



**EU Ecolabel for hard
covering products**

User Manual

European Commission

Commission Decision (EU) 2021/476

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Using this manual

This manual guides you through the process of applying for an EU Ecolabel licence, in accordance with the applicable criteria requirements. The following symbols are used throughout:

| Symbol | Description |
|---|---|
|  | If necessary for the interpretation of the criterion, subtitles with explanations, examples of calculations, decisions from the Competent Body Forum, etc. |
|  | Boxes with definitions or additional explanations of technical terms that could complement the definitions already included in the article 2 of the Commission Decision (EU) 2021/476 . |
|  | Notable or important information. |
|  | Documentation on how to fill in the verification form and information about documents to be handed in with the application. |
|  | Website links where further information can be found. |

This document comprises the following parts of the user manual:

- **Part A: General Information** – Provides information about the EU Ecolabel (including a summary of the criteria), details of the application process, and answers to frequently asked questions about applying.
- **Part B: Product Assessment and Verification** – Outlines the criteria for a specific product group set out in the relevant Commission Decision. An example from this section is shown below:

The user manual also consists of the following elements as separate files:

- **Part C and D: Application and Verification Form** – This form should be completed by the applicant. The application and verification form is provided separately as an excel file. It includes a list of products covered by the application and indicates all the information necessary for the product certification, highlighting any tests and documentation that are required to demonstrate compliance. As the requirements vary depending on the type of product to be certified, one of four excel files should be used (there is one for natural stone, one for agglomerated stone, one for ceramic and one for precast concrete & compressed earth). Each excel file contains required input fields (green cells), optional input fields (yellow cells) and automatic output fields (red cells). Qualitative (e.g. pass/fail) and quantitative (e.g. 9.62 points) outputs are automatically generated. The total score is automatically generated and can be compared with the required pass mark in the “Summary” worksheet. The applicant also declares the veracity of the information on the excel file before submitting it to the competent body (by signing at the bottom of the “Application” worksheet). This facilitates the application process as it allows the application and verification form to be provided in an electronic form to the competent body.
- **Annex I. Declarations from an external suppliers** These declarations are to be completed as part of the application and verification process whenever provision of the external or third party information/verification is requested or necessary i.e. in case of an external supplier. The relevant declarations are included in Annex I that is provided as separated file that forms part of the User Manual.



- **Part E: Checklist**

The applicant shall gather all the necessary declarations from their supplier(s) and provide them to the assessing Competent Body together with the application and verification form. These declarations can also be provided directly from the supplier to the Competent Body. **An example of the declaration is given below:**



The Declaration Forms from external supplier shall serve as proof of compliance whenever the assessment and verification of the criterion accepts or requires the declaration from an external supplier or third party verification.



Please read this manual all the way through before completing and submitting the application form or any other documentation. EU Ecolabel [Competent Bodies](#) can help licence holders understand the EU Ecolabel criteria and can provide guidance on how to assemble an application dossier.

Introduction

This User Manual¹ is designed to help you apply for the EU Ecolabel. It includes an outline of all data, tests and documentation that are required to demonstrate compliance with the criteria.

The basis for the manual is a [Commission Decision \(EU\) 2021/476](#) establishing the ecological criteria for the award of the EU Ecolabel hard covering products. A copy of the criteria can be found at:



<http://ec.europa.eu/environment/ecolabel/products-groups-and-criteria.html>

This document is not aimed to duplicate the content of the criteria but is intended to support their interpretation, and is mainly focused on helpful explanations and clarifications. Each criterion name appears as a heading under Part B with a short summary of what documents are needed for the verification of the criterion. The exact criterion text does not appear in this user manual. Only additional information, clarifications and explanations are included.



Please read the criteria document ([Commission Decision \(EU\) 2021/476](#)) all the way through before completing and submitting the verification form or any other documentation

For general questions about the EU Ecolabel and the application process please check out following pages:



<http://ec.europa.eu/environment/ecolabel/faq.html>

<http://ec.europa.eu/environment/ecolabel/how-to-apply-for-eu-ecolabel.html>

Part A: General Information

Part A “General information” is a standard document for all EU Ecolabel products explaining the different steps of the application process in detail. It has been translated in each Member State language and can be found at:

<https://ec.europa.eu/environment/ecolabel/documents.html>

¹ This User Manual is for guidance only; it does not have any legal standing and does not, in any way, replace the Commission Decision or any relevant legislation. In case of doubt on specific points in the Manual, please refer directly to the national Competent Body.

Part B: Product Assessment and Verification

1 Scope

The scope of the criteria is focussed on **final products**, specifying the product formats (e.g. floor tile, wall tile etc.) in Article 1(1) of the Commission Decision and materials (i.e. natural stone, agglomerated stone, ceramic, precast concrete and compressed earth) in Article 1(3).

Certain intermediate products are also included in the scope (i.e. can be awarded the EU Ecolabel license under [Commission Decision 2021/476](#)) by referring to recital 8 therein. For clarity, these **intermediate products** are:

- **Quarry stone blocks (also referred to as dimension stone):** these are large blocks or slabs that are cut directly from quarries and that can reach sizes of up to 2x2x3 metres. They are then transformed to final products by the same quarry operator or, in the majority of cases, sold to transformation plants operated by other companies.
- **Hydraulic binders:** this generally refers to all the different classes of common cement defined in EN 197-1 and to hydraulic lime defined in EN 459-1. The companies that produce hydraulic binders are almost always independent of the precast concrete or compressed earth block manufacturers.
- **Alternative cements:** this refers to cements that do not meet the compositional requirements of EN 197-1. This could refer to novel blended Portland cements, alkali-activated cements and geopolymers that could potentially be used in precast concrete production. These products represent a much smaller market share than the EN 197 cements but offer major opportunities for innovative and low environmental impact cements.



Check whether your candidate products are in the scope (read recital 8 and Article 1 of the [Commission Decision \(EU\) 2021/476](#) and check against the drop-down menu in cell E13 of the 'Application' worksheet in the Parts C & D excel file).

There is a lot of information in the user manual, much of which is specific only to certain types of products. Consequently, before starting the process, it is worth considering what criteria actually apply and what type of information might be necessary from suppliers and other third parties.

| Product type | Applicable criteria | External information needed |
|--|------------------------------------|--|
| Natural stone (intermediate block/slab from quarry) | 1.1, 1.2, 1.6, 1.7 and 2.1, to 2.6 | Information from fuel and electricity supplier about renewable content (for criterion 2.1) |
| Natural stone (final product(s) from transformation plant. | 1.1 to 1.7 and 2.1 to 2.11 | Information from quarry operator(s) from where blocks are obtained to make the products covered by the application (for criteria 1.1 and 2.1 to 2.6) Information from suppliers of chemicals used (for criterion 1.2) (Potentially) information about testing of VOC emissions (criterion 1.3) Information from fuel and electricity supplier about renewable content (for criterion 2.1) |

| Product type | Applicable criteria | External information needed |
|---|-----------------------------------|--|
| Agglomerated stone based on resin binder* | 1.1 to 1.7 and 3.1 to 3.5 | Information from virgin raw material supplier(s) about quarry (for criterion 1.1) Information from suppliers of chemicals used (for criterion 1.2) Information about testing of VOC emissions (criterion 1.3) Information from fuel and electricity supplier about renewable content (for criterion 3.1) |
| Ceramic or fired clay product | 1.1 to 1.7 and 4.1 to 4.7 | Information from virgin raw material supplier(s) about quarry (for criterion 1.1) Information from suppliers of chemicals used (for criterion 1.2) (Potentially) information about testing of VOC emissions (criterion 1.3) (Potentially) information from spray-dried powder supplier (criterion 4.1) (Potentially) information from spray-dried powder supplier (criterion 4.2) (Potentially) information from operator of wastewater treatment plant (criterion 4.5) |
| EN 197-1 cement – intermediate product | 1.1, 1.2, 1.6, 1.7 and 5.1 to 5.3 | Information from virgin raw material supplier(s) about quarry (for criterion 1.1) Information from suppliers of chemicals used (for criterion 1.2) |
| Hydraulic lime – intermediate product | 1.1, 1.2, 1.6, 1.7, 5.2 and 5.3 | Information from virgin raw material supplier(s) about quarry (for criterion 1.1) Information from suppliers of chemicals used (for criterion 1.2) |
| Alternative cement with >30% clinker content – intermediate product | 1.1, 1.2, 1.6, 1.7 and 5.1 to 5.3 | Information from virgin raw material supplier(s) about quarry (for criterion 1.1) Information from suppliers of chemicals used (for criterion 1.2) |
| Alternative cement with <30% clinker content – intermediate product | 1.1, 1.2, 1.6, 1.7, 5.1 and 5.2 | Information from virgin raw material supplier(s) about quarry (for criterion 1.1) Information from suppliers of chemicals used (for criterion 1.2) |
| Precast concrete or compressed earth based on EN 197-1 cement | 1.1 to 1.7 and 5.1 to 5.6 | Information from virgin raw material supplier(s) about quarry (for criterion 1.1) Information from suppliers of chemicals used (for criterion 1.2) (Potentially) information about testing of VOC emissions (criterion 1.3) Information about clinker factor, CO ₂ emissions and other emissions to air from cement clinker production (criteria 5.1 to 5.3) |
| Precast concrete or compressed earth based on hydraulic lime | 1.1 to 1.7 and 5.2 to 5.6 | Information from raw material supplier(s) about quarry (for criterion 1.1) Information from suppliers of chemicals used (for criterion 1.2) (Potentially) information about testing of VOC emissions (criterion 1.3) Information about CO ₂ emissions and other emissions to air from lime production (criteria 5.2 and 5.3) |
| Precast concrete or compressed earth based on alternative | 1.1 to 1.7 and 5.1 to 5.6 | Information from raw material supplier(s) about quarry (for criterion 1.1) Information from suppliers of chemicals used (for criterion 1.2) |

| Product type | Applicable criteria | External information needed |
|--|---|---|
| cement with >30% clinker content | | (Potentially) information about testing of VOC emissions (criterion 1.3) Information about clinker factor, CO2 emissions and emissions to air from cement clinker production (criteria 5.1 to 5.3) |
| Precast concrete or compressed earth based on alternative cement with <30% clinker content | 1.1 to 1.7, 5.1, 5.2, 5.4, 5.5 and 5.6. | Information from raw material supplier(s) about quarry (for criterion 1.1) Information from suppliers of chemicals used (for criterion 1.2) (Potentially) information about testing of VOC emissions (criterion 1.3) Information about clinker factor and CO2 emissions (criteria 5.1 and 5.2) |

*It should be noted that the general title ‘**agglomerated stone**’ was changed to ‘**agglomerated stone based on resin binder**’ in order to make it clear that these criteria (i.e. 3.1 to 3.5) do not apply to agglomerated stone products that use a **cement binder**. In cases of the latter type of product, although apparently rare in the EU market, the product should be treated as a precast concrete product as far as determining what criteria it needs to comply with (i.e. 5.1 to 5.6).



To ensure that uptake statistics can be correctly compiled, a license should only apply to one of the types of products listed in the left hand column of the table above (this is the drop down list appearing in cell E13 of the “Application” worksheet of the excel file for Parts C and D). So it is not possible to combine e.g. agglomerated stone data with natural stone data, even if they are made by the same company.



For simplicity of data compilation and record-keeping, the excel file should apply to a single site only (potentially with a breakdown of more specific data for different products from the same site). Whether one excel should be submitted per license or if multiple excels can be submitted per license should be decided by discussions between the applicant and the relevant [Competent Body](#).

1.1 Quick check of the criteria

If you are confident about being able to obtain the relevant information from suppliers and other external parties, it is then recommended that you start checking internally if the candidate product(s) are likely to fulfill the criteria:

- Make sure the candidate product fulfils all applicable legal requirements of the country or countries in which the product is intended to be placed on the market.
- Check what type of evidence is required for each of the relevant criteria. To do this, download the Parts C & D excel file, which is available at: <https://ec.europa.eu/environment/ecolabel/products-groups-and-criteria.html> under “Hard covering products”.
- Make sure that any intermediate products or virgin raw materials can meet the relevant mandatory requirements.

1.2 Parts C & D excel file: “Application” worksheet

 ***In the excel file, you have to fill in the green cells. Yellow cells are optional, red cells provide automatic outputs and grey cells are not active.***

The first worksheet users are presented with upon opening the excel file is titled ‘Application’. This is the basic information needed to run the administrative part of the application process.

The mandatory information in cell E13 and the optional entry in cell E14 is important for understanding where exactly the EU Ecolabel for this product group is having most interest – which will be important to know when the time comes to revise the criteria in the future.

By providing information about the type of company (size and location) in the same worksheet (cells E18, E19, E20 and E21), the potential applicant can know if any discounts will apply to potential application fees, site inspection fees and annual fees.



The Competent Body may request relevant evidence about the size, turnover and location of your company and, if applicable, EMAS registration or ISO 14001 certificates.

1.3 Parts C & D excel file, “Summary” worksheet

From the beginning of the process, the applicant should have a list of products in mind that the application should refer to. A full list of these products should be filled out in Column B of the “Summary” worksheet.

The names used for the product should be defined by the applicant and do not necessarily need to correspond to any commercial names for the products. However, if commercial names are used and there is an associated EAN number, this latter information should also be included in Column C. of the ‘Summary’ worksheet. It is understandable that this list may be dynamic and may need to be updated periodically as product catalogues change.

In cases where lots of different individual EU Ecolabel products are produced in the same factory, and their differences are insignificant in terms of the data for the EU Ecolabel application, they can be grouped together into the same row. In these cases, the number of products grouped should be stated in Column D. If no number is inserted here, it will be assumed to be 1.

Competent Bodies are required to report statistics on the number of products covered by EU Ecolabel licenses twice per year. So applicants should be prepared to update this list twice per year if requested. Please note that licence holders are also responsible for registering their products and services on the online EU Ecolabel product and service catalogue (ECAT) to ensure licence traceability².

A screenshot of the “Summary” worksheet for the ceramic tile excel is shown below:

² <https://ec.europa.eu/environment/ecolabel/how-to-apply-for-eu-ecolabel.html>



EU ECOLABEL USER MANUAL HARD COVERING PRODUCTS

Commission Decision (EU) 2021/476 for the award of the EU Ecolabel for HARD COVERING PRODUCTS

| EU Ecolabel hard covering products | | No. of products covered by entry | | Applicable criteria and points, where relevant. Cells in green should be filled out based on data provided in the other worksheets) | | | | | | | | | | | | | | | | | | | Total | Pass mark | |
|---|-------------------|----------------------------------|-----------|---|---------|------------|---------------|------|----------------|----------------|--------------------|---------------|----------------|-------------------|-------------|------------------|-----------|---------|----------|-------------|-------------|---------------|-------|-----------|------------------|
| Individual product name/production run reference / production line reference / factory name | EAN (if relevant) | 1.1 1.2 1.3 1.4 1.5 1.6 1.7 | | | | | | | 4.1 | | | 4.2 | | | 4.3 | | 4.4 | | | 4.5 4.6 4.7 | | | | | |
| | | Raw Mat. | Hat. Sub. | VOC | Fitness | User info. | Info on label | EMS | Fuel score SGP | Fuel score KWD | Fuel score Overall | CO2 score SGP | CO2 score SPOD | CO2 score Overall | Water cons. | Spray dryer dust | Kiln dust | Kiln HF | Kiln NOx | Kiln SOx | Waste water | Process waste | | | Glasses and inks |
| | | Pass | Pass | Pass | Pass | Pass | Pass | 0.00 | 15.80 | 15.56 | 14.69 | 20.83 | 25.00 | 23.54 | Pass | Pass | 7 | 5.00 | 10.00 | 10.00 | Pass | 6.80 | Pass | 76.53 | 50 |
| | | | | | | | | | | FALSE | FALSE | FALSE | FALSE | | | | | | | | | | | FAIL | 50 |
| | | | | | | | | | | FALSE | FALSE | FALSE | FALSE | | | | | | | | | | | FAIL | 50 |
| | | | | | | | | | | FALSE | FALSE | FALSE | FALSE | | | | | | | | | | | FAIL | 50 |
| | | | | | | | | | | FALSE | FALSE | FALSE | FALSE | | | | | | | | | | | FAIL | 50 |

The information in cells C2 and C5 is automatically carried forward from the “Application” worksheet. The optional information in cells C3 and C4, when collected from multiple licenses, is extremely useful for the Commission when trying to measure the impact of the EU Ecolabel criteria – so users are encouraged to provide information here whenever possible, even if it is only a very approximate estimate.

The “Summary worksheet is organised in rows, with one row per product/product group, potentially allowing for a unique score to be generated for each product/product group. In reality, the same data will in many cases apply for multiple or even all products/product groups in the list. Where the input is guaranteed to be the same always, because the criterion always applies at the level of the whole site, the cells from row 12 and below are blacked out.

The first 5 rows are automatically linked to 5 fully independent data entries in another worksheet (in this case for criteria 4.1 to 4.7). Users should use these automatic links **and, depending on feedback from the webinar – this could be increased up to 10 or even 20 automatic entries.** Going beyond 20 automatically linked entries, it would make more sense to submit an additional excel sheet or to manually enter the additional entries into the “Summary” worksheet..

The best way to arrange the data and to group products will depend directly on how the production process is organised and how data is collected. For example, if a production process is continuous all year round, one data set would be suitable. However, for batch processes, data could be submitted at the level of each batch or, being more practical, the batch data could be agglomerated if it is very similar between batches.

Another example is if multiple production lines run in parallel but connect to the same, centralised exhaust gas abatement system. If individual scores are needed for each production line, then either the unclean gas pollutant levels and flow rates need to be measured from each production line and a justifiable % removal efficiency of the centralised system be applied, or the clean gas emissions can be allocated and weighted according to each of the contributing production lines.

These considerations about how to deal with data should be agreed with the Competent Body at the earliest stages of the application process.

2 Product Group Criteria Overview

The following table summarises all criteria of the [Commission Decision \(EU\) 2021/476](#) of 16 March 2021 establishing the EU Ecolabel criteria for hard covering products ([intermediate product criteria in blue](#)).

| 1. Criteria common to all hard covering products | | | |
|---|--|--|--|
| 1.1. Industrial and construction mineral extraction | | | |
| 1.2. Restricted substances | | | |
| 1.3. VOC emissions | | | |
| 1.4. Fitness for use | | | |
| 1.5. User information | | | |
| 1.6. Information appearing on the EU Ecolabel | | | |
| 1.7. Environmental Management System (optional) | | | |
| Material and technology specific criteria | | | |
| 2. Natural stone | 3. Agglomerated stone based on resin binders | 4. Ceramic and fired clay | 5. Precast concrete or compressed earth blocks with hydraulic binders or alternative cements |
| 2.1. Energy consumption at the quarry* | 3.1. Energy consumption | 4.1. Fuel consumption for drying and firing | 5.1. Clinker factor** |
| 2.2. Material efficiency at the quarry* | 3.2. Dust control and air quality | 4.2. CO2 emissions | 5.2. CO2 emissions** |
| 2.3. Water/wastewater management at quarry* | 3.3. Recycled / secondary material content | 4.3. Process water consumption | 5.3. Emissions of dust, NOx and SOx to air** |
| 2.4. Dust control at the quarry* | 3.4. Resin binder content | 4.4. Emissions of dust, HF, NOx and SOx to air | 5.4. Recovery and responsible sourcing of raw materials |
| 2.5. Personnel safety and working conditions at the quarry* | 3.5. Reuse of process waste | 4.5. Wastewater management | 5.5. Energy consumption |
| 2.6. Quarry landscape impact ratios* (optional) | | 4.6. Reuse of process waste | 5.6. Environmentally innovative product designs (optional) |
| 2.7. Energy consumption at the trans. plant | | 4.7. Glazes and inks | |
| 2.8. Water/wastewater management at the transformation plant | | | |
| 2.9. Dust control at the transformation plant | | | |
| 2.10. Reuse of process waste from the transformation plant | | | |
| 2.11. Regionally integrated production at the transformation plant (optional) | | | |

*criteria applicable for awarding the EU Ecolabel to intermediate blocks of dimension stone from natural stone quarries. **criteria applicable for awarding the EU Ecolabel to intermediate hydraulic binders or alternative cement products.

As mentioned earlier, for any given product group, only some of the criteria will apply. So make sure that you read in detail the criteria related to your own product group of interest and do not lose time reading about non-relevant criteria.

General conditions regarding assessment and verification

On page 8 of Commission Decision (EU) 2021/476, some general conditions about assessment and verification are mentioned. This text is there to state clearly some additional conditions that can generally apply which might not always be explicit in the actual assessment and verification text of individual criteria.

To avoid repeating these conditions with the assessment and verification text for each criterion, they are generally stated before the first criterion appears in Commission Decision (EU) 2021/476. For ease of reference, these conditions are repeated below.

“Where the applicant is required to provide declarations, documentation, analyses, test reports or other evidence to show compliance with the criteria, these may originate from the applicant and/or his supplier(s) and/or their supplier(s), etc. as appropriate.

Competent bodies shall preferentially recognise attestations that are issued by bodies accredited in accordance with the relevant harmonised standard for testing and calibration laboratories, and verifications by bodies that are accredited in accordance with the relevant harmonised standard for bodies certifying products, processes and services.

Where appropriate, test methods other than those indicated for each criterion may be used if the competent body assessing the application accepts their equivalence.

Where appropriate, competent bodies may require supporting documentation and may carry out independent verifications or site inspections to check compliance with these criteria.

Changes in suppliers and production sites pertaining to products to which the EU Ecolabel has been granted shall be notified to Competent Bodies, together with supporting information to enable verification of continued compliance with the criteria.

As a prerequisite the hard covering product(s) shall meet all applicable legal requirements of the country or countries in which the product is placed on the market. The applicant shall declare the product’s compliance with this requirement.”

