

OPERATIONAL INSTRUCTION


Dear LCA Practitioner,

Welcome to the Interlaboratory Collaborative Study on LCA.

The preparation of this study was scientifically demanding and relevant. The ISO 14044 standard was analysed and structured on the basis of ISO 17043 and ISO 13528 standards (relating to statistical analysis) to identify the factors that can determine the variability in the LCA study results. A total of 51 factors were identified.

The need to keep some factors constant while leaving others variable explains the complexity and detail of this study and related procedures. Each factor is managed individually to understand the influence and magnitude of only the variable factor under the study. The aim is to identify the factors that have the greatest impact on the variability of the LCA study results.

For the reasons explained above we kindly ask you to carefully read these instructions before starting the LCA study.

 **We would like to remind you that participation is completely anonymous, unlike in other interlaboratory circuits, as this project is open to public entities and control structures. Therefore, if you do not closely follow the instructions, you may risk losing the traceability of your work.**

Here are listed the operational instructions to be followed before starting the LCA tests. Please read and follow each step carefully (link to the different pages are in bold and underlined character):

1. **Access the Proficiency Problem Solving platform** by visiting the [Proficiency Problem Solving platform](#). This platform is used for collaborative studies.
2. **Sign in to the website** by clicking on the login button located in the upper part of the page. The registration process is a one-time subscription and is free of charge. Once logged in, you will have access to the entire test catalogue. To register, you will need to provide your VAT number. You can do this at 00000000 as the test is free.
3. **Read and understand the procedure for registering and participating in the different tests.** You can find detailed instructions on the ["Step by step instruction" page](#). Take your time to familiarize yourself with the instructions provided. Pay close attention to the section at the bottom of the step-by-step instructions page that describes the anonymity protection for project participants. You can access to an extended and detailed document that provides further information on anonymity.
4. **Choose the test** to participate in from the [Test Catalogue page](#). This page provides a list of available tests. Select the test that aligns with your LCA study objectives. In the test description, you will find the relevant documentation.
5. **Register for the chosen test:** Once you have selected a test, you will find a banner at the bottom of the page that allows you to register for the test. Click on the banner and complete the registration process following the provided instructions.
6. **Download relevant documents:** after successfully registering for the test. Download the provided zip file containing the **Excel file(s)** related to the case study(ies), unzip into a folder without renaming the file(s). Additionally, make sure you have the **specific Test procedure** related to the case study you are conducting. Familiarize yourself with the procedure and ensure you have all the necessary information and resources to carry out the study effectively.

For any questions or clarifications regarding the Interlaboratory Collaborative Study on LCA and related tests, please contact Andrea Casson (andrea.casson@unimi.it) or Anna Bortoluzzi (anna.bortoluzzi@quotasette.it).

INTERLABORATORY COLLABORATIVE STUDY ON LIFE CYCLE ASSESSMENT: FOOD AND PACKAGING SECTOR

Once you have downloaded and you have become familiar with all the relevant documents, please carefully follow the instructions provided on the next page.

1. **Start the test:** Open the **specific Test procedure** and the **Excel file** provided and carefully follow the instructions within them. It is recommended to create a folder on your PC to store and save all the relevant documents related to the test.
2. **Follow the Test procedure** to conduct the LCA study. The procedure provides all the necessary instructions and guidance for conducting the test. It is essential to carefully follow all the instructions in the procedure to carry out the case study properly. The procedure provides specific instructions regarding methodological choices, data processing and acquisition of results. The LCA Practitioner must adhere to those instructions.
3. **Fill the Excel file with the required information:** If no specific instructions are provided, it is advisable to use methodological and/or data processing choices that, in the LCA Practitioner's opinion, represent the best solution. The procedure requests that information be reported in particular sheets, sections, and cells of the given Excel file for those variables that are up to the LCA Practitioner's discretion.
4. **Life Cycle Impact calculation:** For each process developed in the test, perform an LCA calculation to assess the environmental impact as specified in the specific Test procedure. For all the results obtained, the procedure asks to report them in specific sheets, sections and cells of the Excel file provided.
5. **Save and store the Excel file:** Keep the Excel file with their original name until the specific results page is accessible on the portal.
6. **Send the file with the results:** After completing the test and compiling the Excel files (ensure they are not renamed), create a zip file containing all the Excel files related to the test (name the zip file using alphanumeric characters only otherwise the upload will fail). Then upload it to the website page using the 'Submit your results button' related to the test and available on [Test Catalogue page](#). At this stage, you'll receive your PIN code. Print it out or take a screenshot, as you won't be able to retrieve it.
7. **Find out your results:** After gathering all data from the participants, you will be notified via mail that your results can be found online under your PIN code.



The points described below are extremely important for carrying out the tests, read and follow them.

- **The resources:** Unless specified in the Test procedure, there are no restrictions on the type and version of LCA software that can be used to perform the test. There are also no restrictions on the libraries and databases that can be used unless specified (Clarification: if the LCA software and/or libraries are not specified, it is because they are studied from a statistical point of view, starting from the correlation analyses. In these cases, the information is requested as metadata).
- **Calculation reliability:** It is important for result reliability that the LCA Practitioner is not influenced by another LCA Practitioner operating in the same office or workgroup. We ask each LCA Practitioner to conduct the LCA study independently (Clarification: when LCA practitioners collaborate, systematic and non-statistical variations may be identified in the evaluation of results. This could lead to the exclusion of these results as potentially anomalous with respect to the data qualification tests required by the standard (ISO 13528)).
- **Time:** We strongly recommend completing all measurements (calculation) within the day you decide to conduct the study (Clarification: the need to complete the calculation within a short time should limit the chances for error, thus limiting the variability associated with systematic error).