.g., average, representative product or worst-case product). • Names of manufacturer(s) when the EPD declares an average of several manufacturers. • A statement of the applied background database(s) and software, and both its versions. • A statement, if ecoinvent is used, of the LCA-method Cut-off by classification or Cut-off, EN 15804+A2. • A statement which version of Characterisation factors was used. | Include a statement that EPDs of construction products cannot be comparable if they do not comply with the NMD assessment method;  In case an EPD describes an average of a number of products, include a statement that this does not result in a deviation of more than 20% from the average per environmental impact indicator. | EN 15804+A2 ch. 7.1 List of content to declare in an ECO EPD (see also MRPI EPD Spreadsheet and chapter 2.4 of the ECO Platform Verification Guidelines); NMD PCR |  |
|
| 1.2 | PCR name. PCR version (MM YYYY). If applicable: c-PCR (complementary PCR from product. TC) | Reference to applicable NMD Assessment Method including amendments, any c-PCR when applicable. | Applicable PCR from European product TCs and or PCR from PO; NMD PCR |  |
| 1.3 | Demonstration of verification: external independent verification, name of third-party verifier. | The examiner declares to be a recognized expert and verifier with the Stichting NMD (NMD Foundation). | EN 15804+A2, ch.7.1 Table 2; NMD PCR |  |
| 1.4 | Information on the validity: Does it corresponds with the specifications in the project report? |  |  |  |
| 1.5 | Appropriateness of logos of the company, programme operator and ECO Platform. Appropriateness of pictures. |  | List of content to declare in an ECO EPD (chapter 2.4 of the ECO Platform Verification Guidelines) |  |
| 1.6 | **Products using energy in module B6 of the use stage and permanently installed into building or infrastructure (defined by the manufacturer):** Statement that this EPD follows additional requirements for such products. |  | LCA Calculation Rules V2.0, ch. 2.10 |  |
| **2** | **Product** | **NMD PCR addition** | **Reference** | **Checked and approved** |
| 2.1 | The product description is in line with the project report, and clearly enough described to identify the declared product unambiguously. Name and location of production site(s). |  | List of content to declare in an ECO EPD (chapter 2.4 of the ECO Platform Verification Guidelines) |  |
| 2.2 | If applicable: Explanations on calculations of averages within a product group, and representativeness: Information on restrictions to the use of the EPD; Required information in the EPD for the representativity and data quality of the average and collective EPD according to EN 15941: A technical description of the average product group (such as density or a property like U-value); The number of manufacturing plants included in the EPD; and/ or The names of manufacturing companies or brands or associations; Sampling process if only representative companies/sites are chosen; Geographical coverage; The range of products for which the EPD is relevant, even if data from some products has not been used directly in producing the EPD For collective EPD (commonly called “sector EPD) the following are additionally required: • The number of products and/or sites included in the EPD Recommendation: description of the relative production volume covered by the EPD. |  | EN 15804+A2, ch.7.1; EN 15941, ch. 7.3.3 List of content to declare in an ECO EPD (chapter 2.4 of the ECO Platform Verification Guidelines) |  |
| 2.3 | Specification / identification (picture, name, model) Unambiguous identification of the product(s), by standards, concessions or other means. |  | EN 15804+A2, ch.7.1; List of content to declare in an ECO EPD (chapter 2.4 of the ECO Platform Verification Guidelines) |  |
| 2.4 | Indication of the intended use. Application and technical functions of the product. |  | EN 15804+A2, ch.7.1; List of content to declare in an ECO EPD (chapter 2.4 of the ECO Platform Verification Guidelines) |  |
| 2.5 | Relevant technical data (additional information is possible) including RSL if applicable (average values or range in case of product groups). |  | Applicable PCR |  |
| 2.6 | The test standards to which the technical data refers. |  |  |  |
| 2.7 | A description of the main product components and or materials is provided in accordance with the specifications of the PCR (if available) and LCA project report. As a minimum substance that are listed in the latest “Candidate List of Substances of Very High Concern for authorisation” if their content exceeds the limits for registration. |  | EN 15804+A2, ch.7.1; applicable PCR |  |
| 2.8 | Description of the manufacturing processes / all processes if several locations are involved. |  | EN 15804+A2, ch.7.1; applicable PCR |  |
| **3** | **LCA rules** | **NMD PCR addition** | **Reference** | **Checked and approved** |
| 3.1 | Information on the declared / functional unit corresponds with the specifications of the PCR (if available) and project report? |  | Applicable PCR |  |