In plain English, these conditions basically mean that:

-  ***While the applicant should provide all the relevant information to the competent body, it is also possible for suppliers or other upstream actors to provide information directly to the competent body, thus by-passing the applicant. This could be relevant if, for example, certain information is considered as commercially sensitive.***
-  ***The competent body has the right to accept results from test methods that they consider suitably equivalent to those stated in Commission Decision (EU) 2021/476.***
-  ***The competent body has the right to investigate further the validity of data and information supplied to ensure that the criteria are being complied with.***
-  ***If the application is successful, there is an obligation for the license holder to check for continued compliance and notify the competent body of any non-compliance issues.***

Horizontal criteria (common to all hard covering products)

Criterion 1.1 Industrial and construction mineral extraction

i Interpretation of criterion:

The criterion requires a number of pieces of information relating to the raw materials extracted. Such materials may be extracted by the same applicant company or by another company. Depending on the product(s) in question, there may be more than one raw material for which information is required.

As a minimum, information should be provided for the following raw materials, as a function of the product type in question:

- **For intermediate or final natural stone products:** information relating to dimension stone extraction activities at the natural stone quarry or quarries.
- **For agglomerated stone products:** information relating to extraction activities for virgin limestone/marble or quartz material. It should be noted that if the limestone or quartz are by-products of dimension stone extraction from natural stone quarries, information about the quarry shall still be required.
- **For ceramic products:** information relating to the extraction of clay or other non-metallic minerals, such as feldspars. In cases where multiple minerals are used, information should cover the extraction activities relating to at least 90% by weight of the raw materials used in the product(s).
- **For intermediate hydraulic binder products:** information relating to the extraction of limestone and clay. In cases where multiple minerals are used, information should cover the extraction activities relating to at least 90% by weight of the raw materials used in the product(s). This requirement applies equally whether the raw materials enter the kiln or are used as supplementary virgin materials that may be blended with the cement clinker or lime afterwards.
- **For intermediate alternative cement products:** information relating to the extraction of limestone, clay or any other virgin raw materials that may be used. In cases where multiple minerals are used, information should cover the extraction activities relating to at least 90% by weight of the raw materials used in the product(s).
- **For precast concrete products:** information relating to the extraction of coarse virgin aggregates, fine virgin aggregates and any virgin mineral fillers used. In cases where multiple minerals are used, information should cover the extraction activities relating to at least 90% by weight of the raw materials used in the product(s).
- **For compressed earth blocks:** information relating to the extraction of any virgin clay or other non-metallic minerals. In cases where multiple minerals are used, information should cover the extraction activities relating to at least 90% by weight of the raw materials used in the product(s).

*Because the criteria are pass/fail and the precise contents of virgin raw materials used could vary significantly between products covered by the same EU Ecolabel application, it would be **simplest to combine all relevant information about virgin raw materials in a single entry to the Parts C & D excel file** that accounts for all products covered by the application.*

Required documentation for Assessment and verification:

The applicant shall provide documentation to the Competent Body containing information that demonstrates compliance with the requirement.

-  Fill out the Declaration in Parts C & D excel file worksheet for criterion 1.1, specifying the relevant raw material(s) and quarry or quarries. It should be explained here whether or not the quarries are owned or operated by the applicant or by another organisation.
-  Provide a map or maps of where the relevant virgin raw material quarry or quarries are located and documentation from a relevant regional or national authority that the extraction activity is authorised.
-  A copy of an environmental impact screening study for the extraction activities at each relevant virgin material quarry and, if deemed relevant by the screening exercise, a full environmental impact assessment report.
-  A copy of the rehabilitation management plan for the relevant virgin material quarry or quarries.
-  A declaration of the quarry owner/operator of compliance with the requirements of Regulation (EU) No 1143/2014 on the prevention and management of the introduction and spread of invasive alien species.
-  A declaration of the quarry owner/operator of compliance with the requirements of Directive 92/43/EEC (Habitats Directive) and Directive 2009/147/EC (Birds Directive).

In cases of raw materials that are extracted from sites located outside the EU, direct compliance with the Habitats Directive, the Birds Directive or the Invasive Species Regulation is not possible since a different legal framework will apply. In these cases, and specifically when the extraction sites lie within protected areas, the burden of providing equivalent evidence that is deemed satisfactory by the Competent Body lies with the quarry owner/operator.

With regards to environmental impact assessments and rehabilitation management plans, the same principles defined in EU methodology can quite easily be applied to non-EU quarries, even if not exactly in compliance with the EU legislation.

For clarity, rehabilitation management plans shall be requested for relevant quarries regardless of whether or not they are linked to the authorisation of the extraction activity.

Also for clarity, to avoid disproportionate assessment and verification efforts, the 90% raw material threshold stated in this User Manuals should not be considered as absolutely rigid. For example, if there are 6 virgin raw materials used, and 4 of them account for 88% of the total, it could be deemed optional to provide evidence for either of the remaining 2 materials.



How the interface looks in the Parts C & D excel worksheet

Non-*virgin* raw materials are counted as automatically meeting the requirements if the applicant selects “*n/a not virgin material*” in columns F to J.

This is the % of raw materials that meet each of the 5 main requirements of criterion 1.1. All of these values should ideally be 100. If <90, text is flagged in red

| EU Ecolabel hard covering products | | | | | | | | | | |
|------------------------------------|--|--|------------------------------|---|---|---|--|--|---|--------------------------|
| 1 | | | | | | | | | | |
| 2 | Type of product subject to the application: | Precast concrete or compressed earth block | | | | | | | | |
| 3 | Level of data reported for criterion 1.1: | At the production run level (1 data set per >1 licensed product) | | | | | | | | |
| 4 | Criterion 1.1 - Industrial & construction mineral extraction | | | | | | | | | |
| 5 | Share of raw materials covered by each sub-requirement (should be >90%): | | | | | | | | | |
| 6 | Please indicate the relevant raw materials used, stating clearly whether it is virgin or secondary/recycled material | Please indicate the approximate % share (by weight) of the total ingoing materials that this material accounts for | Is it a virgin raw material? | Is quarry owned or operated by the applicant? | Quarry location and authorisation provided to CB? (and by whom) | Copy of EIA screening and/or EIA report provided? | Copy of rehabilitation management plan provided? | Declaration from quarry owner/operator on invasive species provided? | Declaration from quarry owner/operator on the habitats and birds Directives provided? | |
| 7 | Coarse aggregate-recycled concrete aggregate (8-16mm) | 22.0 | No | n/a, not virgin material | n/a, not virgin material | n/a, not virgin material | n/a, not virgin material | n/a, not virgin material | n/a, not virgin material | n/a, not virgin material |
| 8 | Coarse aggregate-gravel (8-16mm) | 46.0 | Yes | No | Yes, by applicant | Yes, by applicant | Yes, by applicant | Yes, by applicant | Yes, by applicant | Yes, by applicant |
| 9 | Coarse aggregate-recycled concrete aggregate (4-8mm) | 5.0 | No | n/a, not virgin material | n/a, not virgin material | n/a, not virgin material | n/a, not virgin material | n/a, not virgin material | n/a, not virgin material | n/a, not virgin material |
| 10 | Fine aggregate-gravel (0.5-2.0mm) | 12.0 | Yes | No | Yes, by quarry operator | Yes, by quarry operator | Yes, by quarry operator | Yes, by quarry operator | Yes, by quarry operator | Yes, by quarry operator |
| 11 | Filler-limestone | 8.0 | Yes | No | Yes, by applicant | No | Yes, by applicant | Yes, by applicant | Yes, by applicant | Yes, by applicant |
| 12 | Sand | 7.0 | Yes | No | Yes, by quarry operator | No | Yes, by quarry operator | Yes, by quarry operator | Yes, by quarry operator | Yes, by quarry operator |
| 13 | | | | | | | | | | |
| 14 | | | | | | | | | | |
| 15 | | | | | | | | | | |
| 16 | | | | | | | | | | |
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| 19 | | | | | | | | | | |
| 20 | | | | | | | | | | |
| 21 | | | | | | | | | | |
| 22 | | | | | | | | | | |

In the image above, a fictitious example of raw materials used by the applicants for a production run level in making precast concrete is provided. It can be seen that the total materials counted add up to 100% and include not only virgin raw materials, **but also recycled/secondary materials**.

The requirements of criterion 1.1 generally apply to the extraction of virgin raw materials. Recycled or secondary materials should be considered as automatically compliant because they do not create any direct impacts due to extraction activities. All the user has to do is state that it is not virgin material in Column D, and select “*n/a, not virgin material*” from the dropdown menu in Columns F to J.

In Column E, it is important to define if the quarry is owned or operated by the applicant. Some limited flexibility is allowed for non-compliance with the 5 main requirements of criterion 1.1 (i.e. up to 10% of raw materials may not have all the required evidence). The thinking behind this approach is precisely for cases where third party quarry operators do not provide all the required information in a reasonable timescale, thus delaying the application. However, this flexibility should not apply to any quarries owned or operated by the applicant.

The percentage totals of compliant raw materials for each of the 5 requirements are automatically summed in cells F5 to J5. If the values are less than 90, the text automatically turns red and bold font – highlighting that this is not appropriate for awarding the license. The example above shows that the EIA screening study (or full EIA report, if one was required) to be provided for either the filler limestone and/or the sand.

If the 90% value is met for the 5 requirements, a “Pass” output is automatically generated for criterion 1.1, which also carries forward to the “Summary” worksheet.

Criterion 1.2. Restricted substances

i Interpretation of criterion:

In order to demonstrate the compliance with each of the sub-criteria under criterion 1.2 an applicant should first of all compile a list of all the relevant chemicals used, together with appropriate documentation (i.e. safety data sheet and/or a declaration from the chemical supplier).

Regarding the scope of chemicals to be addressed, it should be understood that the term “process chemicals” refers to chemicals that are used directly in the production process and that have the possibility of remaining in the final products. It should not be considered as referring to chemicals used for periodic cleaning and maintenance of equipment.

Ingoing raw materials used in the manufacturing of hard covering products is dominated by inorganic mineral materials which, with a few exceptions, do not generally have any hazardous classifications that are restricted by Article 6(6) of the EU Ecolabel regulation.

A number of chemicals may be used in the processing, such as waxes, resins, plasticisers, demoulding agents, accelerators, inks, glazes and pigments. The type of substance and its function will vary significantly depending on which of the four main sub-products is being manufactured (i.e. natural stone, agglomerated stone, ceramics or precast concrete).

Hard covering products are examples of simple articles, not having any component parts. For reference, Article 3(3) of REACH defines an article as “an object which during production is given a special shape, surface or design which determines its function to a greater degree than does its chemical composition”.

Criterion 1.2(a)

The addition of chemicals during hard covering product manufacture typically represents only a very small fraction of the overall product weight. Consequently, in order to ensure an adequate screening for Substances of Very High Concern (SVHCs) at the 0.1% weight/weight threshold, the restriction on SVHCs (criterion 1.2 (a)) has been applied to the ingoing chemicals rather than the final product or component articles therein.

Consequently, the declarations for criterion 1.2(a) must originate from the chemical supplier (being collected by either the applicant or the Competent Body). Articles 7(2) and 33 of the REACH Regulation oblige suppliers to provide information about any SVHCs present in their products or articles at levels >0.1% weight/weight whenever requested to do so by their clients or customers. A window of up to 45 days for responses from suppliers is stated in the REACH Regulation.

*For declarations from chemical suppliers, applicants should refer to example templates provided in **Annex I to the User Manual**.*

Criterion 1.2(b)

Further restrictions on other hazardous substances and mixtures that are not SVHCs come into play in criterion 1.2(b) – the so-called CLP restrictions – because they restrict substances purely on the basis of their hazard classifications as defined in the CLP Regulation.

However, unlike the SVHC restrictions, the CLP restrictions apply to the final product, not to the ingoing substances (i.e. the threshold is 0.1% weight/weight in the final product).

The assessment process is therefore more complex, not requiring a simple “yes/no” from the supplier, but instead the safety data sheet (or a suitable declaration) with quantitative information about the classification of the chemical supplied and its individual ingredients.

The starting point is the typical information that would be required in sections 2 and 3 of the safety data sheet (either provided already in the safety data sheet or in a declaration). If there are any restricted hazards identified, this needs to be entered into the Parts C & D excel sheet. Further quantitative information is needed in order to arrive at the concentration of the restricted substance or mixture that would theoretically remain in the final product (i.e. the dosing rate and the retention factor). The worst case dosing rate should be used, so that only one entry is needed for each chemical. The retention factor is by default set to 100% and it is up to the applicant to justify any reasons why a factor of less than 100% should be used.

The above information will lead to a result that is either above or below 0.10% weight/weight. If the result is below 0.10%, then no further consideration is needed and the criterion has been met for that substance or mixture.

However, if the result is higher than 0.10%, then it further needs to be considered if the chemical has been chemically modified during the process such that the restricted hazard(s) no longer apply. It should be noted that physical immobilisation is not to be considered here, even if the hazard is related to a specific exposure pathway (e.g. inhalation).

If chemical modification cannot be justified, then the final option for complying is to check if there is a derogation in place for the restricted substance or mixture.

Required documentation for Assessment and verification

-  Fill out the Declaration in the Parts C & D excel file worksheet for criterion 1.2. This includes the full list of chemicals and ingoing materials used by the applicant in the production process and filling out the other relevant columns in the excel sheet.
-  Each chemical in the list must be supported by either a safety data sheet and/or a declaration from the chemical supplier. External supplier declarations are available in **Annex I to the User Manual**.
-  If relevant, reasoning for deviation from a retention factor of 100% for the chemical or ingredient must be provided in writing to the Competent Body.
-  If relevant, reasoning for the chemical or ingredient being considered to be exempted due to chemical modification must be provided in writing to the Competent Body.
-  If relevant, evidence of compliance with any derogation conditions must be provided to the Competent Body upon request.

 All ingoing chemicals and chemical formulations used in the production process by the applicant and any supplied materials that form part of the final product shall be covered by relevant declarations for compliance with criterion 1.2(a).

 In the absence of a safety data sheet, the external supplier must declare the necessary information that would appear in sections 2 and 3 of a safety data sheet, in order to allow the applicant to evaluate compliance with criterion 1.2(b).



EU ECOLABEL USER MANUAL HARD COVERING PRODUCTS

Commission Decision (EU) 2021/476 for the award of the EU Ecolabel for HARD COVERING PRODUCTS

How the interface looks in the Parts C & D excel worksheet

Since there are a number of cells that require entries for indicator 1.2, it is worth presenting how the cells appear in the Parts C & D excel worksheet.

| EU Ecolabel hard covering products | | | | | | | |
|------------------------------------|---|---|------------|------------------------|---|---|--|
| 1 | | | | | | | |
| 2 | Type of product subject to the application: Precast concrete or compressed earth block | | | | | | |
| 23 | Criterion 1.2 - Restricted substances. All chemicals used in the production process of products covered by the application should be listed (example entry provided) | | | | | | |
| 24 | Level of data reported for criterion 1.2: Worst case data only (1 data set for worst licensed product) | | | | | | |
| 25 | Name of supplied chemical and specific classified ingredient | Is a safety data sheet or declaration provided? | CAS number | Other registry number? | 1.2 (a) Does the chemical contain any SVHC in concentrations >0.10% w/w? Or is the ingredient a SVHC? | 1.2 (b) If the chemical as a whole mixture, or ingredients in the chemical are classified with those classifications restricted for the EU Ecolabel, enter them here (one row for each) | |
| 26 | Chemical A - mixture | Yes | n/a | | No | H413 | |
| 27 | Chemical A - ingredient X | Yes | 12345-67 | | No | H410 | |
| 28 | Chemical B - mixture | Yes | n/a | | Yes | | |
| 29 | | | | | | | |



Continues to Columns I to O...

| ts | | | | | | | | | | |
|--|---|--|--|------------------------------|---|---|---|--|--------------------|--------------------|
| Type of product subject to the application: | | | | | | | | | | |
| Criterion 1.2 - Restricted substances. All should be listed (example entry provided). | | | | | | | | | 1.2. Result | Total Fails |
| Name of supplied chemical and specific classified ingredient | 1.2 (b) If the chemical as a whole mixture, or ingredients in the chemical are classified with those classifications restricted for the EU Ecolabel, enter them here (one row for each) | 1.2 (b) Maximum concentration of the restricted ingredient (%) | 1.2 (b) Maximum dosing rate of the chemical (i.e. the full combination), in kg/t | 1.2 (b) Retention factor (%) | 1.2 (b) Maximum concentration of restricted substance or mixture in the product (%) | Is the use of the chemical permitted with EU Ecolabel products? | 1.2 (b) (If >0.1%) is the hazardous substance chemically modified during processing such that the restricted hazard no longer exists? | 1.2 (b) (If >0.1% and no chemical modification) is the presence of the hazardous substance derogated and you meet the derogation conditions? | 1.2. Result | 1 |
| Chemical A - mixture | H413 | 100 | 3 | 100 | 0.3 | Consider further | No | Yes | Pass | |
| Chemical A - ingredient X | H410 | 2.5 | 30 | 100 | 0.075 | Approved | | | Pass | |
| Chemical B - mixture | | | | | | | | | Fail | |

The first field to input information is in Column B. All process chemicals used by the applicant need to be listed because all chemicals require a declaration about the SVHCs. One row is required for each restricted classification for each ingredient. In some cases, this could quickly add up to a lot of rows for relatively few chemicals used. For example, if one chemical has two ingredients (X and Y) and ingredient X is classified as H317, H373 and H410, while ingredient Y is classified as H311 and H330, a total of six rows would be required (1 for the chemical as a whole formulation, 3 for ingredient X and 2 for ingredient Y). If the chemical as a whole also had a restricted classification (i.e. the section 2 SDS type classification), this data would be inserted in the same row as used for the full chemical.

The example above shows 3 example entries Chemical A (as a mixture and with an entry for ingredient X), and Chemical B (no entry for specific ingredients therein). It is essential that each entry is covered by a safety data sheet (SDS) or a suitable declaration, which provides the same information that would appear in sections 2 and 3 of a SDS. The chemical identifiers should be entered in Columns D and E, although this might not always be available for chemical formulations. A declaration on SVHC comes in Column F. If a "Yes" is entered here it appears as red text, meaning that Chemical B does not meet the requirements (a "Fail" output should appear in Column P). There is no point continuing with the application if such a chemical is used for the EU Ecolabel products because there is no derogation made for SVHCs in Commission Decision (EU) 2021/476.

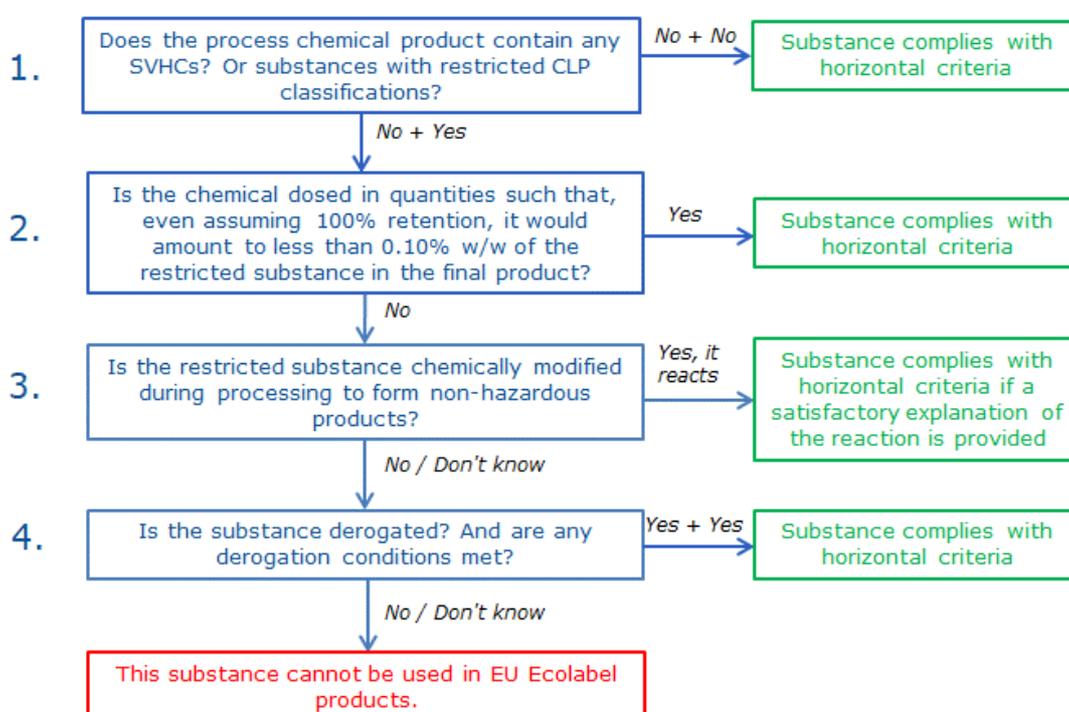
Following the entries for Chemical A, the first row shows that the mixture is actually classified with a restricted hazard (H413) and that ingredient X in the same chemical is classified with the restricted H410 hazard.

Moving on to Column I, since the whole chemical is classified as H413, basically 100% of the chemical is counted. For ingredient X, this only constituted 2.5% of chemical A, so "2.5" is entered here. In Column J, the dosing rate of the whole chemical is requested, even if the entry is only relating to one ingredient in that chemical, so since the first two rows are about the same chemical, they have the same entry here (30 kg/t). There are no reasons to deviate from the default retention factor of 100%, so "100" is entered in Column K. The values in Columns I, J and K automatically generate a % concentration in the product in Column L. If this Column L value is less than 0.1%, the entry "Approved" is automatically generated in Column M, and no

further entries are needed (a “Pass” output appears in Column P). This was the case for the “*Chemical A – Ingredient X*”, but not “*Chemical A*” as a whole, in the screenshot example above.

In cases where “*Consider further*” appears in Column M, the cell in Column N turns green. If a “No” entry appears in Column N, then the cell in Column O will turn green. If a “No” entry also appears in Column O, this triggers a “Fail” output in Column P. If a “Yes” entry appears in either Column N or O, it will trigger a “Pass” output in Column P. It is necessary to check if the restricted chemical or ingredient is chemically modified such that the restricted hazard would be no longer relevant (Column N) or if the substance is derogated (Column O). If a “Yes” appears in either Column N or O, then the chemical, or ingredient in the chemical, complies with criterion 1.2.

The excel sheet is simply a way of compiling data for restricted hazardous substances in a systematic way, following the logic below.



