

## ANNEX

### **EU Ecolabel criteria for awarding the EU Ecolabel for hard covering products**

#### **FRAMEWORK**

##### **Aims of the criteria**

The EU Ecolabel criteria target the best performing hard covering products on the market by setting criteria that focus on the main environmental impacts associated with their production. In particular, the criteria aim to reduce risks associated to the use of energy (climate change, acidification, ozone depletion, depletion of non-renewable resources), reduce health risks associated with dust emissions, reduce specific water consumption and improve material efficiency aspects. To this end, the criteria:

- Set requirements for maintaining energy inventories and setting maximum limits for specific energy consumption, where appropriate;
- Recognise and reward the use of renewable energy sources;
- Set specific limits on emissions of SO<sub>x</sub>, NO<sub>x</sub> and dust from processes where fuel is combusted;
- Set best practice management requirements for processes where dust originates from diffuse sources;
- Set requirements for process wastewater recycling or limits for specific water consumption rates, where appropriate;
- Set requirements for minimum process waste reuse and reward the incorporation of content originating from recycled or secondary materials, where appropriate.

The importance of correct specification and installation of hard covering products on life cycle impacts is also addressed by setting requirements on fitness for use and consumer information

Due to the variety of materials and related production processes that are included in the scope, the criteria for awarding the EU Ecolabel to 'hard covering products' consist of both horizontal criteria common to all materials and material-specific criteria that are directly related to the associated production process.

A combination of mandatory and optional criteria apply where points are awarded either for going beyond the minimum mandatory requirements or for complying with optional criteria.

For the EU Ecolabel to be awarded, applicants must comply with all mandatory requirements and attain the minimum required number of points set for each specific product.

*Overview of applicable criteria according to the specific product (all criteria are mandatory unless the term "optional" is included at the end of the criterion title):*

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#### **1. Horizontal criteria common to all hard covering products**

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- 1.1. Industrial and construction mineral extraction
- 1.2. Hazardous substance restrictions

1.3. VOC emissions (possibility to be granted points)

1.4. Fitness for use

1.5. User information

1.6. Information appearing on the EU Ecolabel

1.7. Environmental Management System (optional and possibility to be granted points)

**Product specific criteria**

2. Natural stone products	3. Agglomerated stone products	4. Ceramic products	5. Precast concrete products
*2.1. Energy consumption at the quarry (possibility to be granted points)	3.1. Energy consumption (possibility to be granted points)	4.1. Specific fuel consumption for drying and firing (possibility to be granted points)	**5.1. Clinker factor of cement (possibility to be granted points)
*2.2. Material efficiency at the quarry (possibility to be granted points)	3.2. Dust control and air quality	4.2. Specific CO <sub>2</sub> emissions (possibility to be granted points)	**5.2. Specific CO <sub>2</sub> emissions from the cement clinker / alternative cement production (possibility to be granted points)
*2.3. Water and wastewater management at the quarry	3.3. Recycled / secondary material content (possibility to be granted points)	4.3. Process water consumption	**5.3. Emissions of dust, NO <sub>x</sub> and SO <sub>x</sub> to air (possibility to be granted points)
*2.4. Dust control at the quarry	3.4. Resin binder content (possibility to be granted points)	4.4. Emissions of dust, HF, NO <sub>x</sub> and SO <sub>x</sub> to air (possibility to be granted points)	5.4. Concrete recovery and responsible sourcing of raw materials (possibility to be granted points)
*2.5. Personnel safety and working conditions at the quarry	3.5. Process waste reuse (possibility to be granted points)	4.5. Wastewater management	5.5. Energy consumption at the precast concrete plant (possibility to be granted points)
*2.6. Quarry landscape impact ratios (optional and possibility to be granted points)		4.6. Process waste reuse (possibility to be granted points)	5.6. Environmentally innovative precast concrete product designs (optional and possibility to be granted points)
2.7. Energy consumption at the transformation plant (possibility to be granted points)		4.7. Glazes and inks	
2.8. Water and waste water management at the transformation plant (possibility to be granted points)			
2.9. Dust control at the transformation plant			
2.10. Process waste reuse from the transformation plant (possibility to be granted points)			

2.11. Regionally integrated production at the transformation plant (optional and possibility to be granted points)			
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*\*criteria applicable for awarding the EU Ecolabel to intermediate blocks of ornamental or dimension stone from natural stone quarries. \*\*criteria applicable for awarding the EU Ecolabel to cement products.*

**Assessment and verification:** *The specific assessment and verification requirements are indicated within each criterion.*

*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 and verifications that are issued by bodies accredited accordance to the relevant harmonised standard for testing and calibration laboratories, and verifications issued by bodies that are accredited according to 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 on-site inspections to check compliance with these criteria.*