| 3.2 | Indication of the EPD type and declared/undeclared modules through a table of modules (ND=Module not declared). EPD types applicable in EN 15804+A2: • cradle-to-gate with modules C1-C4 and module D • cradle-to-gate with options, modules C1-C4 and module D • cradle-to-grave and module D • cradle-to-gate (exemption requirements apply) • cradle-to-gate with options (exemption requirements apply) |  | EN 15804+A2, ch. 7.2.2 |  |
| 3.3 | EPD contains a (simple) flow diagram in accordance with the modular approach. |  | ISO 14044, ch. 4.3.2.2 |  |
| 3.4 | Description of the system boundary (can be simplified, as a picture or in wording), including the assignment of the analysed processes to the life cycle modules. |  | List of content to declare in an ECO EPD (chapter 2.4 of the ECO Platform Verification Guidelines), best follow ISO 14044, ch. 4.3.2.2 |  |
| 3.5 | Indication of the key assumptions and estimates for interpretation which are not depicted elsewhere in the EPD. |  |  |  |
| 3.6 | Presentation of the application of cut-off criteria in accordance with the project report. |  |  |  |
| 3.7 | Source of background data used, name and dated version. Description of what upstream and/or downstream data has been applied is optional. |  | List of content to declare in an ECO EPD (chapter 2.4 of the ECO Platform Verification Guidelines) |  |
| 3.8 | Indication of the age of background data used (e.g. last update or version of the database). |  | List of content to declare in an ECO EPD (chapter 2.4 of the ECO Platform Verification Guidelines) |  |
| 3.9 | Information on the data collection period and resulting averages. |  |  |  |
| 3.10 | Presentation of the allocations of relevance for calculation in accordance with the minimum requirements of the PCR. |  |  |  |
| 3.11 | BMB (biomass balance) and/or recycled content allocation (attribution) approaches like “Mass balance credit method” and/or “Book and Claim” methods as per ISO 22095 cannot be used in connection with ECO EPDs. |  | LCA Calculation Rules V2.0, ch.2.4 based on ECO Platform position paper from January 2023 |  |
| **4** | **LCA: Scenarios and additional technical information** | **NMD PCR addition** | **Reference** | **Checked and approved** |
| 4.1 | Mandatory for all declared modules beyond A3: declaration of the assumptions pertaining to the scenarios of the declared modules in accordance with the project report. Information on undeclared modules is optional. |  | EN 15804+A2, ch. 7.3 |  |
| 4.2 | If a reference service life (RSL) or lifespan is declared in the EPD, declaration of the scenario on which the RSL is based, in accordance with the project report. |  | EN 15804+A2, ch. 7.3.3.2 + Annex A ; applicable PCR |  |
| **5** | **LCA: Results** | **NMD PCR addition** | **Reference** | **Checked and approved** |
| 5.1 | Description of the declared / functional unit. |  |  |  |
| 5.2 | Identification of the declared/undeclared modules: Table of Modules/indicators, illustrating the type of EPD ND = module not declared Full declaration of all indicators of EN 15804+A2 required according to the modular approach Result Table contains: No blank cells, hyphens, or other symbols. The value 0 only for parameters that have been calculated to be 0, or below a limit value (former MNR/MNA etc). Footnotes shall be used to explain any limitation to the result value. Additional indicators included or marked as Not Declared (“ND”) in table or as text passages, justifications for not declaring indicators as per EN 15804+A2? |  | List of content to declare in an ECO EPD (chapter 2.4 of the ECO Platform Verification Guidelines); EN 15804+A2, ch.7.2.3, 7.2.4, 7.2.5 and ch.7.5 |  |
| 5.3 | Biogenic carbon content (in product and packaging) in kg C |  | EN 15804+A2, ch. 7.2.5 |  |
| 5.4 | Programme operators may allow optional additional impact indicators and LCI indicators. These shall be identified as “additional” to the indicator basket of EN 15804+A2, either in the EPD itself or in an annex. | The environmental impacts from set 2 and the environmental impacts from set 1 (see also NMD assessment method 2.8.2.2), the use of raw materials (table 3), waste categories (table 4) and output flows (table 5) have been presented. | List of content to declare in an ECO EPD (chapter 2.4 of the ECO Platform Verification Guidelines); NMD PCR |  |
| 5.5 | The declared indicator and other quantitative results shall be  identical with the respective values in the project report. |  |  |  |
| 5.6 | In case of product averages: description of the range / variability of the LCIA results. This may be qualitative information. |  | EN 15804+A2, ch.7 |  |
| 5.7 | Deletion of module columns which are not declared (permissible for the Results part). |  | List of content to declare in an ECO EPD (chapter 2.4 of the ECO Platform Verification Guidelines) |  |
| 5.8 | Formatting the table framework and parameter addressed in accordance with the specifications of the PCR or the programme operator rules. |  |  |  |
| **6** | **Data quality information in EPD according to EN 15941** | **NMD PCR addition** | **Reference** | **Checked and approved** |