So in step 1, moving to the right hand side in the diagram means that the entry just needs to go up to the SVHC declaration (Column F). In step 2, going right in the diagram would correspond to the value in Column L being < 0.1%. Going right at step 3 in the diagram would correspond to a “Yes” entry in Column N and going right at step 4 would be equivalent to a “Yes” entry in Column O.

Criterion 1.3. VOC emissions

Interpretation of criterion:

Due to the cost of VOC emission testing, if worst case products can be clearly defined within the group of products covered by the EU Ecolabel application, then the test results for only these worst case products may be acceptable. Some arguments that might be used to justify a worst-case product are:

- dosed with the highest quantities of VOCs (in terms of grams of VOC per m² of surface area)*
- thinner formats with higher specific surface area (in terms of m²/kg)*
- special surface treatments with VOC-containing chemicals compared to other products.*

In cases where a broad range of products are covered by the same license, more than one worst case example will probably be necessary. For example, one worst case for blocks and one for tiles.

The EN 16516 standard is now well established and test reports should be according to this methodology rather than ISO 16000.

Because the VOC concentration in the chamber air gradually decreases with time, if the concentration limits are complied with after 3 days, or any time between 3 days and 28 days, the test can be stopped before the full 28 days. The shorter tests could translate into lower testing costs.

The limits for total VOCs and formaldehyde should be quite straightforward to interpret. However, the R-value and Carcinogenic 1A and 1B VOCs merits some further explanation.

The R value is based on all VOCs detected that have been assigned an EU LCI value. For each substance with an EU LCI that is detected, a ratio is calculated (R_i) by dividing the measured concentration by the EU LCI value: All the R_i values from a test are then added together to generate the R value. A table with all substances with EU LCI values is provided below for reference. Even though it seems like a lot of substances to analyse for, the normal situation is that only a limited number of substances with EU LCI values will actually be detected from any one given product (if any are detected at all).

Carcinogenic 1A and 1B VOCs are to be considered in line with the Construction Products Regulation (EU) No 305/2011 and thus with EN 16516 and the decisions of CEN/TC 351. If there are any contradictions between the carcinogenic VOCs to be measured by EN 16516 and the technical definition of a VOC, then the EN 16516 standard should be preferentially recognised. EN 16516 (specifically in Annex H) provides an indicative list of carcinogenic VOCs, which is also produced below, after the list of substances with an EU LCI value. For the purposes of the EU Ecolabel criteria, formaldehyde and acetaldehyde concentrations can exceed 1 $\mu\text{g}/\text{m}^3$ (a separate 10 $\mu\text{g}/\text{m}^3$) limit applies for formaldehyde and both substances are counted as contributors to the R value if detected.

Required documentation for Assessment and verification

-  Fill out the Declaration in the Parts C & D excel file worksheet for criterion 1.3. At least one entry is required, and the applicant needs to justify why each entry is representative of a worst case product.
-  Provide a test report(s) from the laboratory where the VOC emission testing was carried out, in accordance with the conditions stipulated in EN 16516.

Reference information

EU LCI values

Research into the identification of relevant substances and the appropriate EU LCI value has been ongoing for a number of years. As of December 2020³ there are more than 150 substances with EU LCI values assigned. The full list substances with EU LCI values is currently as follows:

| No. | CAS No. | Compound | EU LCI (µg/m ³) | Status of EU-LCI value | Year of adoption |
|------|--|--|-----------------------------|------------------------|------------------|
| 1 | Aromatic hydrocarbons | | | | |
| 1-1 | 108-88-3 | Toluene | 2900 | Derived | 2013 |
| 1-2 | 100-41-4 | Ethylbenzene | 850 | Derived | 2013 |
| 1-3 | 1330-20-7 106-42-3 108-38-3 95-47-6 | Xylene (o-, m-, p-) and mix of o-, m- and p-xylene isomers | 500 | Derived | 2013 |
| 1-4 | 98-82-8 | Isopropylbenzene (cumene) | 1700 | Derived | 2017 |
| 1-5 | 103-65-1 | n-Propylbenzene | 950 | Derived (read across) | 2013 |
| 1-6 | 108-67-8 95-63-6 526-73-8 | Trimethylbenzene (1,2,3-, 1,2,4-, 1,3,5-) | 450 | Derived | 2013 |
| 1-7 | 611-14-3 | 2-Ethyltoluene | 550 | Derived (read across) | 2014 |
| 1-8 | 527-84-4 535-77-3 99-87-6 25155-15-1 | Cymene (o-, m-, p-) (1-isopropyl-2(3,4)-methylbenzene) and mix of o-, m-, and p-cymene | 1000 | Ascribed | 2013 |
| 1-9 | 95-93-2 | 1,2,4,5-Tetramethylbenzene | 250 | Derived (read across) | 2016 |
| 1-10 | 104-51-8 | n-Butylbenzene | 1100 | Derived (read across) | 2014 |
| 1-11 | 99-62-7 100-18-5 | Diisopropylbenzene (1,3-, 1,4-) | 750 | Derived (read across) | 2013 |
| 1-12 | 2189-60-8 | Phenyl octane and isomers | 1100 | Derived (read across) | 2013 |
| 1-16 | 100-42-5 | Styrene | 250 | Derived | 2013 |
| 1-17 | 98-83-9 | 2-Phenylpropene (α-methylstyrene) | 1200 | Derived | 2018 |
| 1-18 | 637-50-3 | 1-Propenyl benzene (β-methyl styrene) | 1200 | Derived (read across) | 2019 |
| 1-20 | 611-15-4 100-80-1 622-97-9 25013-15-4 | Vinyl toluene (o-, m-, p-) and mix of o-, m-, and p-vinyl toluene | 1200 | Derived | 2018 |
| 1-23 | 91-20-3 | Naphthalene | 10 | Derived | 2015 |
| 1-24 | 91-17-8 | Decahydronaphthalene | 200 | Derived | 2019 |
| 1-25 | 95-13-6 | Indene | 450 | Ascribed | 2013 |
| 2 | Saturated aliphatic hydrocarbons (n-, iso- and cyclo-) | | | | |
| 2-1 | 110-54-3 | n-Hexane | 4300 | Derived | 2016 |
| 2-2 | 110-82-7 | Cyclohexane | 6000 | Ascribed | 2013 |
| 2-3 | 108-87-2 | Methyl cyclohexane | 8100 | Ascribed | 2013 |
| 2-4 | 142-82-5 | n-Heptane | 15000 | Derived | 2018 |
| 2-5 | | Other saturated aliphatic hydrocarbons C6-C8 | 14000 | Derived (read-across) | 2018 |

³ See: <https://ec.europa.eu/docsroom/documents/44905>

| No. | CAS No. | Compound | EU LCI (µg/m ³) | Status of EU-LCI value | Year of adoption |
|-------|--|---|-----------------------------|------------------------|------------------|
| 2-6 | | Other saturated aliphatic hydrocarbons C9-C16 | 6000 | Ascribed | 2013 |
| 3 | Terpenes | | | | |
| 3-1 | 498-15-7 | 3-Carene | 1500 | Ascribed | 2013 |
| 3-2 | 80-56-8 | α-Pinene | 2500 | Derived | 2013 |
| 3-3 | 127-91-3 | β-Pinene | 1400 | Ascribed | 2013 |
| 3-4 | 138-86-3 5989-27-5 5989-54-8 | Limonene | 5000 | Derived | 2014 |
| 3-5 | | Other terpene hydrocarbons | 1400 | Ascribed | 2013 |
| 4 | Aliphatic alcohols | | | | |
| 4-1 | 75-65-0 | 2-Methyl-2-propanol (tert-butanol) | 620 | Ascribed | 2013 |
| 4-2 | 78-83-1 | 2-Methyl-1-propanol | 11000 | Derived | 2016 |
| 4-3 | 71-36-3 | 1-Butanol | 3000 | Ascribed | 2013 |
| 4-4 | 71-41-0 30899-19-5 94624-12-1 6032-29-7 584-02-1 137-32-6 123-51-3 598-75-4 75-85-4 75-84-3 | 1-Pentanol (all isomers) | 730 | Ascribed | 2013 |
| 4-5 | 111-27-3 | 1-Hexanol | 2100 | Ascribed | 2013 |
| 4-6 | 108-93-0 | Cyclohexanol | 2000 | Ascribed | 2013 |
| 4-7 | 104-76-7 | 2-Ethyl-1-hexanol | 300 | Derived | 2014 |
| 4-8 | 111-87-5 | 1-Octanol | 1700 | Derived | 2016 |
| 4-9 | 123-42-2 | 4-Hydroxy-4-methyl-pentane-2-on (diacetone alcohol) | 960 | Ascribed | 2013 |
| 5 | Aromatic alcohols | | | | |
| 5-1 | 108-95-2 | Phenol | 70 | Derived | 2017 |
| 5-2 | 128-37-0 | BHT (2,6-di-tert-butyl-4-methylphenol) | 100 | Ascribed | 2013 |
| 5-3 | 100-51-6 | Benzyl alcohol | 440 | Ascribed | 2013 |
| 6 | Glycols, glycol ethers, glycol esters | | | | |
| 6-1 | 107-21-1 | Ethandiol (ethylenglykol) | 3400 | Derived | 2016 |
| 6-2* | 96-49-1 | Ethylene carbonate | 4800 | Derived (read-across) | 2020 |
| 6-3 | 7397-62-8 | Butyl glycolate | 900 | Derived | 2019 |
| 6-4 | 111-46-6 | Diethylene glycol | 5700 | Derived (read-across) | 2016 |
| 6-5 | 57-55-6 | Propylene glycol (1,2-dihydroxypropane) | 2100 | Derived | 2016 |
| 6-7 | 623-84-7 | Propylene glycol diacetate | 1600 | Derived (read-across) | 2018 |
| 6-8 | 110-98-5 25265-71-8 | Dipropylene glycol | 670 | Ascribed | 2013 |
| 6-9 | 110-63-4 | 1,4-Butanediol | 2000 | Ascribed | 2013 |
| 6-10 | 107-41-5 | Hexylene glycol (2-methyl-2,4-pentanediol) | 3500 | Derived | 2018 |
| 6-11 | 6846-50-0 | 2,2,4-Trimethylpentanediol diisobutyrate | 1300 | Derived | 2018 |
| 6-12 | 109-86-4 | Ethylene glycol monomethyl ether (2-methoxyethanol) | 100 | Derived | 2018 |
| 6-13 | 110-49-6 | 2-Methoxyethyl acetate | 150 | Derived (read-across) | 2018 |
| 6-14* | 110-71-4 | 1,2-Dimethoxyethane | 100 | Derived | 2020 |
| 6-15 | 111-96-6 | Diethylene glycol dimethyl ether (1-methoxy-2-(2-methoxy-ethoxy)- | 28 | Ascribed | 2013 |

| No. | CAS No. | Compound | EU LCI (µg/m ³) | Status of EU-LCI value | Year of adoption |
|-------|---|---|-----------------------------|------------------------|------------------|
| | | ethane) | | | |
| 6-16 | 25265-77-4 | 2,2,4-Trimethyl-1,3-pentanediol monoisobutyrate | 850 | Derived | 2018 |
| 6-17 | 109-59-1 | Ethylene glycol isopropylether (2-methylethoxyethanol) | 220 | Ascribed | 2013 |
| 6-18 | 112-49-2 | Triethylene glycol-dimethyl ether | 150 | Derived | 2019 |
| 6-19 | 110-80-5 | Ethylene glycol monoethyl ether (2-ethoxyethanol) | 600 | Derived | 2016 |
| 6-20 | 111-15-9 | 2-Ethoxyethyl acetate | 900 | Derived (read-across) | 2016 |
| 6-21* | 629-14-1 | 1,2-Diethoxyethane | 150 | Derived | 2020 |
| 6-22 | 111-90-0 | Diethylene glycol monoethyl ether (2-(2-ethoxyethoxy)ethanol) | 350 | Ascribed | 2013 |
| 6-23 | 2807-30-9 | Ethylene glycol monoisopropyl ether (2-propoxyethanol) | 860 | Ascribed | 2013 |
| 6-24 | 111-76-2 | Ethylene glycol monobutylether (2-butoxyethanol) | 1600 | Derived | 2016 |
| 6-25 | 112-07-2 | 2-Butoxyethyl acetate | 2200 | Derived (read-across) | 2016 |
| 6-26 | 112-34-5 | Diethylene glycol monobutylether | 350 | Derived | 2019 |
| 6-27 | 124-17-4 | Diethylene glycol monomethyl ether acetate (butyldiglykolacetate, 2-(2-butoxyethoxy) ethyl acetate) | 850 | Ascribed | 2013 |
| 6-28 | 122-99-6 | 2-Phenoxyethanol | 60 | Derived | 2016 |
| 6-29 | 112-25-4 | Ethylene glycol n-hexyl ether (2-hexoxyethanol) | 900 | Derived | 2019 |
| 6-30 | 112-59-4 | Diethylene glycol n-hexyl ether (2-(2-hexoxyethoxy)-ethanol) | 400 | Derived (read-across) | 2019 |
| 6-31 | 107-98-2 | Propylene glycol monomethyl ether (1-methoxy-2-propanol) | 7900 | Derived | 2018 |
| 6-32 | 1589-47-5 | 1-Propylene glycol 2-methyl ether (2-methoxy-1-propanol) | 19 | Ascribed | 2013 |
| 6-33 | 70657-70-4 | 1-Propylene glycol 2-methyl ether acetate (2-methoxy-1-propyl acetate) | 28 | Ascribed | 2013 |
| 6-34 | 7778-85-0 | 1,2-Propylene glycol dimethyl ether | 500 | Derived | 2019 |
| 6-35 | 34590-94-8 | Dipropylene glycol monomethyl ether | 3100 | Ascribed | 2013 |
| 6-36 | 88917-22-0 | Dipropylene glycol monomethyl ether acetate | 950 | Derived (read-across) | 2019 |
| 6-37 | 29911-27-1 | Dipropylene glycol mono-n-propylether | 200 | Derived (read-across) | 2019 |
| 6-38 | 29911-28-2 35884-42-5 132739-31-2 | Dipropylene glycol mono-n(t)-butylether | 250 | Derived | 2019 |
| 6-39 | 20324-33-8 25498-49-1 | Tripropylene glycol mono-methylether | 1200 | Derived | 2018 |
| 6-40 | 63019-84-1 89399-28-0 111109-77-4 | Dipropylene glycol dimethyl ether | 1300 | Ascribed | 2013 |
| 6-43 | 5131-66-8 29387-86-8 15821-83-7 63716-40-5 | 1,2-Propylene glycol n-butylether | 650 | Derived | 2018 |
| 6-44 | 104-68-7 | Diethylene glycol phenylether | 80 | Derived (read-across) | 2019 |
| 6-45* | 126-30-7 | Neopentyl glycol | 8700 | Derived | 2020 |
| 7 | Aldehydes | | | | |
| 7-1 | 50-00-0 | Formaldehyde | 100 | Derived | 2016 |

| No. | CAS No. | Compound | EU LCI (µg/m ³) | Status of EU-LCI value | Year of adoption |
|------|--|---|-----------------------------|------------------------|------------------|
| 7-2* | 75-07-0 | Acetaldehyde | 300 | Derived | 2020 |
| 7-3 | 123-38-6 | Propanal | 650 | Derived | 2018 |
| 7-4 | 123-72-8 | Butanal | 650 | Derived | 2013 |
| 7-5 | 110-62-3 | Pentanal | 800 | Derived (read-across) | 2013 |
| 7-6 | 66-25-1 | Hexanal | 900 | Derived (read-across) | 2013 |
| 7-7 | 111-71-7 | Heptanal | 900 | Derived (read-across) | 2013 |
| 7-8 | 123-05-7 | 2-Ethyl-hexanal | 900 | Derived (read-across) | 2013 |
| 7-9 | 124-13-0 | Octanal | 900 | Derived (read-across) | 2013 |
| 7-10 | 124-19-6 | Nonanal | 900 | Derived (read-across) | 2013 |
| 7-11 | 112-31-2 | Decanal | 900 | Derived (read-across) | 2013 |
| 7-12 | 4170-30-3 123-73-9 15798-64-8 | 2-Butenal (crotonaldehyd) | 5 | Derived | 2015 |
| 7-13 | 1576-87-0 764-39-6 31424-04-1 | 2-Pentenal | 7 | Derived (read-across) | 2015 |
| 7-14 | 6728-26-3 505-57-7 16635-54-4 1335-39-3 73543-95-0 | Hexenal | 7 | Derived (read-across) | 2015 |
| 7-15 | 2463-63-0 18829-55-5 57266-86-1 29381-66-6 | 2-Heptenal | 7 | Derived (read-across) | 2015 |
| 7-16 | 2363-89-5 2548-87-0 25447-69-2 20664-46-4 | 2-Octenal | 7 | Derived (read-across) | 2015 |
| 7-17 | 2463-53-8 18829-56-6 60784-31-8 | 2-Nonenal | 7 | Derived (read-across) | 2015 |
| 7-18 | 3913-71-1 2497-25-8 3913-81-3 | 2-Decenal | 7 | Derived (read-across) | 2015 |
| 7-19 | 2463-77-6 53448-07-0 1337-83-3 | 2-Undecenal | 7 | Derived (read-across) | 2015 |
| 7-20 | 98-01-1 | Furfural | 10 | Derived | 2017 |
| 7-21 | 111-30-8 | Glutaraldehyde | 1 | Derived | 2018 |
| 8 | Ketones | | | | |
| 8-1 | 78-93-3 | 2-Butanone (ethylmethylketone) | 20000 | Derived | 2016 |
| 8-2 | 563-80-4 | 3-Methyl-2-butanone | 7000 | Ascribed | 2013 |
| 8-3 | 108-10-1 | 4-Methyl-2-pentanone (methylisobutylketone) | 1000 | Derived | 2016 |
| 8-4* | 120-92-3 | Cyclopentanone | 1200 | Derived | 2020 |
| 8-5 | 108-94-1 | Cyclohexanone | 410 | Ascribed | 2013 |
| 8-6* | 1120-72-5 | 2-Methylcyclopentanone | 1400 | Derived(read-across) | 2020 |
| 8-7 | 583-60-8 | 2-Methylcyclohexanone | 2300 | Ascribed | 2013 |
| 8-8 | 98-86-2 | Acetophenone | 490 | Ascribed | 2013 |
| 8-9 | 116-09-6 | 1-Hydroxyacetone (1-hydroxy-2-propanone) | 2100 | Derived (read-across) | 2019 |
| 8-10 | 67-64-1 | Acetone | 120000 | Derived | 2018 |
| 9 | Acids | | | | |
| 9-1 | 64-19-7 | Acetic acid | 1200 | Derived | 2016 |

| No. | CAS No. | Compound | EU LCI (µg/m ³) | Status of EU-LCI value | Year of adoption |
|--------|--------------------------|---|-----------------------------|------------------------|------------------|
| 9-2 | 79-09-4 | Propionic acid | 1500 | Derived | 2016 |
| 9-3 | 79-31-2 | Isobutanoic acid (isobutyric acid) | 1800 | Derived (read-across) | 2018 |
| 9-4 | 107-92-6 | Butanoic acid (butyric acid) | 1800 | Derived (read-across) | 2018 |
| 9-5 | 75-98-9 | 2,2-Dimethylpropanoic acid (pivalic acid) | 2100 | Derived (read-across) | 2018 |
| 9-6 | 109-52-4 | n-Pentanoic acid (valeric acid) | 2100 | Derived (read-across) | 2018 |
| 9-7 | 142-62-1 | n-Hexanoic acid (caproic acid) | 2100 | Derived (read-across) | 2018 |
| 9-8 | 111-14-8 | n-Heptanoic acid | 2100 | Derived (read-across) | 2018 |
| 9-9 | 124-07-2 | n-Octanoic acid | 2100 | Derived (read-across) | 2018 |
| 9-10 | 149-57-5 | 2-Ethylhexanoic acid | 150 | Derived | 2014 |
| 10 | Esters | | | | |
| 10-1 | 108-21-4 | Propyl acetate (n-, iso-) | 4200 | Ascribed | 2013 |
| 10-2 | 108-65-6 | 2-Methoxy-1-methylethyl acetate | 650 | Derived | 2019 |
| 10-5 | 80-62-6 | Methyl methacrylate | 750 | Derived | 2016 |
| 10-7 | 110-19-0 | Isobutyl acetate | 4800 | Ascribed | 2013 |
| 10-8 | 123-86-4 | n-Butyl acetate | 4800 | Ascribed | 2013 |
| 10-9 | 103-09-3 | 2-Ethylhexyl acetate | 350 | Derived (read-across) | 2018 |
| 10-10 | 96-33-3 | Methyl acrylate | 180 | Ascribed | 2013 |
| 10-11 | 140-88-5 | Ethyl acrylate | 200 | Ascribed | 2013 |
| 10-12 | 141-32-2 | n-Butyl acrylate | 110 | Ascribed | 2013 |
| 10-13 | 103-11-7 | 2-Ethylhexyl acrylate | 380 | Ascribed | 2013 |
| 10-14 | | Other acrylates (acrylic acid esters) | 110 | Ascribed EU-LCI | 2013 |
| 10-15 | 627-93-0 | Dimethyl adipate | 50 | Ascribed | 2013 |
| 10-16* | 106-65-0 | Dimethyl succinate | 20 | Derived | 2020 |
| 10-17* | 1119-40-0 | Dimethyl glutarate | 25 | Derived | 2020 |
| 10-18* | 71195-64-7 | Diisobutyl glutarate | 35 | Derived (read-across) | 2020 |
| 10-19* | 925-06-4 | Diisobutyl succinate | 35 | Derived (read-across) | 2020 |
| 10-20 | 105-75-9 | Dibutyl fumarate | 50 | Ascribed | 2013 |
| 10-21 | 105-76-0 | Maleic acid dibutylester | 50 | Ascribed | 2013 |
| 10-22 | 13048-33-4 | Hexamethylene diacrylate | 10 | Ascribed | 2013 |
| 10-23 | 96-48-0 | Butyrolactone | 2800 | Derived | 2018 |
| 11 | Chlorinated hydrocarbons | | | | |
| 11-1 | 127-18-4 | Tetrachloroethene | 80 | Derived | 2018 |
| 11-3 | 106-46-7 | 1,4-Dichlorobenzene | 150 | Derived | 2013 |
| 12 | Others | | | | |
| 12-1 | 123-91-1 | 1,4-Dioxane | 400 | Derived | 2015 |
| 12-2 | 105-60-2 | Caprolactame | 300 | Derived | 2013 |
| 12-3 | 872-50-4 | N-Methyl-2-pyrrolidone | 1800 | Derived | 2016 |
| 12-4 | 556-67-2 | Octamethylcyclotetrasiloxane (D4) | 1200 | Ascribed | 2013 |
| 12-7 | 100-97-0 | Hexamethylenetetramine | 30 | Ascribed | 2013 |
| 12-8 | 96-29-7 | 2-Butanonoxime | 15 | Derived | 2015 |
| 12-9 | 126-73-8 | Tributyl phosphate | 300 | Derived | 2016 |
| 12-11 | 26172-55-4 | 5-Chloro-2-methyl-2H-isothiazol-3-one (CIT) | 1 | Ascribed | 2013 |
| 12-12 | 2682-20-4 | 2-Methyl-4-isothiazolin-3-one (MIT) | 100 | Ascribed | 2013 |
| 12-13 | 121-44-8 | Triethylamine | 60 | Derived | 2017 |
| 12-14 | 109-99-9 | Tetrahydrofuran | 500 | Derived | 2018 |
| 12-17 | 2687-91-4 | N-Ethyl-2-pyrrolidone | 400 | Derived | 2016 |

*new or updated entries

The list above may be subject to periodic revision and so should be considered as indicative only. Any updates could be checked for on the DG GROW website (see: https://ec.europa.eu/growth/sectors/construction/eu-lci/values_en) or from other sources.

Carcinogenic VOCs

The list below is in line with Annex H of EN 16516. However, the standard states that this list is non-exhaustive and informative. Unless decided otherwise by CEN/TC 351, for the purposes of demonstrating compliance with criterion 1.3 of [Commission Decision 2021/476](#) for the award of the EU Ecolabel to hard covering products, the 1 µg/m³ limit shall apply to each of the 40 VOCs listed below.

| No. | CAS No. | Chemical name | No. | CAS No. | Chemical name |
|-----|------------|--|-----|-----------|-------------------------------|
| 1. | 79-06-1 | Acrylamide | 21. | 120-71-8 | 6-Methoxy-m-toluidine |
| 2. | 107-13-1 | Acrylonitrile | 22. | 592-62-1 | Methyl azoxy methyl acetate |
| 3. | 71-43-2 | Benzene | 23. | 838-88-0 | 4,4-Methylene di-o-toluidine |
| 4. | 1464-53-5 | 2,2'-Bioxirane | 24. | 79-46-9 | 2-Nitropropane |
| 5. | 542-88-1 | Bis (chloromethyl) ether | 25. | 621-64-7 | Nitrosodipropylamine |
| 6. | 106-47-8 | 4-Chloroaniline | 26. | 1116-54-7 | 2,2'-(Nitrosoimino)bisethanol |
| 7. | 106-89-8 | Epichlorohydrine | 27. | 88-72-2 | 2-Nitrotoluene |
| 8. | 51594-55-9 | (R)-(-)-Epichlorohydrine | 28. | 122-60-1 | Phenyl glycidyl ether |
| 9. | 95-69-2 | 4-Chloro-2-methylaniline | 29. | 1120-71-4 | 3-Propanesultone |
| 10. | 100-44-7 | Benzyl chloride | 30. | 91-22-5 | Quinoline |
| 11. | 96-12-8 | 1,2-Dibromo-3-chloropropane | 31. | 94-59-7 | 5-Allyl-1,3-benzodioxole |
| 12. | 106-93-4 | 1,2-Dibromoethane | 32. | 96-09-3 | Styrene oxide |
| 13. | 764-41-0 | 1,4-Dichlorobut-2-ene | 33. | 95-06-7 | Sulfallate |
| 14. | 107-06-2 | Ethylene dichloride | 34. | 5216-25-1 | 4-Chlorobenzotrichloride |
| 15. | 78-87-5 | 1,2-dichloropropane; propylene dichloride | 35. | 95-53-4 | o-Toluidine |
| 16. | 96-23-1 | 1,3-Dichloro-2-propanol | 36. | 79-01-6 | Trichloroethylene |
| 17. | 79-44-7 | Dimethylcarbamoyl chloride | 37. | 96-18-4 | 1,2,3-Trichloropropane |
| 18. | 540-73-8 | N,N'-Dimethylhydrazine; 1,2-Dimethylhydrazine | 38. | 98-07-7 | Benzotrichloride |
| 19. | 680-31-9 | Hexamethylphosphoric triamide | 39. | 137-17-7 | 2,4,5-Trimethylaniline |
| 20. | 90-04-0 | 2-Methoxyaniline | 40. | 51-79-6 | Urethane |

 The latest version of the list should apply for the date when testing was carried out, and the test date(s) should not be more than 12 months before the date of application.

Criterion 1.4. Fitness for use

Interpretation of criterion:

Quality management systems are defined in EN ISO 9000 and ISO 9001. The definitions are broadly set to potentially apply to any organisation.

The fitness for use criterion for hard covering products aligns with these principles by requesting proof of the quality control and quality assessment procedure in place. The simplest way to do this would be to show the ISO 9001 certificate for the production site(s) of the applicant.

However, it is important to note that ISO 9001 certification is not essential. If similar in-house systems have been set up, these can be described to the Competent Body.

With regards to Quality Management of the production process, the description may include many different aspects, of which the following would be most expected:

- define the production process and the objectives of each part or unit of the production system*
- define the roles, responsibilities and accountabilities for the production process as a whole and its distinctive parts*
- define the capacity of the process and the capability of the organisation, in terms of production*
- explain how the different processes in the production system are related and interdependent*
- explain how processes are monitored and controlled*
- explain how quality of products is assessed*

The procedure for handling customer complaints should be straightforward to describe (especially in small to medium enterprises operating at regional or national level).

Any fitness for use requirements should be well understood by applicants since almost all products would need to carry a CE marking, because of the existence of the Construction Products Regulation and the fact that the scope mainly refers to construction products. Non-construction products that are in the scope, namely kitchen worktops, table-tops and vanity tops, do not need a CE marking since they could be described as furniture products.

Whether there is a CE marking or not, applicants should identify any relevant fitness for use standards that have been applied to some or all of the products covered by the application.

Required documentation for Assessment and verification

-  Fill out the Declaration in the Parts C & D excel file worksheet for criterion 1.4.
-  A copy of the ISO 9001 certificate or a description of the in-house Quality Management System.
-  A description and/or copy of the customer complaints handling procedure.

Criterion 1.5. User information

Interpretation of criterion:

Flexibility is given to applicants about how exactly to make user information available to clients and users. The one necessity is that user information must be made available in electronic format that can be accessed via the internet, without any access restrictions. The main reason for this is because the installers and end users may not necessarily be the people who originally purchased the product

The information should ideally also be made available in paper format with the physically purchased product, in the official language of where the product is placed on the market. However, in cases where products are exported globally, it would be more practical to substitute a multi-lingual paper copy of user information for a QR code on the packaging and/or on invoices, clearly stating that this is a link to user information for the product(s).

The user information needs to include, as a minimum:

- details about relevant technical performance*
- details about correct preparation and installation*
- instructions on proper cleaning and maintenance*
- information about correct disposal (of both product and packaging materials)*

In cases where many different products are covered by the application, only a sample of user information should be necessary – although it would ultimately be up to the Competent Body to decide how many samples are sufficiently representative.

Required documentation for Assessment and verification

-  Fill out the Declaration in the Parts C & D excel file worksheet for criterion 1.5.
-  Representative samples of the user information.

Criterion 1.6. Information appearing on the EU Ecolabel

 The guidelines for the use of the optional label with text box can be found in the "Guidelines for use of the Ecolabel logo" at: http://ec.europa.eu/environment/ecolabel/documents/logo_guidelines.pdf

Interpretation of criterion:

The relevant information indicated by Criterion 1.6 shall appear on the packaging for the product(s), regardless of whether this is a Business to Business (B2B) or Business to Consumer (B2C) product.

The applicant shall follow the instructions on how to properly use the EU Ecolabel logo provided in the EU Ecolabel Logo Guidelines:

If the optional label with text box is used, it shall contain the three statements mentioned in the criteria document. No other statements can be used in the box, but applicants are obviously free to provide additional information on other parts of the packaging.

Required documentation for Assessment and verification

 Fill out the Declaration in the Parts C & D excel file worksheet for criterion 1.6.

 Image(s) of product packaging that are representative of the products covered by the application.

Criterion 1.7. Environmental Management System (optional)

Interpretation of criterion:

Because this criterion is optional, there is no need to submit any information or declaration. However, if no indication is provided, 0 points shall be awarded for the criterion by default. If the site(s) where the products are produced are covered by EMAS registration, 5 points shall be awarded. If the site is not EMAS registered but is certified according to ISO 14001, 3 points shall be awarded. In all other cases, 0 points shall be awarded.

Points for the Environment Management System should only be counted for the sites covered by the applicant. This has a potential implication for transformed natural stone products and precast concretes in cases where the intermediate product has already been awarded the EU Ecolabel and part of the points total for the intermediate product was due to criterion 1.7.

In such cases, the supplier of the intermediate product or the competent body that awarded the license for the intermediate product should confirm the points total and if any points were due to criterion 1.7.

Required documentation for Assessment and verification

 Fill out the Declaration in the Parts C & D excel file worksheet for criterion 1.7.



**EU ECOLABEL USER MANUAL
HARD COVERING PRODUCTS**

Commission Decision (EU) 2021/476 for the award of the EU Ecolabel for HARD COVERING PRODUCTS



Provide a copy of the ISO 14001 certification or documentation relating to EMAS registration.

Natural stone product criteria

Criterion 2.1 – Energy consumption at the quarry

i Interpretation of criterion:

Mandatory part

The mandatory element of this criterion is to implement a plan to systematically monitor, record and reduce specific energy consumption and specific CO₂ emissions. The monitoring and recording system should amount to an inventory of fuel and electricity consumption and of production output. Evidence of electricity consumption should come from meter readings and bills. The monitoring of fuel consumption will depend on how fuel is handled onsite, but delivery notes, receipts and invoices will normally be the most appropriate way. Production output should be self-explanatory, referring to actual saleable products.

The energy inventory for the quarry needs to cover a period of at least 12 months prior to the date of award of the EU Ecolabel. Because it was not possible to identify concrete benchmarks of energy consumption per unit of production output during background research, no pass/fail limit has been set in the criterion. So the main challenge is simply to gather the data in the first place. In cases where the data collection is something new for the applicant, it is recommended to start the application prior to the inventory having 12 months of data (e.g. a 6 month inventory might work at the beginning of the application process if the processing of the application and award of the EU Ecolabel was to take another 6 months – presuming that the inventory is kept up to date during the application process).

The CO₂ footprint for consumed electricity should be specified, so that it can be translated into CO₂ footprints. If more than one electricity source is used and each has a different CO₂ footprint, a weighted average CO₂ footprint should be used. The type or types of fuel used should also be specified, for the same purpose.

If fuel is converted to electricity onsite (e.g. diesel generators) this should only be counted once, as the primary energy source (i.e. the fuel). If a combination of renewable electricity generated onsite and grid electricity is used, the metering should be set up so that all consumption onsite can be counted, regardless of where it comes from and if it is associated with a bill or not.

Care should be taken about the scope for fuel consumption, especially if the fuel consumption of vehicles that travel offsite is included or not. The simplest option would be to exclude vehicles that are used offsite, as this could be influenced by factors that are not related to the production process (e.g. employee travel to homes and elsewhere). However, the criterion leaves it up to the applicant to define the exact scope and then to apply it consistently.

Renewable energy (15 points in total)

For clarity, the first 10 points that are available refer to the share of renewable energy (i.e. electricity plus fuel). The next 5 points refer to how renewable electricity is sourced, regardless of how much of the total electricity is due to renewables. In cases where renewable electricity comes from more than one type of contracting (e.g. onsite generated via PV panels and a share of renewables in a green tariff from the utility supplier) the source that accounts for the largest share of renewable electricity shall be chosen.

Carbon footprint analysis (5 points in total)

The information required in criterion 2.1 (together with information about other criteria) could be used as a

basis for a carbon footprint analysis. If such an analysis has been done in line with ISO 14067, 3 points shall be awarded. If it has been done in accordance with PEF methodology, 5 points shall be awarded. Any other methods used will not result in the awarding of points unless a suitable equivalence can be justified to the Competent Body.

How the interface looks in the Parts C & D excel worksheet

Since there are a number of cells that require entries for indicator 2.1, it is worth presenting how the cells appear in the Parts C & D excel worksheet.

| A | B | C | D | E | F | G | H | I | J | |
|----|--|---|---------------------------------------|---------------------------|---|---|---------------|---------------------------------|----------|--|
| 1 | EU Ecolabel hard covering products | | | | | | | | | |
| 2 | Type of product subject to the application: | Natural stone (intermediate block/slab from quarry) | | | | | | | | |
| 4 | Reference name for data entry | | | | | | | | | |
| 5 | Has an energy inventory been kept for fuel and electricity consumption at the quarry? | Yes | | | | | | | | |
| 6 | Is there a plan to reduce specific energy consumption and CO2 emissions at the quarry? | Yes | | | | | | | | |
| 7 | Key data from energy inventory | Data input | Units | | | | Points | | | |
| 8 | Time period of data collection: | | | | | | | | | |
| 9 | Approximate density of stone: | 2450 | kg/m ³ | | | | | | | |
| 10 | Material extracted during this time period: | 450 | m ³ | | | | | | | |
| 11 | Of which has been sold or is ready for sale: | 200 | m ³ | | | | | | | |
| 12 | Material extracted during this time period: | 1102.5 | tonnes | | | | | | | |
| 13 | Of which has been sold or is ready for sale: | 490 | tonnes | | | | | | | |
| 14 | Total electricity consumption: | 50000 | kWh | | | | 356 | gCO ₂ eq./kWh | | |
| 15 | Total electricity CO ₂ : | 17800 | kgCO ₂ eq. | | | | | | | |
| 16 | Fuel-1 consumption (quantity): | 100 | Units | | | | 40 | MJ/unit of fuel-1 | | |
| 17 | Fuel-1 consumption (energy): | 4000 | MJ | | | | 100 | g CO ₂ eq./MJ fuel-1 | | |
| 18 | Fuel-1 CO ₂ emissions | 400 | kgCO ₂ eq. | | | | | | | |
| 19 | Fuel-2 consumption (quantity): | 100 | Units | | | | 50 | MJ/unit of fuel-2 | | |
| 20 | Fuel-2 consumption (energy): | 5000 | MJ | | | | 100 | g CO ₂ eq./MJ fuel-2 | | |
| 21 | Fuel-2 CO ₂ emissions | 500 | kgCO ₂ eq. | | | | | | | |
| 22 | Fuel-3 consumption (quantity): | 100 | Units | | | | 40 | MJ/unit of fuel-3 | | |
| 23 | Fuel-3 consumption (energy): | 4000 | MJ | | | | 200 | g CO ₂ eq./MJ fuel-3 | | |
| 24 | Fuel-3 CO ₂ emissions | 800 | kgCO ₂ eq. | | | | | | | |
| 25 | Total fuel consumption (energy): | 13000 | MJ | | | | | | | |
| 26 | Total fuel CO ₂ : | 1700 | kgCO ₂ eq. | | | | | | | |
| 27 | Total energy consumption (kWh) | 53611 | kWh | | | | | | | |
| 28 | Total energy consumption (MJ) | 193000 | MJ | | | | | | | |
| 29 | Total CO ₂ : | 19500 | kg CO ₂ eq. | | | | | | | |
| 30 | Specific energy consumption (kWh/m ³) | 268.1 | kWh/m ³ | | | | | | | |
| 31 | Specific energy consumption (kWh/tonne) | 109.4 | kWh/tonne | | | | | | | |
| 32 | Specific energy consumption (MJ/m ³) | 965.0 | MJ/m ³ | | | | | | | |
| 33 | Specific energy consumption (MJ/t) | 393.9 | MJ/tonne | | | | | | | |
| 34 | Specific CO ₂ (per m ³) | 97.5 | kg CO ₂ eq./m ³ | | | | | | | |
| 35 | Specific CO ₂ (per tonne) | 3.5 | kg CO ₂ eq./tonne | | | | | | | |
| 36 | Percentage of energy that is renewable | 60 | % | | | | 6.00 | out of 10 | | |
| 37 | Type of renewable electricity used (if any) | Long term corporate purchase agreements for grid-connected or remote grid renewables; | | | | | | 4.00 | out of 5 | |
| 38 | Has an ISO 14067 or PEF method analysis of the products carbon footprint/global warming impact been carried out? | No | | | | | | 0.00 | out of 5 | |
| | Summary | Horizontal 1.1 to 1.7 | | Natural stone 2.1 to 2.11 | | | VLOC | | | |

Cells in green must be filled out and cells in red generate results automatically. The first green cell (C4) refers to the name that will be associated with the data entry (it could simply be the name of the quarry and a reference year). In cells C5 and C6, the applicant is required to confirm that they are meeting the mandatory elements of criterion 2.1. It should be noted that the competent body may ask for more details about what is behind the “Yes” entries to C5 and C6.



The next 6 rows that define the period and the quantities of material extracted and production output (i.e. of saleable products). The approximate density of the stone is important for converting units from m³ to tonnes. In cases where more than one stone density applies, the applicant should estimate a weighted average stone density for products covered by the same energy data.

At cell C14, the first input relating to energy consumption appears (electricity, in kWh). An input is also required for the carbon factor of the electricity used (in gCO₂ eq. per kWh). This will automatically generate a total electricity CO₂ in cell C15. With fuel consumption, it is necessary to define the quantity of fuel consumed (in volume or mass) and then to define both the calorific value of the fuel and the carbon factor of the fuel. This will define 2 outputs: for total fuel energy and for total fuel CO₂ (in cells C17 and C18 respectively). Since each fuel has its own specific calorific value and carbon factor, it might be complicated to make a weighted average estimation. For this reason, scope is made in the excel file to define 3 separate fuel inputs.

If multiple electricity sources and fuel sources are used, these numbers should be detailed separately (meter readings, invoices etc.) and made available to the Competent Body upon request. The CO₂ factors for the fuel and electricity should be based on information from the suppliers. In cases of doubt about fuel factors, the values in Annex VI to Commission Implementing Regulation (EU) 2018/2066 could be used.

The next rows are simply the automatically calculated totals for energy (in kWh and in MJ) and CO₂ (in kg) and specific energy and CO₂ (in kWh, MJ and kgCO₂ per tonne and per m³). The automatic calculations for total energy (i.e. fuel plus electricity) already take into account the conversion factor for kWh and MJ (i.e. 1kWh = 3.6 MJ). The values in cells C33 and C35 are automatically shown in the "Summary worksheet".

 It should be noted that the specific energy consumption is based on the total saleable material extracted and NOT the total material extracted. So one way to improve specific energy consumption and specific CO₂ emissions is to improve material extraction efficiency (see criterion 2.2 for more details about what exactly should be considered as saleable products and by-products).

The final three rows are where points are awarded. The first one relates to the share of renewable energy (i.e. fuel plus electricity). The next row is about the major mechanism for contracting renewable electricity and the final row is about if and how a carbon footprint has been carried out for the products.

 By obtaining the data necessary to fill out the excel sheet for criterion 2.1, most of the key information needed for doing a carbon footprint analysis has been done already. So applicants are encouraged (but not obliged) to go a step further in order to obtain an extra 3 or 5 points.

Required documentation for Assessment and verification:

-  (Upon request) a copy of the fuel and electricity inventory for the relevant period where data was submitted, which also explains the scope of processes and operations covered by the inventory.
-  (Upon request) a copy of the plan to reduce specific energy consumption and CO₂ emissions for production output.
-  Fill out the Parts C & D excel file worksheet for criterion 2.1, specifying the quantity of material extracted, the saleable material obtained and the total fuel and electricity consumption during the same period.
-  (Upon request) copies of meter readings, bills and invoices for electricity and fuel to justify the numbers entered.



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-  A written breakdown of the different fuel and electricity sources used (if relevant), and how the carbon factors were calculated and how the % renewables was estimated.
-  A copy of the electricity supply contract or other written evidence that would justify any claims for onsite or near-site renewables.
-  (If points are claimed) A copy of the carbon footprint certificate or EPD, stating that the method is in line with ISO 14067 or PEF.

Criterion 2.2 – Material efficiency at the quarry

① Interpretation of criterion:

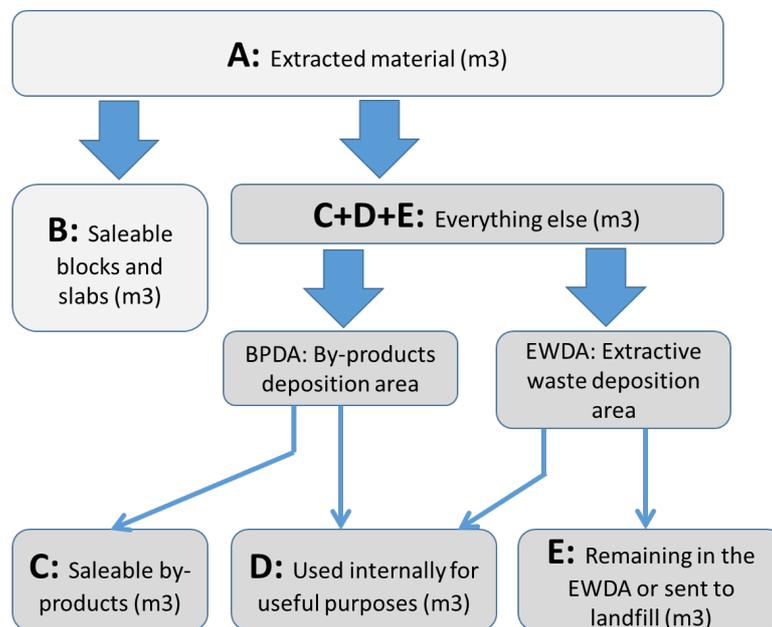
To generate the material extraction efficiency at the quarry over a defined period, it is necessary to know three things:

- the total quantity of material extracted (A)
- the total quantity of saleable blocks (or slabs) produced (B)
- the total quantity of saleable by-products produced (C)

While the value of A should be easy to estimate, as it is linked in part to operating permits and can be visually assessed by inspecting the quarry front(s), the other two (B and C) are more difficult, because they are linked to sales. Sale of material might refer to material extracted during the data collection period or from a stockpile of already extracted material that has been stored at the quarry for several years. Conversely, material might be extracted during a period of low sales, causing a stockpile to build up onsite and an apparently low efficiency of material extraction.