| 6.1 | Data quality information shall be provided in a prominent section of the EPD reporting data quality according to EN 15941. This text shall be in line with the information on data quality reported in the Project Report and shall be a reasonable summary of it. |  | EN 15804+A2, ch. 6.3.8.3; EN 15941, ch. 7.3.3 |  |
| 6.2 | Any use of relevant data assessed for either time, geography or technology according to 7.1 and EN 15804+A2, 6.3.8.3 to be: - poor or very poor data; - fair data that has more than 30 % for any core indicator has been noted in the EPD.  *If any specific EPD are used in modelling, this should be mentioned.* |  | EN 15941, ch. 7.1 + 7.3.3 |  |
| 6.3 | Any text describing data quality shall use the terminology provided for quality level in EN 15804+A2, Table E.1 and Table E.2 to describe data quality in relation to time, geography and technology (see Annex C for examples). |  |  |  |
| 6.4 | EPD shall not declare any misleading or exaggerated claims with respect to data quality. |  |  |  |
| 6.5 | The EPD specifies which table from EN 15804+A2, Annex E has been used to assess the data quality of relevant data. |  |  |  |
| **7** | **Evidence for tests or certificates, depending on requirements in PCR.** | **NMD PCR addition** | **Reference** | **Checked and approved** |
| 7.1 | Additional information is provided to indoor air or oil/water, if applicable. | Information on the emission of hazardous substances to indoor air, soil and water during the use phase has been provided. | EN 15804+A2, ch.7.4; NMD PCR |  |
| 7.2 | Other additional environmental information if relevant for a country. |  | List of content to declare in an ECO EPD (chapter 2.4 of the ECO Platform Verification Guidelines) |  |
| 7.3 | Declaration of the relevant evidence. Information where to find this evidence. |  | EN 15804+A2, ch.7.2; applicable PCR; existing programme rules |  |
| 7.4 | Approach Power Mix: Reporting done as required in EN 15941. Market-based approach or location-based approach to be specified for any results provided. |  | EN 15941 |  |
| 7.5 | Additional rules for transparency in the EPD:  • If electricity accounts for more than 30 % of the total energy use in stage A1-A3, provide in the EPD the GWP-total of the electricity in kg CO2e/kWh used in foreground processes and any other processes in the direct control of the manufacturer. Indication of energy datasets used is mandatory. Minimum: residual mix, consumption mix and any modelled datasets. Any mix of energy carriers should be described. Information if any contractual instruments are used must be declared.  Justification if any background data does not follow the recommendations of Table 3 of the LCA Calculation Rules. |  | ECO Platform LCA Calculation Rules V2.0, ch. 2.5 List of content to declare in an ECO EPD (chapter 2.4 of the ECO Platform Verification Guidelines), EN 15941 |  |
| **8** | **Additional Information in the EPD or Annexes** | **NMD PCR addition** | **Reference** | **Checked and approved** |
| 8.1 | Where relevant: ensure that information additional to EN 15804+A2 is either verified or has been verified/certified by others e.g. by reference to standards or other publicly accepted test requirements. |  | LCA Calculation Rules V2.0, ch. 2.13 |  |
| 8.2 | Any additional information in the EPD or annexes meets the requirements of the LCA Calculation Rules V2.0. No use of non-compliant methodological approaches. Additional indicators to EN 15804+A2 calculated using compliant methodology may be provided. |  | LCA Calculation Rules V2.0, ch. 2.13 |  |
| **9** | **References** | **NMD PCR addition** | **Reference** | **Checked and approved** |
| 9.1 | Full indication of all referenced sources (excluding standards already quoted in full and standards concerning evidence). |  | List of content to declare in an ECO EPD (chapter 2.4 of the ECO Platform Verification Guidelines) |  |
| **10** | **Annex** | **NMD PCR addition** | **Reference** | **Checked and approved** |
| 10.1 | An Annex may contain all additional information required for specific national use in different countries. |  | List of content to declare in an ECO EPD (chapter 2.4 of the ECO Platform Verification Guidelines) |  |

# **Example of dialogue between verifier LCA practitioner during the verification process**

The verifier shall report any deviations from the requirements in the verification report. The dialogue between verifier and LCA practitioner shall be made transparent. This can be done in or separately from the checklist. The format to do so is free to choose. Examples are given below:

*Example:*

|  |  |  |
| --- | --- | --- |
| Verification issue number | Description of non-conformity / comment | Response |
|  |  |  |
|  |  |  |

*Example* (partly based on XP TS14071)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Comment N° | Chapter Article  Paragraph | Alinea  Table | Type of comment (Ed, Te, Ge)\* | Ref. to an Eco  check list (or  programme  rules) section | Verifier comment and recommendation | Manufacturer  / LCA practitioner  answer | Final verifier statement |
|  |  |  |  |  |  |  |  |

\*Ed = Editorial; Te = Technical; Ge = General