For these reasons, it is best if the quantities for B and C refer to “saleable” blocks (and slabs) and “saleable” by-products, respectively. By “saleable”, it is meant that these products/by-products have sufficient quality and characteristics in order to be sold (not given away for free). This judgment should be justified based on previous commercial experience of the quarry operator.

The material flows in the quarry should be set out as follows:



The exact volumes of C, D and E can only be estimated, since they will consist of a range of irregular pieces of stone blocks, fragments and dust. As a check however, C+D+E cannot be greater than A-B for the data collection period. Estimates of C, D and E should be based on the density of the stone material and the bulk packing density of the material in the BDPA and EWDA. For clarity, quarry operators should never send potentially saleable by-products to the EWDA. Data should be collected for at least 12 consecutive months. Longer periods of data collection shall also be permitted.

How the interface looks in the Parts C & D excel worksheet

Since there are a number of cells that require entries for indicator 2.2, it is worth presenting how the cells appear in the Parts C & D excel worksheet.

| EU Ecolabel hard covering products | | | |
|------------------------------------|--|---|----------------|
| 1 | | | |
| 2 | Type of product subject to the application: | Natural stone (intermediate block/slab from quarry) | |
| 40 | | | |
| 41 | Criterion 2.2. Material efficiency at the quarry | | |
| 42 | Reference name for data entry | | |
| 43 | Key data from material inventory | Data input | Units |
| 44 | Time period of data collection: | | n/a |
| 45 | A: Total quantity of material extracted: | 1000 | m ³ |
| 46 | B: Saleable blocks produced from A: | 300 | m ³ |
| 47 | C: Total quantity of by-products sold: | 350 | m ³ |
| 48 | D: Total quantity of extractive waste used internally: | 100 | m ³ |
| 49 | E: Total quantity of extractive waste transferred to the extractive waste deposition area or by-products transferred to the by-products deposition area: | 250 | m ³ |
| 50 | Extraction efficiency ratio: | 0.65 | n/a |
| 51 | | | |

| Check | |
|-------|---------------|
| 700 | (A-B check) |
| 700 | (C+D+E check) |
| 0 | Balance check |

| Points |
|--------|
| 7.50 |

A total of 5 inputs are needed for the excel worksheet for criterion 2.2 plus two optional inputs.. Each input should be linked to a material flow inventory of the quarry. Such an inventory should track the movements of extracted materials into the following destinations: saleable products; saleable by-products; internally used by-products and stored or disposed of extractive wastes.

The monitoring period should be at least 12 months, but longer periods are also permitted. Whatever the monitoring period is, it should be specified in the cell C44. During this period, the inventory should be compiled with material flows in such a way that it is straightforward to calculate the values for A, B, C, D and E. A copy of the inventory should be made available to the Competent Body upon request.

It is important to note that A-B should be equal to C+D+E, but only if the applicant has actually reported for D and E, which are optional. In reality these numbers will never match perfectly, even with the best efforts to accurately obtain data, due to inaccuracies in estimates of material flows, inaccuracies in estimates of bulk densities and due to losses of material as windblown dust and rainfall carrying fines away. So whether the numbers match or not is purely for information and to highlight any obvious problems with estimations.

 If applicants report on the flows for “D” and “E” and they wish to revise their numbers to approximate towards a balance check of zero, the estimates for D and/or E should be revised and not the estimates for A, B or C.

Required documentation for Assessment and verification:

-  (Upon request) a copy of the material flow inventory for the relevant period where data was submitted, which also explains the scope of processes and operations covered by the inventory.
-  Fill out Parts C & D excel file worksheet for criterion 2.2, specifying the quantity of material extracted, the saleable products and by-products obtained, by-products and extractive waste used onsite and extractive waste disposed of or stored onsite.

Criterion 2.3 – Water/wastewater management at the quarry

Interpretation of criterion:

A description of how water is used in the quarry shall be provided to the Competent Body. This description shall cover, as a minimum, the following aspects:

- how does stormwater flow and drain on the site
- what processes actually consume water at the quarry
- how water is supplied to the quarry processes
- what happens to the process wastewater (how is it treated and recirculated)
- what happens to the wastewater sludge (how is it stored and where does it end up)

A visual description of the site should also be included. For example, a satellite photograph, with indications pasted on top about the locations and routing of any water and wastewater flows would be a useful basis for a description. Upon request, photos and technical drawings of any process wastewater treatment equipment should also be provided.

Required documentation for Assessment and verification:

-  Description of how stormwater flows and how process water is supplied, treated and disposed of onsite.
-  Fill out the Parts C & D excel file worksheet for criterion 2.3.
-  (Upon request) photos and technical drawings of any wastewater treatment equipment.

Criterion 2.4 – Dust control at the quarry

Interpretation of criterion:

A description of the main sources of dust emission and how operational site measures for dust control have been implemented needs to be provided. The description should cover each of the points in criterion 2.4. The only exception to this is potentially the 2nd point, where underground quarries might not need such a plan.

When the description makes reference to training about good practice for dust control, a copy of this material should be provided to the Competent Body upon request. Details of the medical check-up program for employees should also be included.

Required documentation for Assessment and verification:

-  A description of the site processes that generate dust emissions and the measures in place to reduce the emissions of dust from the quarry.
-  (Upon request) copies of training material and the medical check program for employees.
-  Fill out the Parts C & D excel file worksheet for criterion 2.4.

Criterion 2.5 – Personnel safety and working conditions at the quarry

Interpretation of criterion:

The applicant needs to provide a copy of their occupational health and safety policy. This policy must cover each of the points listed in criterion 2.5. If some points are missing from the policy, then an updated policy must be provided or a supplementary declaration that provides the required information.

Photos and/or technical drawings of the equipment and safety features onsite should also be provided. A map of the site should be provided, indicating where toilets, changing rooms and lunchroom facilities are located. It is possible that these facilities might not be physically on the quarry site but be centralised facilities for multiple quarries operating in the same locality.

Required documentation for Assessment and verification:

-  A copy of the occupational health and safety policy, with any supplementary information, as necessary
-  Fill out the Parts C & D excel file worksheet for criterion 2.5.
-  (If in EU) A declaration of compliance with national laws and EU regulations about health and safety legislation and worker rights.
-  (If outside EU) A declaration of compliance with national laws about health and safety legislation and worker rights, plus a third party certified verification that the fundamental ILO conventions are respected.
-  Copies of labour contracts for workers.

Criterion 2.6 – Quarry landscape impact ratios (optional)

i Interpretation of criterion:

Quarries can have a wide range of different appearances, depending on the topography of the site, the topography of the surrounding areas and where the material to be extracted is located. Because this criterion can favour some types of sites over others, it is an optional criterion. Nevertheless, it can encourage the ongoing remediation of inactive areas and the installation of renewable energy infrastructure on all sites.

This criterion looks at the different surface areas of a quarry from an aerial or satellite view. Ideally the whole quarry area (TAA) can be split into QF (active Quarry Front), EWDA (Extractive Waste Deposition Area, BPDA (By-Products Deposition Area, BA (Biodiverse Area) and REA (Renewable Energy Area). Some further information about how the areas should be counted is provided below.

The QF can be considered as the active working area. Although in reality the working area can vary from one day to the next, it should be considered as all areas that need to be kept free for the extraction activity. So the QF does not only include the steps where the material is currently being extracted, but also any access ramps and pathways for vehicles and machinery to get to the quarry front and to transport materials to the EWDA, to the BPDA and to the quarry gate.

The EWDA must be clearly defined on a satellite view of the quarry. The more efficient the extraction process, the less EW is produced and the smaller the EWDA needs to be. Likewise, a more efficient packing of EW and finding reuse applications for EW will reduce the necessary EWDA. For example, EW could be used for building ramps, for building wind-breaks or for delineating access roads in and around the boundary of the site. Additionally, EW could be sent to a communal inert landfill or EWDA that is shared by numerous small quarries in the same place. This last point could potentially reduce the necessary EWDA to almost zero, depending on how frequently the EW is transported offsite. If EW is indeed sent offsite for disposal, this should be logged and the communal EWDA or landfill(s) identified.

The BPDA area must also be clearly defined and the same points apply as for EDWA, with the difference that instead of being sent offsite to communal landfills or EWDA's, BPs can be sold.

The BA is the main driver for encouraging progressive rehabilitation (i.e. rehabilitation while the quarry is still active) of unused areas in the quarry. Water bodies that do not involve the intentional treatment of process wastewater can be considered as biodiverse if it is populated with aquatic species and/or vegetation has been established around its borders. Creative solutions to the planting of dense shrubs or trees could serve the double purpose of serving as wind-breaks and introducing biodiversity. The use of the land for growing crops, feeding farm animals or aquaculture can also be considered as biodiverse so long as the farming process would meet any requirements for organic farming practices. This does not strictly mean that the land or water area must be certified as organic for it to be considered as part of the BA, but simply that a description of the farming activity and a declaration of compliance with a number of requirements about organic practices on the quarry land be provided. Competent Bodies are also recommended to consider the recognition of biodiversity in significant vertical areas, if they are covered by naturally established climbing vegetation, deliberately planted green walls and/or natural or constructed nesting sites. Such areas would not show up so well in a satellite view and so would need to be highlighted in photographs – together with an explanation of where they occur in the satellite view.

The REA offers a significant potential use for quarries of different topographies. In flatter sites, the establishment of photovoltaic farms is of obvious potential and creates an indirect incentive to reduce dust emissions (because dust would reduce the efficiency of the panels). In more vertical sites, wind flows in

certain areas offer potential for wind turbines and, due to the temperature differentials that can exist on the site, the potential for downdraft towers, updraft towers or solar chimneys is of interest, especially for the latter on south facing quarries. The area dedicated to renewable energy generation should be clearly delineated and, although unlikely, it could potentially overlap with the QF, EDWA or BPDA (e.g. PV panels covering these areas). In exceptional cases, the REA could overlap with the BA, for example in cases where reed beds are counted as BA but, if the reeds are harvested periodically for use as biomass fuel, it is also counted as REA. The criteria here are designed precisely to encourage the consideration of such synergies in land use planning by the quarry managers

Required documentation for Assessment and verification:

-  A satellite view of the quarry, with areas for TAA, QF, EWDA, BPDA, BA and REA clearly delineated and with written justifications for why each area is defined as it is.
-  Estimates of the areas delineated for the different areas (using tools that are freely available in the public domain, for example “calcmaps” or similar).
-  Fill out the Parts C & D excel file worksheet for criterion 2.6.

Criterion 2.7 – Energy consumption at the transformation plant

Interpretation of criterion:

The same interpretation applies for criterion 2.1, with the only difference being that the scope for criterion 2.1 applies to energy consumed at the quarry, while the scope for criterion 2.7 applies to energy consumed at the transformation plant.

Required documentation for Assessment and verification:

-  (Upon request) a copy of the fuel and electricity inventory for the relevant period where data was submitted, which also explains the scope of processes and operations covered by the inventory.
-  Fill out the Parts C & D excel file worksheet for criterion 2.7, specifying the quantity of material processed, the saleable material obtained and the total fuel and electricity consumption during the same period.
-  (Upon request) copies of meter readings, bills and invoices for electricity and fuel to justify the numbers entered.
-  A written breakdown of the different fuel and electricity sources used (if relevant), and how the carbon factors were calculated and how the % renewables was estimated.
-  A copy of the electricity supply contract or other written evidence that would justify any claims for onsite or near-site renewables.
-  (If points are claimed) A copy of the carbon footprint certificate or EPD, stating that the method is in line with ISO 14067 or PEF.

Criterion 2.8 – Water and wastewater management at the transformation plant

Interpretation of criterion:

A description of how water is used in the transformation shall be provided to the Competent Body. This description shall cover, as a minimum, the following aspects:

- what processes actually consume water at the transformation plant
- how water is supplied to the transformation plant
- what happens to the process wastewater (how is it treated and recirculated)
- what happens to the wastewater sludge (how is it stored and where does it end up)

A visual description of the site should also be included. For example, a satellite photograph, with indications pasted on top about the locations and routing of any stormwater, process water and wastewater flows would be a useful basis for a description. Photos and technical drawings of any process wastewater treatment equipment should also be provided.

If the visual description also demonstrates how stormwater landing on impermeable areas is harvested or diverted to prevent it running across working areas and prevents the dust from working areas being conveyed into natural watercourses, then 5 points shall be awarded.

Required documentation for Assessment and verification:

-  A description of how process water and wastewater is supplied, collected, used, treated and disposed of onsite.
-  Fill out the Parts C & D excel file worksheet for criterion 2.8.
-  (If claiming points) a description of how rainwater is collected from impermeable areas and stored, to prevent or reduce surface flow of rainwater across working areas and into natural watercourses.

Criterion 2.9 – Dust control at the transformation plant

Interpretation of criterion:

The interpretation of criterion 2.9 is essentially the same as that of criterion 2.4, with the main difference being that criterion 2.9 refers to dust control the transformation plant, while criterion 2.4 refers to dust control at the quarry.

Required documentation for Assessment and verification:

-  A description of the site processes that generate dust emissions and the measures in place to reduce the emissions of dust from the transformation plant.
-  (Upon request) copies of training material and the medical check program for employees.
-  Fill out the Parts C & D excel file worksheet for criterion 2.9.

Criterion 2.10 – Reuse of process waste from the transformation plant

Interpretation of criterion:

The mandatory element of this criterion is to implement a plan to systematically monitor, record and achieve a minimum reuse of process waste. The monitoring and recording system should therefore amount to an inventory of process waste. There are two main types of process waste occurring from natural stone transformation plants, which should be recorded separately:

- Process scrap (i.e. fragments of stone of varying sizes)
- Process sludge (i.e. fine powder resulting from clarification of process wastewater or dust collection).

The destination of the process scrap and process sludge must also be recorded. The main destinations would be use onsite (e.g. in road base, geotechnical fill or construction of walls etc.) use offsite (sale as aggregate for various purposes, sale as a raw material for cement production or for other purposes) or disposal (landfill onsite or offsite). The applicant should keep records of shipments of process scrap and sludge offsite in case the Competent Body requests to see them.

Criterion 2.10 suffers from a similar issue to criterion 2.2, which refers to the potential mismatches in process waste production and reuse (e.g. reuse of historically stockpiled waste would lead to overestimated waste reuse and ongoing stockpiling of process waste would lead to low reuse rates). The solution to these issues is to extend the inventory period sufficiently so that a representative set of data is obtained. For example, if process waste reuse applications are highly intermittent (e.g. every 15 months), the inventory should extend for those 15 months. Alternatively, applicants should make efforts to have a more regular flow of process waste for reuse applications.

It is much easier to find reuse applications for the process scrap than the process sludge. For this reason, the data should be kept separate and a minimum requirement is placed on the reuse of process scrap (80%). Any reuse of process scrap above 80% is rewarded with points and any reuse of process sludge at all is rewarded with points.

The inventory should be kept in consistent units of mass. However, due to inaccuracies that can result in estimates of the volumes of waste (where it would be necessary to also assume a bulk packing density), it would be necessary to require a weighbridge or other means of recording the quantities of waste produced.

With process sludge, data should ideally be reported in terms of dry solids (i.e. dry solids produced, dry solids disposed of and dry solids reused). This would require both the weighing of the sludge and an assumption about the water content. Wet sludge masses can be used (i.e. wet sludge produced, wet sludge disposed of and wet sludge reused), but potential inaccuracies in the mass balance of wet process sludge are much larger due to the variations in moisture content (e.g. sun exposure, humidity and rainfall).

Required documentation for Assessment and verification:

-  An inventory of process scrap and process waste generation for a period of at least 12 months. This should also include the quantity of material processed during the same period and descriptions and locations of any destinations for reuse or disposal.
-  Fill out the Parts C & D excel file worksheet for criterion 2.10.



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(Upon request) Shipment notes of any scrap or sludge leaving site.

Criterion 2.11 – Regionally integrated production at the transformation plant (optional)

Interpretation of criterion:

This criterion is optional, but encourages the use of natural stone from quarries in the same region (within 260km travel distance).

For clarity, it should be understood that travel distance means the route travelled and not simply a straight line drawn on a map between the quarry gate and the transformation plant gate. The transport route should follow any applicable road or rail lines. If shipping routes apply, these may be less clear, but should be estimated based on actual routes anyway.

It is normal for transformation plants to receive natural stone blocks and slabs from a number of different quarries. This is so that a wider range of products can be offered to customers. Since each quarry will have a different transport distance to the transformation plant, this will create a distinction in the points that may apply to different products that can fall under the same EU Ecolabel license.

Transformed natural stone products coming from the same transformation plant, but using intermediate blocks/slabs from different quarries will require different entries (rows) in the criterion 2.11 excel input if they are to be covered by the EU Ecolabel license application. This will translate into separate entries (rows) in the “Summary” worksheet, not only due to the potential differences in points under criterion 2.11, but for all the other quarry specific criteria (2.1 to 2.6).

If blocks or slabs are not purchased directly from the quarry, but come via some intermediary, the travel distance from the quarry to the intermediary and then from the intermediary to the transformation plant, should be counted. Only if it is clear that the intermediary does not physically handle the natural stone blocks and slabs, could this extra transport be ignored.

Applicants should keep copies of delivery invoices that clearly state the source quarry or quarries, in case this information is requested by the Competent Body.

Required documentation for Assessment and verification:

-  A map indicating the locations of the transformation plant and the quarry or quarries where products covered by the EU Ecolabel application are sourced.
-  Details of the transport route between the source quarries, including any changes in transport mode and following the actual routes for road, rail or ship.
-  Fill out the Parts C & D excel file worksheet for criterion 2.11.
-  (Upon request) Delivery invoices of any natural stone blocks and slabs from the quarries that are claimed to be within a 260km transport distance.

Agglomerated stone product criteria

Criterion 3.1 – Energy consumption

i Interpretation of criterion:

Specific energy consumption (10 points in total)

Applicants should keep records of process electricity consumption, ideally with dedicated meters that can separate consumption due to the process from the other uses (e.g. offices etc.). Simultaneously, records should be kept of the quantities of saleable products produced. These records should be made available to the Competent Body upon request.

The agglomerated stone production process is based on batch processes, normally using the BretonStone technology, that are powered exclusively by electricity. As each batch produces a very well defined volume of product (determined by the mould dimensions) and this volume can be converted to mass by multiplying by the specific density of the material, the production quantity should be defined in terms of volume and mass.

Depending on where electricity meters are located, the specific energy consumption of each batch run could potentially be recorded and the specific energy consumption (in kWh/kg) could be determined. This can be converted to MJ/kg simply by multiplying by 3.6. If electricity consumption is only measured at the factory level, applicants should be aware that non-invasive meters can be placed around cables powering equipment that would allow very specific consumption rates to be recorded.

It is up to the applicant to decide what level of detail to provide in the data. However, data that is averaged over a longer period can be considered as more representative. If there are significantly different specific energy consumptions (e.g. >15%) between products covered by the EU Ecolabel license, these should be reported separately. Up to 5 separate entries are possible in the Parts C & D excel spreadsheet and more entries can be manually added.

Electricity consumption for grinding of the raw material should also be included, even if it is necessary to obtain this information from suppliers. Although this consumption is NOT counted towards the total reported under criterion 3.1, its potential significance to overall energy consumption could be important.

Renewable energy (20 points in total)

For clarity, the first 10 points that are available refer to the share of renewable electricity. The next 10 points refer to how renewable electricity is sourced, regardless of how much of the total electricity is due to renewables. In cases where renewable electricity comes from more than one type of contracting (e.g. onsite generated via PV panels and a share of renewables in a green tariff from the utility supplier) the source that accounts for the largest share of renewable electricity shall be chosen.

How the interface looks in the Parts C & D excel worksheet

Since there are a number of cells that require entries for indicator 3.1 and that these impact on how many points are awarded, it is worth presenting how the cells appear in the Parts C & D excel worksheet.

It should be noted that the entry below can be as a single set of numbers for all products covered by the application or separate entries can be made for products with different specific electricity consumptions. The excel provides for 3 separate entries for criterion 3.1 and more could be copied and pasted in if needed.

| EU Ecolabel hard covering products | | | | | | | |
|---|--|------------------------------------|--|--------------|--|----------------|--|
| Criterion 3.1. Energy consumption | | | | | | | |
| Reference name for data entry | | | | | | | |
| Key data from energy inventory | | Data input | | Units | | Points | |
| Time period of data collection: | | | | | | | |
| Stone powder used: | | | | | | | |
| Curing process: | | | | | | | |
| Approximate density of agglomerated stone: | | 2400 | | kg/m3 | | | |
| Quantity produced during data collection period: | | 416.67 | | m3 | | | |
| Quantity produced during data collection period: | | 1000 | | tonnes | | | |
| Process electricity consumption during period: | | 214576 | | kWh | | | |
| Additional electricity consumption due to grinding of stone | | 0.03 | | kWh/kg | | | |
| Specific energy consumption (kWh/kg) | | 0.21 | | kWh/kg | | | |
| Specific energy consumption (MJ/kg) | | 0.77 | | MJ/kg | | | |
| LOOKUP value (MJ/kg) | | 0.77 | | MJ/kg | | 8.25 out of 10 | |
| Percentage of electricity that is renewable | | 67 | | % | | 6.70 out of 10 | |
| Type of renewable electricity used (if any) | | Green tariff from utility supplier | | | | 4.00 out of 10 | |

The time period for the data collection should be supported by records of electricity consumption and production of saleable products, in case the Competent Body requests these records. The next green cell in the column (C6) is to describe the main types of product or products covered by the data (the main two options will be granite or quartz, but possibly other varieties could apply). Then it is necessary to define the curing process (cell C7) and the specific density of the stone (cell C8). The density can be used to automatically convert volume (m3) to mass (tonnes) in the 2 cells below (C9 and C10). Depending on what unit the applicant first measures, it would make more sense to have C9 as an automatic output or cell C10. Alternatively, the applicant can manually enter both values.

The applicant then enters the total process electricity consumption (in kWh) and adds the additional electricity consumption due to stone grinding. The former value is used to calculate the specific electricity consumption. In the example above, the numbers come out at 0.21 kWh/kg. Multiplying this by 3.6 MJ/kg, the value comes out at 0.77 MJ/kg.

If the value should be >1.10 MJ/kg, the output would be highlighted in red and bold as it indicates that it fails some mandatory element of the criterion. If the value was somewhere between 0.70 and 1.10, this would result in the entry remaining black and some points being awarded in the first of the three points cells shown above. If the specific electricity consumption is less than 0.70 MJ/kg, the entry becomes "<0.70" and full points (10) are allocated. Specific energy consumption values between 0.70 and 1.10 MJ/kg will generate a total points output of between 0 and 10, rising proportionally as the value decreases towards 0.70.

The final two Column C cells in green require the applicant to define the percentage of electricity that is renewable and the main contracting mechanism for renewable electricity. The inputs here determine the points in cells G16 and G17. The applicant must be ready to share supporting information to justify any renewables claims and contracting mechanisms.

Required documentation for Assessment and verification:

-  Fill out the Parts C & D excel file worksheet for criterion 3.1.
-  Information about the electricity consumption for stone grinding (from supplier if necessary)
-  (Upon request) Records of electricity consumption and production of saleable products.



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A copy of the electricity supply contract and other written evidence that would justify any claims for onsite or near-site renewables.

Criterion 3.2 — Dust control and air quality

Interpretation of criterion:

A description of the main sources of styrene and dust emissions needs to be provided, together with details about operational site measures in place to reduce exposures. This description must include details of the closed dosing and mixing systems for resins and the first five points listed in criterion 3.2.

When the description makes reference to training about good practice for dust control, a copy of this material should be provided to the Competent Body upon request (the 5th point on the list).

Finally, details of the medical check-up program for employees should also be explained.

Required documentation for Assessment and verification:

-  A description of the site processes that generate styrene emissions and dust emissions and the measures in place to reduce the emissions of dust from the factory.
-  Fill out the Parts C & D excel file worksheet for criterion 3.2.

Criterion 3.3 —Recycled / secondary material content

📌 Interpretation of criterion:

Before considering the potential environmental benefits of recycled or secondary materials, it is necessary to make sure that they are not sourced from much further away than the virgin raw materials used. As a very general rule of thumb, if the transport distance is more than 2.5 times that of the virgin raw material, the environmental benefits of the recycled or secondary material can be largely cancelled out by the extra impacts due to longer transport.

Consequently, the first information that the applicant needs to provide is a list of all the raw materials and recycled or secondary materials used, and how far these sources are from the factory. Information about the locations of raw materials used should already be available due to the requirements of criterion 1.1. For clarity, the focus of this information should be on the inorganic raw materials used and not on the resins or other chemicals used in the process.

In cases where materials are supplied by an intermediary, any transport from the source to the intermediary shall be counted in addition to transport from the intermediary to the agglomerated stone producer. Upon request, contact details of suppliers should be provided to the Competent Body.

In terms of counting recycled materials, any reuse of process waste from the factory shall not be credited as recycled material if it is going back into the same production process that generated it.

How the interface looks in the Parts C & D excel worksheet

Since there are a number of cells that require entries for indicator 3.3, it is worth presenting how the cells appear in the Parts C & D excel worksheet.

| A | B | C | D | E | F | G |
|----|--|---------------------------|--------------------------|-------------------------|---|---|
| 33 | Criterion 3.3. Recycled / secondary material content | | | | | |
| 34 | Have the approximate transport distances of all raw materials, secondary materials and recycled materials used in the process been provided? | | | | | |
| 35 | Material source(s) | Transport distance | Units | | | Points |
| 36 | | | km | | | |
| 37 | | | km | | | |
| 38 | | | km | | | |
| 39 | | | km | | | |
| 40 | | | km | | | |
| 41 | | | km | | | |
| 42 | Reference name for data entry | Recycled content | | | | |
| 43 | | 13 | % | | | 13.00 |
| 44 | | | % | | | |
| 45 | | | % | | | |
| 46 | | | % | | | |
| 47 | | | % | | | |
| 48 | | | % | | | |
| 49 | Recycled/secondary material inventory | Incoming (tonnes) | Outgoing (tonnes) | Balance (tonnes) | | |
| 50 | e.g. January 20XX | | | 0 | | Recycled/secondary material inventory result Pass |
| 51 | e.g. February 20XX | | | 0 | | |
| 52 | e.g. March 20XX | | | 0 | | |
| 53 | e.g. April 20XX | | | 0 | | |
| 54 | e.g. May 20XX | | | 0 | | |
| 55 | e.g. June 20XX | | | 0 | | |
| 56 | e.g. July 20XX | | | 0 | | |
| 57 | e.g. August 20XX | | | 0 | | |
| 58 | e.g. September 20XX | | | 0 | | |
| 59 | e.g. October 20XX | | | 0 | | |
| 60 | e.g. November 20XX | | | 0 | | |
| 61 | e.g. December 20XX | | | 0 | | |



The first input cell (D34) is a confirmation that the sources and approximate transport distances for the main raw materials, secondary materials and recycled materials has been included. Rows 36 to 41 refer to inputs for the materials. If more than 6 materials are relevant, extra rows should be inserted.

In rows 43 to 48, the specific recycled/secondary material contents for different products covered by the EU Ecolabel application should be provided. Again, if more than 6 different product entries apply, extra rows should be inserted. In these rows, the % recycled content to the nearest 0.5% should be selected from the drop-down lists.

The final group of cells refer to an inventory of recycled/secondary material content. In these cases, the factory is treated like a black box with inputs and outputs of recycled and/or secondary materials. Inputs are related to deliveries and outputs are related to products or waste leaving the factory. It is up to the applicant to correctly allocate the flows of recycled / secondary material content to the different products and wastes leaving the factory. Inputs and outputs have to balance over any defined period of time and the balance (the quantity of recycled/secondary materials in the factory) must never fall below zero for any month.

Practically speaking, the only way the applicant can keep track of recycled/secondary material flows is to develop a system of credits/debits that is recorded on any delivered material invoices (credits), product shipment invoices (debits) and waste shipment notes (debits). Because the agglomerated stone production process is of the batch-type, it should be relatively straight-forward to correctly allocate flows of recycled/secondary materials into real products.

Required documentation for Assessment and verification:

-  Fill out the Parts C & D excel file worksheet for criterion 3.3.
-  (Upon request) contact details of secondary or recycled material suppliers.
-  (Upon request) a copy of the records kept for tracking flows of recycled and secondary materials.

Criterion 3.4 — Resin binder content

Interpretation of criterion:

The resin binder content is a key technical parameter for optimising the mixing and curing process. Consequently, this content should be very well known. It may be that the resin content is very similar for all products covered by the license, or that it may vary significantly between different products. In the latter case, multiple entries can be made.

The binder content ultimately comes down to a self-declaration by the applicant that could potentially be assessed in real products by selective sampling and testing.

Required documentation for Assessment and verification:

 Fill out the Parts C & D excel file worksheet for criterion 3.4.

Criterion 3.5 — Reuse of process waste

i Interpretation of criterion:

The mandatory element of this criterion is to implement a plan to systematically monitor, record and to achieve a process waste reuse rate of at least 70%.

Due to the problems of potentially misleading reuse rates caused by irregular or sporadic reuse applications of process waste (e.g. process waste building up over a long period of time and then being reused on a large scale very quickly) it is necessary to monitor data over a period of at least 12 months. If longer periods are needed to demonstrate the full picture, the data could be collected over a longer time.

The monitoring and recording system should amount to an inventory of process waste and production of saleable products. Although the criterion actually states production in units of m², due the different thicknesses of slabs and cuts that are possible, it may be more appropriate to simply report production in terms of mass and volume, rather than surface area. The excel worksheet for criterion 3.5 awards points based on the data in mass.

The destination of the process waste must also be recorded. The main destinations would be use onsite (e.g. in road base, geotechnical fill or construction of walls etc.) use offsite (sale as aggregate for various purposes, sale as a raw material for cement production or for other purposes) or disposal (landfill onsite or offsite). The applicant should keep records of shipments of process waste offsite in case the Competent Body requests to see them.

The inventory should be kept in consistent units of mass, due to inaccuracies that can result in estimates of the volumes of waste (where it is necessary to also assume a bulk packing density). This would require a weighbridge or a similar means of recording the quantities of waste produced.

How the interface looks in the Parts C & D excel worksheet

Since there are a number of cells that require entries for criterion 3.5, it is worth presenting how the cells appear in the Parts C & D excel worksheet.

| Key data from process waste inventory | | Data input | Units | Check | Points |
|--|--|----------------|-------------------|------------|----------------------------|
| Reference name for data entry | | Product X | | | |
| Time period of data collection: | | Jan - Dec 2020 | | | |
| Approximate density of waste: | | 2450 | kg/m ³ | | |
| Incoming material processed during this time period: | | 395 | m ³ | | |
| Of which has been sold or is ready for sale: | | 224 | m ³ | | |
| Of which has become process waste | | 163 | m ³ | | |
| Quantity of process waste reused during same period: | | 5 | m ³ | | |
| Incoming material processed during this time period: | | 967 | tonnes | | |
| Of which has been sold or is ready for sale: | | 550 | tonnes | | |
| Of which has become process waste | | 400 | tonnes | | |
| Quantity of process waste disposed to landfill: | | 13 | | | |
| Quantity of process waste reused during same period: | | 387 | tonnes | -17 tonnes | 98.2 % of ingoing material |
| Fraction of process waste reused | | 97 | % | | 9.00 |

The first two green cells (C76 and C77) require some details about the product reference and the time period for data collection. The latter should be at least 12 months prior to the awarding of the EU Ecolabel. It is possible that in factories which produce both quartz and marble products, that the reuse options for the



quartz and marble waste are significantly different and that the applicant wishes to report these differences in separate entries. In such cases, the same cells appear again in columns further to the right (beyond Column H).

The green cells near the bottom (C83 to C86) are for the weights of materials going into the process, the saleable product mass coming out of the process, the process waste and the process waste reuse. Each of these masses can be converted into a volume as well by using the optionally defined stone density in cell C78.

As a check that the quantities are suitable, there is a check cell that indicates if there is any discrepancy in the balance of:

materials in = saleable products out + waste out.

If the waste is underestimated, the value for waste should be increased, since it could be due to fugitive emissions of dust, incorrect assumptions about moisture contents and/or waste not being properly recorded.

Quantities of waste transported to storage areas onsite, to disposal sites or to reuse applications should be recorded. These quantities should be recorded at the plant, ideally via a weighbridge, and any waste leaving the site (for disposal or for reuse) should be logged. Shipment notes for waste leaving site should be kept by the applicant in case the Competent Body requests this information.

If the process waste reuse rate is <70%, this would flag up in red, bold text, indicating that a fundamental requirement for the criterion is not being met.

Required documentation for Assessment and verification:

-  Fill out the Parts C & D excel file worksheet for criterion 3.5.
-  (Upon request) a copy of the waste inventory, together with any invoices and waste shipment notes.

Ceramic and fired clay product criteria

Criterion 4.1 – Fuel consumption for drying and firing

i Interpretation of criterion:

Fuel consumption for drying and firing (20 points in total)

The mandatory elements of this criterion relate to the non-use of certain fuels (coal, petroleum coke, light fuel oil and heavy fuel oil) and place an upper limit of specific fuel consumption (in units of MJ/kg) for whatever other fuels are actually used.

Separate limits are defined for:

- spray dryers
- ware dryers and kiln

The **separate limit for spray dryers** is because in many cases the spray drying operation is completely independent of the ware drying and the ceramic kiln. Even in sites where spray drying also takes place, the scale of spray drying will tend to be large enough to produce excess spray dried powder for sale to other sites. Consequently, in many cases a specific energy consumption for spray drying will need to come from a third party. The underlying information needed to support any declarations of specific fuel consumption during a defined period will be:

- quantity of spray dried powder produced (in kg, including the assumed moisture content of 5-7%)
- quantity of fuel or fuels consumed (in kg, m³ or other relevant unit)
- the specific calorific value of the fuel or fuels consumed (in MJ/kg, MJ/m³ or MJ/other relevant unit)

Unlike spray drying, the applicant will always be generating this **data for ware dryers and kilns** at their sites. The energy consumption for the ware dryer and kiln is grouped together because these units run in sequence at the same site and waste heat from the kiln will be partially reused in the ware dryer. To account for the different configurations possible and to recognise the environmental benefits of those setups that make the optimum reuse of waste heat from the kiln. If separate, dedicated burners are also used for the ware dryers, even though they will be much smaller than the burners used in the kiln, any fuel consumption in the ware dryer burners should be counted as well.

Fuel consumption data can be reported at different scales of production, depending on the level of detail at which data is available. If fuel consumption rates at the level of individual burners can be collected, it is possible to report data at a **very high level of granularity for individual products**. This would be especially relevant in cases where the specific fuel consumption varies significantly between different products produced at the site – for example, due to different raw material compositions, different firing temperature profiles and different product characteristics needed.

If the products covered by the license have very similar specific fuel consumption rates, it is possible to submit data at a **lower level of granularity**, perhaps including several kilns in aggregated data. Regardless of the level of data reported, the same basic information is required as stated above for spray dried powder:

- quantity of tile or paver produced (in kg, optionally m² can also be defined)
- quantity of fuel or fuels consumed (in kg, m³ or other relevant unit)



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- the specific calorific value of the fuel or fuels consumed (in MJ/kg, MJ/m³ or MJ/other relevant unit)

For ceramic tiles, there is an important difference depending on whether the data collection period refers to **individual products** (i.e. data collected over a shorter, representative period of stable operation) or a **family of products** (data collected over a much longer period of continuous production).

Higher limits of fuel consumption apply for the longer periods of continuous production since these will also include periods of low production and standby, when production rates are reduced or stopped but when the kiln is not fully shut-down.

How the interface looks in the Parts C & D excel worksheet

Since there are a number of cells that require entries for criterion 4.1, it is worth presenting how the cells appear in the Parts C & D excel worksheet.

| EU Ecolabel hard covering products - ceramics | | | | | | |
|---|--|-----------------------------------|----------------|-------|------------------------|-------|
| Criterion 4.1. Fuel consumption for drying and firing | | | | | | |
| Reference name for data entry | | | | | | |
| Key data from energy inventory | | Data input | Units | Limit | Points | |
| Has coal, petroleum coke, light fuel oil or heavy fuel oil been used in the dryers or kilns that produce the products covered by the application? | | No | | | | |
| Type of product covered | | Ceramic tile - individual product | | | | |
| Is spray-dried powder used? | | Yes | | | | |
| If yes, is spray-dried powder produced by applicant? | | No, by third party | | 1.8 | MJ/kg upper limit | |
| Specific spray-dried powder energy consumption (SDP): | | 1.376 | MJ/kg | 1.3 | MJ/kg excellence limit | |
| SDP lookup value and points: | | 1.38 | MJ/kg | | | 16.80 |
| Time period of data collection for kiln and ware dryer: | | | | | | |
| Quantity produced during data collection period: | | | m ² | | | |
| Quantity produced during data collection period: | | 1000 | kg product | | | |
| Process fuel consumption during data collection period: | | 3491 | MJ | | | |
| Specific kiln & ware dryer fuel consumption (KWD): | | 3.49 | MJ/kg | 4.1 | MJ/kg upper limit | |
| KWD lookup value and points: | | 3.49 | MJ/kg | 3.2 | MJ/kg excellence limit | |
| Overall score for criterion 4.1: | | | | | | 13.56 |
| | | | | | | 14.69 |

The inputs for the excel that are required start with a reference name for the data entry (cell C3) and a confirmation that the prohibited fuels have not been used (cell C5). The next input (cell C6) is related to how many products the data covers and whether it is continuous data (family of products) or more specific data (individual products). The input in cell C6 will affect the limits that automatically appear in cells F14 and F15, which in turn affect the outputs of the points awarded.

The next inputs in cells C7 and C8 determine if the score will take into account data for spray dried powder production or not. A declaration on the value (in MJ/kg) is required, and if the applicant is also the spray dried powder producer, or if the values seem unusually low, the competent body may request the underlying data behind the calculation for the value in cell C9.

Regarding the ware dryer and kiln, the applicant should define the period over which the data has been collected (this should be 12 months for continuous production data relating to families of products but can be much less for individual products). The total quantity of relevant products produced the same period (only those products associated with the fuel consumption that is being reported) needs to be inserted in kg in cell C13 and can optionally be defined in m² in cell C12. The applicant needs to define the fuel energy consumed during this time period for the relevant products (fuel quantity consumed multiplied by calorific value of the fuel).



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The points are automatically calculated in cell G10 for the spray dried powder and in cell G16 for the ware dryer and kiln. The overall score in G17 should be the same as G16 in cases where spray dried powder is not used and it will be a composite of both G10 and G16 in cases where it is used.

Required documentation for Assessment and verification:

-  If spray dried powder is from a third party, a declaration about the specific fuel consumption.
-  Fill out the Parts C & D excel file worksheet for criterion 4.1.
-  (Upon request) details of the calculation for fuel consumption (MJ) and specific fuel consumption (MJ/kg).

Criterion 4.2 – CO₂ emissions

i Interpretation of criterion:

Mandatory requirements and scope

The mandatory elements of this criterion relate to upper limits on the specific CO₂ emissions associated with the production process. The scope of CO₂ emissions matches the same fuel consumption as defined in criterion 4.1 (i.e. for fuels combusted in any spray dryers and for ware dryers and kilns). It does not include any CO₂ emissions associated with the consumption of electricity but it does include process emissions from the decarbonation of carbonates in raw materials.

Where the installation is situated in an EU Member State and has a production capacity >75tonnes/d), it is required to report under the Emissions Trading Scheme. The emissions counted under criterion 4.2 match up well with the requirements for ETS reporting. The major difference is that ETS reporting applies to the level of the whole factory, whereas the EU Ecolabel data can apply to individual products or a whole family of products. A factory can potentially produce more than one “family of products” and the production might shift in time from one type of products to another and to more customised products or more standardised products, depending on market demands. So in cases where production is variable, the applicant should clearly explain what parts of their production are associated with the EU Ecolabel and which are not.

Process emissions

The carbonate content is the main determining factor about possible process CO₂ emissions. The firing temperatures involved in ceramic kilns are sufficiently high (>800 °C) to result in the thermal decomposition of mineral carbonates from CaCO₃ or MgCO₃ to CaO or MgO + CO₂. However, the extent of decarbonation will be unlikely to approximate to 100%. On the other hand, any organic carbon present in the raw material, either deliberately added or as impurities, will also result in process CO₂ emissions that is much more likely to approximate to 100%.

To avoid unnecessary confusion, the rules for estimating process emissions for the EU Ecolabel should simply follow those of the Emissions Trading Scheme and applicants should make reference to the relevant calculation methods for decarbonation when making the EU Ecolabel application. Criterion 4.2 makes specific reference to Regulation (EU) 2019/331 and Regulation (EU) 601/2012. It should be noted the latter has now been repealed by Regulation (EU) 2018/2066.

How the interface looks in the Parts C & D excel worksheet

Since there are a number of cells that require entries for criterion 4.2, it is worth presenting how the cells appear in the Parts C & D excel worksheet.

| | A | B | C | D | E | F | G | H | I |
|----|---|---|-----------------------------------|----------------------|---|--------------|---------------------------------------|-------|---|
| 1 | | EU Ecolabel hard covering products - ceramics | | | | | | | |
| 20 | | Criterion 4.2. CO2 emissions | | | | | | | |
| 21 | | Reference name for data entry | | | | | | | |
| 22 | | Key data from energy inventory | Data input | Units | | Limit | Points | | |
| 23 | | Type of product covered | Ceramic tile - individual product | | | | | | |
| 24 | | Is spray-dried powder used? | Yes | | | | | | |
| 25 | | If yes, is spray-dried powder produced by applicant? | Yes | | | 84 | kgCO ₂ /t upper limit | | |
| 26 | | Specific spray-dried powder energy consumption (SDP): | 59 | kgCO ₂ /t | | 54 | kgCO ₂ /t excellence limit | | |
| 27 | | SDP lookup value and points: | 59 | kgCO ₂ /t | | | | 20.83 | |
| 28 | | Time period of data collection for kiln and ware dryer: | | | | | | | |
| 29 | | Quantity produced during data collection period: | | m ² | | | | | |
| 30 | | Quantity produced during data collection period: | 1000 | kg product | | | | | |
| 31 | | Process CO ₂ emissions | 45 | kgCO ₂ /t | | | | | |
| 32 | | Fuel CO ₂ emission during data collection period: | 213 | kgCO ₂ | | 280 | kgCO ₂ /t upper limit | | |
| 33 | | Specific kiln & ware dryer fuel CO ₂ emission (KWD): | 258 | kgCO ₂ /t | | 230 | kgCO ₂ /t excellence limit | | |
| 34 | | KWD fuel lookup value and points: | 258 | kgCO ₂ /t | | | | 11.00 | |
| 35 | | Overall score for criterion 4.2: | | | | | | 14.44 | |

A total of 9 inputs are required (green cells). The first, in cell C21, is simply a reference name for the data entry. The next input in cell C23 is about the granularity of the data being reported – this is indirectly linked to the data collection period defined later in cell C28, where data for individual products can be taken over shorter, representative periods and data for families of products should be taken over a period of 12 months. The input in cell C23 also has a direct effect on the applicable limits in cells F32 and F33, in a similar manner as for criterion 4.1 (i.e. the upper and lower limits vary depending on the product type selected and the points awarded depend on where the results lie relative to this range).

A specific input is required for CO₂ emissions associated with spray dried powder – whether this needs to come from a supplier or whether the spray drying operation is carried out in-house. For the avoidance of doubt, when talking about the kgCO₂/t in cell C26, the “t” refers to tonne of spray dried powder. Process emissions during spray drying are expected to be insignificant regarding mineral decarbonation, but could potentially affect the combustion of organic matter.

Moving on to the data for the ware dryer and kiln, the quantity of production needs to be defined in kg in cell C30 (and optionally in m² in cell C29). The estimated process CO₂ emissions (based on carbonate and organic content in raw material) should be entered in cell C31 in units of kgCO₂/t and the fuel CO₂ emission should be entered in cell C32 (in kg CO₂). If the process emissions are zero, then “0” should be entered into cell C31. If the data collection period and scope for reporting on CO₂ in criterion 4.2 matches that used in criterion 4.1, the C26 and C32 values can be directly calculated from the equivalent data for criterion 4.1, simply by multiplying by a carbon emission factor for the fuel used.

The inputs in C31 and C32 automatically generate the outputs in cells C33 and C34, with the latter determining the points applicable in cell G34. As with criterion 4.1, if sprayed dried powder is used, the overall score in cell G35 is a composite of the points in cells G27 and G34, if not, it is simply the same as cell G34.

Required documentation for Assessment and verification:

-  If spray dried powder is from a third party, a declaration about the specific CO₂ emissions.
-  Fill out the Parts C & D excel file worksheet for criterion 4.2.
-  (Upon request) details of the calculation for specific CO₂ emissions (process and fuel combustion).

Criterion 4.3 – Process water consumption

Interpretation of criterion:

This criterion will normally be applied at the level of the factory since it may be complicated to allocate different specific water consumptions to different products in cases where the ingoing materials may be dry-milled, wet-milled or spray dried and where process wastewaters from different production lines are combined and recirculated.

For this reason, in cases where the factory has already maximised the potential for wastewater reuse, there is no requirement on specific water consumption and in cases where specific water consumption needs to be defined, the applicant has flexibility in deciding at what level the calculation should be applied at.

The Parts C & D excel sheet has a relatively simple set of input fields that result in a “Pass” or “Fail” output for criterion 4.3 that is also linked to the “Summary” worksheet.

Required documentation for Assessment and verification:

-  Fill out the Parts C & D excel file worksheet for criterion 4.3.
-  (Upon request) details of the zero liquid discharge system or the specific freshwater consumption calculation. In the case of the latter, it should be declared at what level the estimation was made (e.g. at individual product level, at production line level or at factory level).

Criterion 4.4 – Emissions of dust, HF, NO_x and SO_x to air

i Interpretation of criterion:

Mandatory elements

A mandatory limit is set for specific dust emissions from spray dryers (90 mg/kg) and upper limits are set for specific emissions of dust, HF, NO_x and SO_x from the kiln.

Scope of data

As with criteria 4.1 and 4.2, if the spray dried powder is produced by a third party, a declaration from the supplier will be required. Depending on the complexity of the production set-up at the site where the EU Ecolabel products are produced, and the share of total products from that site that will form part of the EU Ecolabel application, the representativeness of the emission data may vary if it is simply allocated on a per mass of production basis for the whole output. The main factors that would influence the representativeness of centralised data are:

- the share of total production at the site that is covered by the EU Ecolabel application
- the variability of raw material compositions in different products (especially in fluorine and sulphur)
- the variability of different firing schedules for different products (time and temperature profiles)

As the share covered by the EU Ecolabel decreases and the variabilities increase, the representativeness of centralised data for the EU Ecolabel decreases. The applicant should explain these aspects to the competent body and it can be discussed if there is a need for more specific data collection or for different assumptions to apply to the allocation method than simply allocating by mass of production.

Frequency of data monitoring

Regarding emissions from the kilns, which will always be under the control of the applicant, any installation with a capacity >75 tonnes/d will be subject to reporting requirements of the Industrial Emissions Directive (IED) 2010/75/EU. Although harmonised emission reporting for ceramic production installations has not yet been finalised, this will come in the next few years, while the EU Ecolabel criteria for Hard Covering Products is still valid. As of 2021, different requirements on reporting on emissions can apply in different Member States.

The most obvious difference is the need to continually monitor SO_x emissions in some installations and not at all in others. For the EU Ecolabel, where continuous data is already collected, this should be used for the calculations. Where no data is collected, at least 3 sets of periodic monitoring data is required for each 12 month period. The periodic data must be collected during stable operation conditions of the plant and results be normalised to the same standard conditions as required for continuous monitoring (i.e. 18% O₂ content, 273K and 101,3 kPa).

Units for data reporting

Another important difference is that the IED sets limits in terms of exhaust gas concentration (i.e. mg/Nm³), whereas the EU Ecolabel sets limits based on production (i.e. mg/kg product). The key bridge between these two approaches is the specific airflow rate, which should be estimated in Nm³/kg of product.

How the interface looks in the Parts C & D excel worksheet

Since there are a number of cells that require entries for criterion 4.4, it is worth presenting how the cells appear in the Parts C & D excel worksheet.



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| A | B | C | D | E | F | G |
|----|--|--------|--------|--------------|--------------|---------------|
| 1 | EU Ecolabel hard covering products - ceramics | | | | | |
| 48 | Criterion 4.4. Emission of dust, HF, NOx and SOx to air | | | | | |
| 49 | Reference name for data entry | | | | | |
| 50 | Spray dryer dust emissions | | | | | |
| 51 | Is spray drying carried out onsite? | Yes | | Check | Limit | |
| 52 | Data collection period: | | | | 90 | mg/kg |
| 53 | Spray dried powder produced during period: | 100000 | kg | | | |
| 54 | Weighted average dust emission conc. during period: | 5 | mg/Nm3 | | | Result |
| 55 | Total airflow rate during period: | 400000 | Nm3 | 4.00 | Nm3/kg | Pass |
| 56 | Specific spray dryer dust emissions: | 20.00 | mg/kg | | | |
| 57 | Kiln dust emissions | | | | | |
| 58 | Reference name for data entry | | | | | |
| 59 | Data collection period: | | | | | |
| 60 | Relevant tile/paver production during period: | | m2 | | | |
| 61 | Relevant tile/paver production during period: | 1000 | kg | Check | Limit | Points |
| 62 | Weighted average dust emission conc. during period: | 6 | mg/Nm3 | | 50 | mg/kg |
| 63 | Total airflow rate during period: | 4000 | Nm3 | 4.00 | Nm3/kg | |
| 64 | Specific kiln dust emissions: | 24 | mg/kg | | | Points |
| 65 | Specific kiln dust emissions lookup value: | 24 | mg/kg | | | 6.5 |
| 66 | Kiln HF emissions | | | | | |
| 67 | Reference name for data entry | | | | | |
| 68 | Data collection period: | | | | | |
| 69 | Relevant tile/paver production during period: | | m2 | | | |
| 70 | Relevant tile/paver production during period: | 1000 | kg | Check | Limit | Points |
| 71 | Weighted average HF emission conc. during period: | 3.3 | mg/Nm3 | | 20 | mg/kg |
| 72 | Total airflow rate during period: | 4000 | Nm3 | 4.00 | Nm3/kg | |
| 73 | Specific kiln HF emissions: | 13 | mg/kg | | | Points |
| 74 | Specific kiln HF emissions lookup value: | 13 | mg/kg | | | 5.00 |
| 75 | Kiln NOx emissions | | | | | |
| 76 | Reference name for data entry | | | | | |
| 77 | Data collection period: | | | | | |
| 78 | Relevant tile/paver production during period: | | m2 | | | |
| 79 | Relevant tile/paver production during period: | 1000 | kg | Check | Limit | Points |
| 80 | Weighted average NOx emission conc. during period: | 45 | mg/Nm3 | | 250 | mg/kg |
| 81 | Total airflow rate during period: | 3400 | Nm3 | 3.40 | Nm3/kg | |
| 82 | Specific kiln NOx emissions: | 153 | mg/kg | | | Points |
| 83 | Specific kiln NOx emissions lookup value: | <170 | mg/kg | | | 10.00 |
| 84 | Kiln SOx emissions | | | | | |
| 85 | Reference name for data entry | | | | | |
| 86 | Data collection period: | | | | | |
| 87 | Relevant tile/paver production during period: | | m2 | | | |
| 88 | Relevant tile/paver production during period: | 1000 | kg | Check | Limit | Points |
| 89 | Weighted average SOx emission conc. during period: | 150 | mg/Nm3 | | 1300 | mg/kg |
| 90 | Total airflow rate during period: | 4000 | Nm3 | 4.00 | Nm3/kg | |
| 91 | Specific kiln SOx emissions: | 600 | mg/kg | | | Points |
| 92 | Specific kiln SOx emissions lookup value: | <750 | mg/kg | | | 10.00 |

The first entries refer to spray dryer data (rows 49 to 56). The spray dryer inputs (cells C51 to C55) should be provided by the supplier in cases where spray dried powder comes from a third party. It is up to the applicant to define any meaningful reference name for the entry in row 49. The main output in cell C56 is a simple calculation of the data in cells C53, C54 and C55. As a check that the data is normal, the specific airflow rate is automatically generated in cell E55 and the embedded comment in cell E55 mentions a typical range for specific airflow rates. Since the requirement on dust emissions from spray drying is not associated with any points, a simple “Pass/Fail” output is generated in cell G55 and carried over to the “Summary” worksheet.

A very similar approach applies for emissions from the kiln, with the additional definition of production in terms of m2 and the additional output of points (in proportion to where the results in cells C65, C74, C83 and



C92 lie in relation to the ranges defined in criterion 4.4). All outputs relating to points are carried over to the “Summary” worksheet.

Required documentation for Assessment and verification:

-  If spray dried powder is from a third party, a declaration about the specific dust emissions, with the basic underlying data required for the calculation.
-  A written explanation of how representative the emission data collected from the installation is of those emissions associated with the EU Ecolabel products covered by the application (this could inform further discussions with the competent body about optimum data collection and allocation approaches).
-  Fill out the Parts C & D excel file worksheet for criterion 4.4.

Criterion 4.5 – Wastewater management

Interpretation of criterion:

This criterion can only be applied at the level of the factory, since wastewater treatment is a common system for the whole installation.

Full compliance is accepted in cases where a zero liquid discharge system is in place (option 1). The other 2 options result in wastewater being treated and discharged to local watercourses (options 2 and 3). In these latter two cases, a declaration is needed about the concentrations of suspended solids, cadmium and lead in the treated effluent.

The possibility of accepting analysis based on different test methods should be considered whenever the operating permit for the wastewater treatment plant also permits this.

While data should be weekly (or more frequent), it is possibly that testing for cadmium and lead is less frequent and, only if this is acceptable according to the operating permit, less frequent testing should be allowed. In the absence of ANY defined testing frequency for cadmium and lead, a minimum testing frequency of once per year, on a composite sample that is representative of at least 6 different samples, taken throughout a period of 6 months (one per month ideally) should be considered as acceptable.

As an alternative to testing for cadmium and lead in the effluent of a third party operated wastewater plant, and to avoid the potentially perverse situation of non-compliance due to inputs of cadmium and lead into the third party operated plant from other sources, the applicant can test their own effluent leaving their site for suspended solids, lead and cadmium and, if they already meet the limits, no declaration from the wastewater treatment plant would be necessary.

Required documentation for Assessment and verification:

-  Fill out the Parts C & D excel file worksheet for criterion 4.5.
-  If relevant, a declaration from the wastewater treatment system owner or operator about the suspended solids, cadmium and lead concentrations in treated effluent, supported by test reports upon request.

Criterion 4.6 — Reuse of process waste

i Interpretation of criterion:

The mandatory element of this criterion is to implement a plan to systematically monitor, record and to achieve a process waste reuse rate of at least 90%.

Due to the problems of potentially misleading reuse rates caused by irregular or sporadic reuse applications of process waste (e.g. process waste building up over a long period of time and then being reused on a large scale very quickly) it is necessary to monitor data over a period of at least 12 months. If longer periods are needed to demonstrate the full picture, the data could be collected over a longer time.

The monitoring and recording system should amount to an inventory of process waste and production of saleable products. Although the criterion actually states production in units of m², due the different thicknesses of slabs and cuts that are possible, it may be more appropriate to simply report production in terms of mass and volume, rather than surface area. The excel worksheet for criterion 3.5 awards points based on the data in mass.

The destination of the process waste must also be recorded. The main destinations would be use onsite (e.g. fed back into the raw material) or offsite (e.g. use in road base or as geotechnical fill etc.) or disposal (landfill onsite or offsite). The applicant should keep records of shipments of process waste offsite in case the Competent Body requests to see them.

The inventory should be kept in consistent units of mass, due to inaccuracies that can result in estimates of the volumes of waste (where it is necessary to also assume a bulk packing density). This would require a weighbridge or a similar means of recording the quantities of waste produced.

How the interface looks in the Parts C & D excel worksheet

Since there are a number of cells that require entries for criterion 4.6, it is worth presenting how the cells appear in the Parts C & D excel worksheet.

| | A | B | C | D | E | F | G | H | I |
|-----|--|---|-------------------|-------------------|---|--------------|---------------|------|-----------------------|
| 1 | EU Ecolabel hard covering products - ceramics | | | | | | | | |
| 105 | Criterion 4.6. Reuse of process waste | | | | | | | | |
| 106 | Key data from process waste inventory | | Data input | Units | | Check | Points | | |
| 107 | Time period of data collection: | | | | | | | | |
| 108 | Approximate density of waste: | | 1800 | kg/m ³ | | | | | |
| 109 | Incoming material processed during this time period | | 537 | m ³ | | | | | |
| 110 | Of which has been sold or is ready for sale: | | 306 | m ³ | | | | | |
| 111 | Of which has become process waste | | 222 | m ³ | | | | | |
| 112 | Quantity of process waste reused during same period | | 215 | m ³ | | | | | |
| 113 | Fraction of process waste reused | | 97 | % | | | | | |
| 114 | Incoming material processed during this time period | | 967 | tonnes | | | | | |
| 115 | Of which has been sold or is ready for sale: | | 550 | tonnes | | | | | |
| 116 | Of which has become process waste | | 400 | tonnes | | | | | |
| 117 | Quantity of process waste disposed to landfill: | | 13 | tonnes | | | | -17 | tonnes |
| 118 | Quantity of process waste reused during same period | | 387 | tonnes | | | | 98.2 | % of ingoing material |
| 119 | Fraction of process waste reused | | 96.8 | % | | | | 6.80 | |
| 120 | | | | | | | | | |

The first two green cells (C107 and C108) require some details about the time period for data collection and the approximate density of waste. The former should be at least 12 months prior to the awarding of the EU Ecolabel.



The approximate density of waste is simply used to allow for conversion of waste data in tonnes to m³. However, if data is consistently reported in tonnes, thanks to the use of weighbridges, then reporting as m³ should be purely optional.

The green cells near the bottom (C114 to C117) are for the masses of materials going into the process, the saleable product mass coming out of the process, the process waste and the process waste disposed of. The difference between total process waste produced and total process waste disposed of is assumed to be the process reused. Although this is arguably not the ideal approach, applicants can opt to overwrite the automatic estimation reuse in cell C118, if they do in fact monitor and measure this directly.

As a check that the quantities are suitable, there is a check cell that indicates if there is any discrepancy in the balance of:

materials in = saleable products out + waste out.

If the waste is underestimated, the value for waste should be increased, since it could be due to fugitive emissions of dust, incorrect assumptions about moisture contents and/or waste not being properly recorded.

Quantities of waste transported to storage areas onsite, to disposal sites or to reuse applications should be recorded. These quantities should be recorded at the plant, ideally via a weighbridge, and any waste leaving the site (for disposal or for reuse) should be logged. Shipment notes for waste leaving site should be kept by the applicant in case the Competent Body requests this information.

If the process waste reuse rate is <90%, this would flag up in red, bold text, indicating that a fundamental requirement for the criterion is not being met.

Required documentation for Assessment and verification:

-  Fill out the Parts C & D excel file worksheet for criterion 4.6.
-  (Upon request) a copy of the waste inventory, together with any invoices and waste shipment notes.

Criterion 4.7 — Glazes and inks

Interpretation of criterion:

Compliance with criterion 4.7 depends first of all on the declaration of the applicant about which glazes and inks are used (if any) and then the suppliers of relevant glazes or inks need to confirm that they do not contain any lead or cadmium in concentrations exceeding 0.10% as the metal.

Now that the requirement on the non-presence of SVHCs (i.e. <0.10% according to REACH communication requirements) has been extended from the final product to ingoing chemicals, the added value of criterion 4.7 is very limited since most or all relevant lead or cadmium compounds would be directly restricted via criterion 1.2.

Required documentation for Assessment and verification:

-  If relevant, declaration(s) from the glaze or ink supplier(s).
-  Fill out the Parts C & D excel file worksheet for criterion 4.7.

Precast concrete products or compressed earth blocks based on hydraulic binders or alternative cements

Criterion 5.1 – Clinker factor

i Interpretation of criterion:

Applicability

This criterion does not apply to hydraulic lime binders. They do not “lose” points here, it is simply not counted as a possible contribution to the total points, and so the relevant threshold is lowered accordingly for hydraulic lime. It is also worth noting that while criterion 5.1 does apply to alternative cements, regardless of whether the clinker content is greater than or less than 30%, it would much more difficult to obtain the EU Ecolabel for alternative cements with higher clinker contents as they would effectively score zero points for criterion 5.1.

Information received

In cases where the applicant is actually the producer of the cement, the exact clinker factor would be communicated to the competent body. In cases where the applicant is a precast concrete producer and the cement producer does not want to communicate the exact clinker factor to their customer then, at least in the case of EN 197-1 Portland cements, the clinker factor can be estimated as per the assumptions indicated in criterion 5.1.

In the latter case, the precast producer would provide an example of the cement packaging or the delivery invoice where the EN 197-1 notation is stated.

Required documentation for Assessment and verification:

-  If the cement supplier does not want to declare the exact clinker factor: the EN 197-1 notation for the cement or cements used.
-  Fill out the Parts C & D excel file worksheet for criterion 5.1.

Criterion 5.2 – CO₂ emissions

Interpretation of criterion:

Mandatory requirements and scope

The mandatory elements of this criterion relate to upper limits on the specific CO₂ emissions associated with the EN 197-1 cement production, the hydraulic lime production or the embodied carbon in materials used in alternative cements

For EN 197-1 cements and hydraulic lime, the scope of CO₂ emissions calculation is the same that should be used for the Emissions Trading Scheme. This means that emissions from the combustion of fuels in the process and emissions from the combustion of organics and decarbonation of carbonates in raw materials is counted.

To avoid unnecessary confusion, the rules for estimating process emissions for the EU Ecolabel should simply follow those of the Emissions Trading Scheme and applicants should make reference to the relevant calculation methods for decarbonation when making the EU Ecolabel application. Criterion 5.2 makes specific reference to Regulation (EU) 2019/331 and Regulation (EU) 601/2012. It should be noted the latter has now been repealed by Regulation (EU) 2018/2066.

For the purposes of the EU Ecolabel, the carbon emissions associated with EN 197-1 should be counted per tonne of clinker produced (as with the ETS approach). This is clearly stated in the Parts C & D excel spreadsheet.

The producer of the binder simply has to insert a number for the specific CO₂ emissions (in kgCO₂ per tonne) but should also provide a further explanation in writing about the calculation method used and the scale of production and time period that the data refers to.

Embodied carbon for alternative cements

This separate approach for alternative cements was taken especially while having the very low cement clinker or cement clinker free cements in mind. However, it can also be applied to any other cement that does not fit with the EN 197-1 classification system. The main point is that all the embodied carbon from the cement ingredients are captured in the manufacturing of the alternative cement formulation (i.e. in life cycle stages A1 to A3).

Applicants are welcome to submit evidence of carbon footprints or LCAs for the alternative cement that include impacts beyond life cycle stages A1 to A3, but only the data for A1 to A3 will be considered when assessing compliance with the EU Ecolabel requirements.

Required documentation for Assessment and verification:

-  A declaration from the cement or lime supplier about the carbon emissions associated with the cement in line with the ETS method (i.e. fuel combustion and process emissions but not grid electricity consumption), with basic details about the calculation and assumptions used.
-  Fill out the Parts C & D excel file worksheet for criterion 5.2.

Criterion 5.3 – Emissions of dust, NO_x and SO_x to air

i Interpretation of criterion:

Applicability

This criterion does not apply to alternative cements in cases where the clinker content is less than 30%. However, if the clinker content in the alternative cement is greater than 30%, then information about emissions of dust, NO_x and SO_x for the clinker production does apply.

Mandatory elements

A mandatory limit is set for upper limits are set for specific emissions of dust, NO_x and SO_x emissions from the cement or lime kiln.

Scope of data

In a similar manner to criterion 4.4 for ceramics, depending on the complexity of the production set-up at the site where the cement or lime produced, and the share of total products from that site that will form part of the EU Ecolabel application, the representativeness of the emission data may vary if it is simply allocated on a per mass of production basis for the whole installation output. The main factors that would influence the representativeness of centralised data for the whole installation are:

- the share of total production at the site that is covered by the EU Ecolabel application
- the variability of raw material compositions in different products (especially sulphur)
- the variability of different firing schedules and air flow rates for different products (time and temperature profiles).

As the share covered by the EU Ecolabel decreases and the variabilities increase, the representativeness of centralised data for the EU Ecolabel decreases. If the applicant is also the cement or lime producer, then they should explain these aspects to the competent body if they wish to submit more detailed data that is allocated only to that part of their production which is relevant to the EU Ecolabel. If the applicant is the precast concrete producer, then it would be up to cement or lime producer to decide on whether full installation level or more specific product level data is most appropriate.

Frequency of data monitoring

Regarding emissions from the kilns, any installation with a cement clinker rotary kilns of capacity >50 tonnes/d, or other cement or lime kilns exceeding production capacities of 50 tonnes/d, will be subject to reporting requirements of the Industrial Emissions Directive (IED) 2010/75/EU. Harmonised emission reporting requirements were established in Commission Implementing Decision 2013/163/EU. These requirements should form the basis for any data submitted as part of the assessment and verification of criterion 5.3.

Units for data reporting

An important difference is that the Commission Implementing Decision 2013/163/EU sets limits in terms of exhaust gas concentration (i.e. mg/Nm³), whereas the EU Ecolabel sets limits based on production (i.e. mg/kg product). The key bridge between these two approaches is the specific airflow rate, which should be estimated in Nm³/kg of product. Both the annual average exhaust gas concentrations AND the average specific airflow rates would need to be provided in order to justify the final data submitted under criterion 5.3.

How the interface looks in the Parts C & D excel worksheet

Since there are a number of cells that require entries for criterion 5.3, it is worth presenting how the cells appear in the Parts C & D excel worksheet.

| A | B | C | D | E | F | G | H |
|----|--|--------------------------------------|-------------------|--------------|--------------|------------------|---|
| 20 | Criterion 5.3. Emissions of dust, NOx and SOx to air | | | | | | |
| 21 | Key data from emission inventory | | Data input | | | | |
| 22 | Kiln dust emissions | | Units | | Limit | | |
| 23 | Type of binder used | Alternative cement with >30% clinker | | | 34.5 | upper limit | |
| 24 | Reference name for data entry | | | | 11.5 | excellence limit | |
| 25 | Data collection period: | | | | | | |
| 26 | Has a declaration been provided from the manufacturer of the clinker or hydraulic lime about dust, NOx and SOx emissions and the calculation method? | | | | | | |
| 27 | Relevant production during period: | 5000 | tonnes | Check | | | |
| 28 | Weighted average dust emission conc. during | 4 | mg/Nm3 | | | | |
| 29 | Total airflow rate during period: | 14000000 | Nm3 | 2800 | Nm3t | | |
| 30 | Specific kiln dust emissions: | 11 | g/tonne | | | Points | |
| 31 | Specific kiln dust emissions lookup value: | <lower limit | g/tonne | | | 5.00 | |
| 32 | | | | | | | |
| 33 | Kiln NOx emissions | | Units | | Limit | | |
| 34 | Type of binder used | Alternative cement with >30% clinker | | | 1472 | upper limit | |
| 35 | Reference name for data entry | | | | 920 | excellence limit | |
| 36 | Data collection period: | | | | | | |
| 37 | Relevant production during period: | 5000 | tonnes | Check | | | |
| 38 | Weighted average NOx emission conc. during | 398.7 | mg/Nm3 | | | | |
| 39 | Total airflow rate during period: | 14000000 | Nm3 | 2800 | Nm3t | | |
| 40 | Specific kiln NOx emissions: | 1116 | g/tonne | | | Points | |
| 41 | Specific NOx dust emissions lookup value: | 1116 | g/tonne | | | 3.22 | |
| 42 | | | | | | | |
| 43 | Kiln SOx emissions | | Units | | Limit | | |
| 44 | Type of binder used | Alternative cement with >30% clinker | | | 460 | upper limit | |
| 45 | Reference name for data entry | | | | 115 | excellence limit | |
| 46 | Data collection period: | | | | | | |
| 47 | Relevant production during period: | 5000 | tonnes | Check | | | |
| 48 | Weighted average SOx emission conc. during | 34 | mg/Nm3 | | | | |
| 49 | Total airflow rate during period: | 14000000 | Nm3 | 2800 | Nm3t | | |
| 50 | Specific kiln SOx emissions: | 95 | g/tonne | | | Points | |
| 51 | Specific kiln SOx emissions lookup value: | <lower limit | g/tonne | | | 5.00 | |
| 52 | | | | | | | |

The cells with required inputs (green cells) start in C23, where the type of binder is defined (also in C34 and C44). The applicant can then define their own reference name for this data entry (cells C24, C35 and C45). Cell C26 refers to the basic explanations of the calculation method from the producer of the cement clinker or hydraulic lime.

The three key data are, in the case of dust emissions, in cells C27, C28 and C29. These three numbers form the basis for the specific airflow rate (automatically calculated in cell E29) and the specific dust emissions (automatically calculated in cell C30). Any obvious order-of-magnitude input errors should be easy to spot in the excel outputs. Depending on the value in cell C30, the total points awarded in relation to kiln dust emissions appears in cell G31. For ease of reference, the applicable EU Ecolabel limits are stated in cells F23 and F24.

The same approach for dust also applies for NOx and SOx.

Required documentation for Assessment and verification:



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-  A declaration from the cement or lime supplier about the dust, NO_x and SO_x emissions associated with production, specifically referring to the data collection period, production rates during this period, the average emission concentrations (clean gas) during this period and the average specific airflow rate during this period.
-  Fill out the Parts C & D excel file worksheet for criterion 5.3 using the relevant information provided in the declaration (or directly by the applicant if the license is to be awarded to the cement or hydraulic lime product).

Criterion 5.4 – Recovery and responsible sourcing of raw materials

i Interpretation of criterion:

Mandatory elements

Applicants are required to have in place procedures for in-situ or ex-situ recycling of returned or rejected concrete products.

The applicant is also required to identify the approximate transport distances of all the main virgin, recycled and secondary raw materials used in their production. This should apply to aggregates (coarse and fine) as a minimum, and could potentially be extended to fillers.

Before considering the potential environmental benefits of recycled or secondary materials, it is necessary to make sure that they are not sourced from much further away than the virgin raw materials used. As a very general rule of thumb, if the transport distance is more than 2.5 times that of the virgin raw material, the environmental benefits of the recycled or secondary material can be largely cancelled out by the extra impacts due to longer transport.

Consequently, the first information that the applicant needs to provide is a list of all the raw materials and recycled or secondary materials used, and how far these sources are from the factory. Information about the locations of virgin aggregates should already be available due to the requirements of criterion 1.1.

In cases where materials are supplied by an intermediary, any transport from the source to the intermediary shall be counted in addition to transport from the intermediary to the agglomerated stone producer. Upon request, contact details of suppliers should be provided to the Competent Body.

Accounting for recycled and secondary content

In terms of counting recycled materials, any reuse of process waste from the factory shall not be credited as recycled material if it is going back into the same production process that generated it.

Because the precast production process is essentially a batch process, it is possible to identify, distinguish and specify recycled/secondary material contents at a high level of granularity. Consequently, a number of different scores could be generated here for different products covered by the same EU ecolabel license application.

In order to ensure that the inputs of recycled and secondary materials are sufficient to account for any claims on such contents in outgoing products, the applicant needs to keep an inventory of ingoing and outgoing recycled/secondary materials (see the excel file screenshot below for more details).

Accounting for responsibly sourced content

A similar approach applies for responsibly sourced aggregates and a simpler “Yes/No” approach applies for responsibly sourced cement.

How the interface looks in the Parts C & D excel worksheet

Since there are a number of cells that require entries for criterion 5.4, it is worth presenting how the cells appear in the Parts C & D excel worksheet.



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| Criterion 5.4. Recovery and responsible sourcing of raw materials | | | | | | | | | |
|---|--|---------------------------|--------------------------|-------------------------|---|--|----|---|---|
| 53 | | | | | | | | | |
| 54 | | | | | | | | | |
| 55 | Type of binder used | Portland cement-based | | | LOOKUP | Points | | | Points |
| 56 | If Portland cement used, is it responsibly sourced | Yes | | | | 5.00 | | | |
| 57 | Material source(s) | Transport distance | Units | | | | | | |
| 58 | | | km | | | | | | |
| 59 | | | km | | | | | | |
| 60 | | | km | | | | | | |
| 61 | | | km | | | | | | |
| 62 | | | km | | | | | | |
| 63 | | | km | | | | | | |
| 64 | Reference name for data entry | Recycled content | | | Outputs about recycled/secondary aggregate | Responsibly sourced aggregate content | | | |
| 65 | | 1.5 | % | | 1.5 | 0.99999 | 65 | % | 3.25 |
| 66 | | | % | | 0 | | | % | |
| 67 | | | % | | 0 | | | % | |
| 68 | | | % | | 0 | | | % | |
| 69 | | | % | | 0 | | | % | |
| 70 | | | % | | 0 | | | % | |
| 71 | Recycled/secondary material inventory | Incoming (tonnes) | Outgoing (tonnes) | Balance (tonnes) | | | | | |
| 72 | e.g. January 20XX | | | 0 | | | | | Recycled/secondary material inventory result Pass |
| 73 | e.g. February 20XX | | | 0 | | | | | |
| 74 | e.g. March 20XX | | | 0 | | | | | |
| 75 | e.g. April 20XX | | | 0 | | | | | |
| 76 | e.g. May 20XX | | | 0 | | | | | |
| 77 | e.g. June 20XX | | | 0 | | | | | |
| 78 | e.g. July 20XX | | | 0 | | | | | |
| 79 | e.g. August 20XX | | | 0 | | | | | |
| 80 | e.g. September 20XX | | | 0 | | | | | |
| 81 | e.g. October 20XX | | | 0 | | | | | |
| 82 | e.g. November 20XX | | | 0 | | | | | |
| 83 | e.g. December 20XX | | | 0 | | | | | |
| 84 | | | | | | | | | |
| 85 | Responsibly sourced material inventory | Incoming (tonnes) | Outgoing (tonnes) | Balance (tonnes) | | | | | |
| 86 | e.g. January 20XX | | | 0 | | | | | Responsibly sourced material inventory Pass |
| 87 | e.g. February 20XX | | | 0 | | | | | |
| 88 | e.g. March 20XX | | | 0 | | | | | |
| 89 | e.g. April 20XX | | | 0 | | | | | |
| 90 | e.g. May 20XX | | | 0 | | | | | |
| 91 | e.g. June 20XX | | | 0 | | | | | |
| 92 | e.g. July 20XX | | | 0 | | | | | |
| 93 | e.g. August 20XX | | | 0 | | | | | |
| 94 | e.g. September 20XX | | | 0 | | | | | |
| 95 | e.g. October 20XX | | | 0 | | | | | |
| 96 | e.g. November 20XX | | | 0 | | | | | |
| 97 | e.g. December 20XX | | | 0 | | | | | |
| 98 | | | | | | | | | |

The first input cells (C55 and C56) relate to whether or not responsibly sourced cement is relevant and used. If it is, then 5 points are awarded in cell G56.

The next inputs (rows 58 to 63) refer to definitions for the different aggregate sources used and the associated transport distances (these should be distances calculated from real transport routes, not simple straight lines drawn on a map between source and destination). The main purpose here is to qualify or disqualify any secondary or recycled material sources as being valid for the accounting (i.e. are they sourced more or less than 2.5 times as far away as the virgin materials used?). If more materials need to be defined, users should insert more rows.

The next inputs (rows 65 to 70) refer to self-declared recycled or secondary material contents for specific products (Column C) and for self-declared responsibly sourced aggregate fractions (Column H). The recycled content should be selected from the drop-down list (options are rounded to the nearest 0.5%). If more products need to be defined, more rows can be inserted.

The next inputs relate to the inventory of inputs and outputs of qualified recycled/secondary materials (rows 72 to 83) and responsibly sourced materials (rows 86 to 97). For ANY claim on recycled/secondary material to be valid, it is essential that the balance of recycled/secondary materials never falls below zero. The same principle applies for responsibly sourced content claims.



Practically speaking, the only way the applicant can keep track of recycled/secondary material flows is to develop a system of credits/debits that is recorded on any delivered material invoices (credits), product shipment invoices (debits) and waste shipment notes (debits). The applicant should keep in-house records of these flows and ideally state the claimed recycled/secondary material contents on any outgoing products and batches.

Required documentation for Assessment and verification:

-  Fill out the Parts C & D excel file worksheet for criterion 5.4.
-  (If points are claimed) evidence from the cement supplier that the cement is responsibly sourced.
-  (If points are claimed) evidence from the aggregate supplier that the virgin aggregates is responsibly sourced or sourced from secondary or recycled materials.
-  (Upon request) a copy of the records kept for tracking flows of recycled and secondary materials.

Criterion 5.5 – Energy consumption

i Interpretation of criterion:

Mandatory part

The mandatory element of this criterion is to implement a plan to systematically monitor, record and reduce specific energy consumption and specific CO₂ emissions. The monitoring and recording system should amount to an inventory of fuel and electricity consumption and of production output. Evidence of electricity consumption should come from meter readings and bills. The monitoring of fuel consumption will depend on how fuel is handled onsite, but delivery notes, receipts and invoices will normally be the most appropriate way. Production output should be self-explanatory, referring to actual saleable products (and not necessarily sold production as such).

The energy inventory for the precast plant should cover a period of at least 12 months prior to the date of award of the EU Ecolabel. Because it was not possible to identify concrete benchmarks of energy consumption per unit of production output during background research, no pass/fail limit has been set in the criterion. So the main challenge is simply to gather the data in the first place. In cases where the data collection is something new for the applicant, it is recommended to start the application prior to the inventory having 12 months of data (e.g. a 6 month inventory might work at the beginning of the application process if the processing of the application and award of the EU Ecolabel was to take another 6 months – obviously presuming that the inventory is kept up to date during the application process).

The CO₂ footprint for consumed electricity should be specified, so that it can be translated into CO₂ footprints. If more than one electricity source is used and each has a different CO₂ footprint, a weighted average CO₂ footprint should be used. The type or types of fuel used should also be specified, for the same purpose.

If fuel is converted to electricity onsite (e.g. diesel generators) this should only be counted once, as the primary energy source (i.e. the fuel). If a combination of renewable electricity generated onsite and grid electricity is used, the metering should be set up so that all consumption onsite can be counted, regardless of where it comes from and if it is associated with a bill or not.

Care should be taken about the scope for fuel consumption, especially if the fuel consumption of vehicles that travel offsite is included or not. The simplest option would be to exclude vehicles that are used offsite, as this could be influenced by factors that are not related to the production process (e.g. employee travel to homes and elsewhere). However, the criterion leaves it up to the applicant to define the exact scope and then to apply it consistently.

Renewable energy (15 points in total)

For clarity, the first 10 points that are available refer to the share of renewable energy (i.e. electricity plus fuel). The next 5 points refer to how renewable electricity is sourced, regardless of how much of the total electricity is due to renewables. In cases where renewable electricity comes from more than one type of contracting (e.g. onsite generated via PV panels and a share of renewables in a green tariff from the utility supplier) the source that accounts for the largest share of renewable electricity shall be chosen.

Carbon footprint analysis (5 points in total)

The information required in criterion 5.5 (together with information about other criteria) could be used as a basis for a carbon footprint analysis. If such an analysis has been done in line with ISO 14067, 3 points shall be awarded. If it has been done in accordance with PEF methodology, 5 points shall be awarded. Any other

methods used will not result in the awarding of points unless a suitable equivalence can be justified to the Competent Body.

How the interface looks in the Parts C & D excel worksheet

Since there are a number of cells that require entries for indicator 5.5, it is worth presenting how the cells appear in the Parts C & D excel worksheet.

| A | B | C | D | E | F | G | H |
|-----|--|------------------------------------|------------------|---|------|---------------------|---|
| 100 | Criterion 5.5. Energy consumption | | | | | | |
| 101 | Reference name for data entry | | | | | | |
| 102 | Has an energy inventory been kept for fuel and electricity consumption at the quarry? | | | | | | |
| 103 | Is there a plan to reduce specific energy consumption and CO2 emissions at the quarry? | | | | | | |
| 104 | Key data from energy inventory | Data input | Units | | | | |
| 105 | Time period of data collection: | | | | | | |
| 106 | Approximate density of stone: | 2450 | kg/m3 | | | | |
| 107 | Saleable products produced during this period: | 20408.2 | m3 | | | | |
| 108 | | 450 | tonnes | | | | |
| 109 | Total electricity consumption: | 50000 | kWh | | | | |
| 110 | Total electricity CO2: | 17800 | kgCO2 eq. | | 356 | gCO2 eq./kWh | |
| 111 | Fuel-1 consumption (quantity): | 73919.38776 | Units | | 40 | MJ/unit of fuel-1 | |
| 112 | Fuel-1 consumption (energy): | 2956775.51 | MJ | | 100 | g CO2 eq./MJ fuel-1 | |
| 113 | Fuel-1 CO2 emissions | 295677.551 | kgCO2 eq. | | | | |
| 114 | Fuel-2 consumption (quantity): | | Units | | | | |
| 115 | Fuel-2 consumption (energy): | 0 | MJ | | | | |
| 116 | Fuel-2 CO2 emissions | 0 | kgCO2 eq. | | | | |
| 117 | Fuel-3 consumption (quantity): | | Units | | | | |
| 118 | Fuel-3 consumption (energy): | 0 | MJ | | | | |
| 119 | Fuel-3 CO2 emissions | 0 | kgCO2 eq. | | | | |
| 120 | Total fuel consumption (energy): | 2956775.5 | MJ | | | | |
| 121 | Total fuel CO2: | 295677.6 | kgCO2 eq. | | | | |
| 122 | Total energy consumption (kWh) | 871326.5 | kWh | | | | |
| 123 | Total energy consumption (MJ) | 3136775.5 | MJ | | | | |
| 124 | Total CO2: | 313477.6 | kg CO2 eq. | | | | |
| 125 | Specific energy consumption (kWh/m3) | 42.7 | kWh/m3 | | | | |
| 126 | Specific energy consumption (kWh/tonne) | 1936.3 | kWh/tonne | | | | |
| 127 | Specific energy consumption (MJ/m3) | 153.7 | MJ/m3 | | | | |
| 128 | Specific energy consumption (MJ/tonne) | 6970.6 | MJ/tonne | | | | |
| 129 | Specific CO2 (per m3) | 15.4 | kg CO2 eq./m3 | | | | |
| 130 | Specific CO2 (per tonne) | 696.6 | kg CO2 eq./tonne | | | | |
| 131 | Percentage of energy that is renewable | 54 | % | | 5.40 | out of 10 | |
| 132 | Type of renewable electricity used (if any) | Green tariff from utility supplier | | | 2.00 | out of 5 | |
| 133 | Has an ISO 14067 or PEF method analysis of the products carbon footprint/global warming impact been carried out? | Yes, ISO 14067 | | | 3.00 | out of 5 | |

Cells in green must be filled out and cells in red generate results automatically. The first green cell (C101) refers to the name that will be associated with the data entry (it could simply be the name of the product and an internal recipe mix reference). In cells C102 and C103, the applicant is required to confirm that they are meeting the mandatory elements of criterion 5.5. It should be noted that the competent body may ask for more details about what is behind the “Yes” entries to C102 and C103.

The next 6 rows that define the period and the quantities of material extracted and production output (i.e. of saleable products). The approximate density of the stone is important for converting units from m3 to tonnes. In cases where more than one density might apply, the applicant should estimate a weighted average density for products covered by the same energy data.

The first input relating to energy consumption appears in cell C109 (electricity, in kWh). An input is also required for the carbon factor of the electricity used (cell F109). This will automatically generate a total electricity CO2 in cell C110. With fuel consumption, it is necessary to define the quantity of fuel consumed (in volume or mass) and then to define both the calorific value of the fuel and the carbon factor of the fuel. The

choice of units is not so important, but the units must be consistent between the related entries (e.g. cells C111, F111 and F112 for fuel-1).

Since each fuel has its own specific calorific value and carbon factor, it might be complicated to make a weighted average estimation for multiple fuels in a single entry. For this reason, scope is made in the excel file to define 3 separate types of fuel input.

The CO₂ factors for the fuel and electricity should be based on information from the suppliers. In cases of doubt about fuel factors, the values in Annex VI to Commission Implementing Regulation (EU) 2018/2066 could be used.

The next rows (120 to 124) are simply the automatically calculated totals for energy and CO₂ and specific energy and CO₂ (rows 125 to 130). The automatic calculations for total energy (i.e. fuel plus electricity) already take into account the conversion factor for kWh and MJ (i.e. 1kWh = 3.6 MJ). The values in cells C33 and C35 are automatically shown in the "Summary worksheet".

 It should be noted that the specific energy consumption is based on the total saleable material produced and NOT the total material processed. So one way to improve specific energy consumption and specific CO₂ emissions is to improve reduce wastage rates.

The final three rows are where points are awarded. The first one relates to the share of renewable energy (i.e. fuel plus electricity). The next row is about the major mechanism for contracting renewable electricity and the final row is about if and how a carbon footprint has been carried out for the products.

 By obtaining the data necessary to fill out the excel sheet for criterion 5.5 and combining this with the relevant information in criteria 5.1 to 5.4, most of the key information needed for doing a carbon footprint analysis should already be available. So applicants are encouraged (but not obliged) to go a step further in order to obtain an extra 3 or 5 points.

Required documentation for Assessment and verification:

-  (Upon request) a copy of the fuel and electricity inventory for the relevant period where data was submitted, which also explains the scope of processes and operations covered by the inventory.
-  (Upon request) a copy of the plan to reduce specific energy consumption and CO₂ emissions for production output.
-  Fill out the Parts C & D excel file worksheet for criterion 5.5, specifying the quantity of products produced and the total fuel and electricity consumption during the same period.
-  (Upon request) copies of meter readings, bills and invoices for electricity and fuel to justify the numbers entered.
-  (If points are claimed for carbon foot-printing) A copy of the carbon footprint certificate or EPD, stating that the method is in line with ISO 14067 or PEF.

Criterion 5.6 – Environmentally innovative product designs (optional)

Interpretation of criterion:

As this is a purely optional criterion, there are no mandatory elements. However, if applicants wish to claim points under this criterion, the following it would be necessary to make some self-declarations about the product(s) in question and, in some cases, support this with relevant test reports.

- declarations on high infiltration rates need to be supported by a test report. If this is due to porous interlocking mechanisms, then the test should be conducted on interlocked units and not individual units.

- declarations on voids content can be simply assessed visually in cases where externally visible voids are the main influence on void content and the product is geometrically straightforward. In cases where internal void spaces are claimed, more detailed measurements of open and connected porosity or estimations related to reduced material density could be justified.

- for any thermal conductivity claims, it will be necessary to submit test reports.

- for hydraulic binder or alternative cement content, the main basis will be on the self-declaration, although in cases of doubt, the competent body could request an inspection to the site to visually assess the mixing and batching of relevant products.

- for grass pavers, the self-declaration can be visually confirmed by the competent body.

Required documentation for Assessment and verification:

-  Fill out the Parts C & D excel file worksheet for criterion 5.5, specifying the quantity of products produced and the total fuel and electricity consumption during the same period.
-  (Only if points are claimed) copies of any relevant test reports, technical drawings and self-declarations.