*The hard covering products need to meet all respective requirements of the country where it is placed on the market. The applicant shall declare the product's compliance with this requirement.*

The following definitions shall apply:

- (1) 'Renewable energy' according to Article 2(a) of Directive 2009/28/EC<sup>1</sup>, means energy from renewable non-fossil sources, namely wind, solar, aerothermal, geothermal, hydrothermal and ocean energy, hydropower, biomass, landfill gas, sewage treatment plant gas and biogases.
- (2) 'Volatile Organic Compounds' (VOC) means any organic compounds having an initial boiling point less than or equal to 250°C measured at a standard pressure of 101,3 kPa as defined in Directive 2004/42/EC<sup>2</sup> and which, in a capillary column, are eluting up to and including n-Tetradecane (C<sub>14</sub>H<sub>30</sub>);

<sup>1</sup> OJ L 140, 5.6.2009, p. 16-62

<sup>2</sup> OJ L 143, 30.4.2004, p. 87-96

## EU ECOLABEL CRITERIA

### 1. HORIZONTAL CRITERIA COMMON TO ALL HARD COVERING PRODUCTS

#### 1.1 — Industrial and construction mineral extraction

The extraction of industrial and construction minerals (e.g. limestone, clay, aggregates, ornamental or dimension stone etc.) for the manufacture of an EU Ecolabel hard covering product shall only come from sites which are covered by the following documentation:

- the outcome of an environmental impact assessment screening procedure and, where relevant, a report in accordance with Directive 2014/52/EU<sup>3</sup>;
- a valid authorisation for the extraction activity issued by the relevant regional or national authority;
- a rehabilitation management plan associated with the authorisation for the extraction activity;
- a map indicating the location of the quarry;
- a declaration of conformity with EU Regulation No 1143/2014<sup>4</sup> on the prevention and management of the introduction and spread of invasive alien species.
- a declaration of conformity with Council Directive 92/43/EEC<sup>5</sup> (habitats) and Directive 2009/147/EC<sup>6</sup> (birds)\*,\*\*.

\*In cases where extraction sites are located in Natura 2000 network areas, composed of Special Protection Areas (SPAs) under Directive 2009/147/EC on the conservation of wild birds, and Special Areas of Conservation (SPCs) under Directive 92/43/EEC on the conservation of natural habitats and wild fauna and flora, extraction activities shall have been assessed and authorised in accordance with the provisions of Article 6 of Directive 92/43/EEC and have taken into account the [EC Guidance document on non-energy mineral extraction and Natura 2000](#).

\*\*In cases where extraction sites are located outside the EU, if they are extracted from areas officially nominated as candidates for or adopted as: Areas of Special Conservation Interest; part of the Emerald network pursuant to Recommendation No. 16 (1989) and Resolution No. 3 (1996) of the Standing Committee of the Convention of the Conservation of the European Wildlife and Natural Habitats (Bern Convention) or; protected areas designated as such under the national legislation of the sourcing / exporting countries, the extraction activities shall have been assessed and authorised in accordance with provisions that provide assurances equivalent to Directives 2009/147/EC and 92/43/EEC.

**Assessment and verification:** *The applicant shall provide a declaration of compliance with this requirement issued by the competent authorities or a copy of their authorisation issued by the competent authorities.*

*The rehabilitation management plan shall include the objectives for the rehabilitation of the quarry, the conceptual final landform design, including the proposed post quarry land use; details on the implementation of an effective revegetation program*

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<sup>3</sup> OJ L 124, 25.4.2014, p.1-18

<sup>4</sup> OJ L 317, 4.11.2014, p. 35-55

<sup>5</sup> OJ L 206, 22.7.1992, p. 7-50

<sup>6</sup> OJ L 20, 26.1.2010, p. 7-25

and details of an effective monitoring programme to assess performance of the rehabilitated areas.

In case industrial or construction mineral extraction activities have been carried out in Natura 2000 network areas (in the EU), the Emerald network or protected areas designated as such under the national legislation of the sourcing/exporting countries (outside the EU), the applicant shall provide a declaration of compliance with this requirement issued by the competent authorities or a copy of their authorisation issued by the competent authorities.

## 1.2 — Hazardous substance restrictions

The basis for demonstrating compliance with each of the sub-criteria under criterion 1.2 shall be the applicant providing a list of all the relevant chemicals used together with appropriate documentation (safety data sheet and/or a declaration from the chemical supplier).

### a) Restrictions on Substances of Very High Concern (SVHCs)

All ingoing chemicals used in the production process by the applicant and any supplied materials that form part of the final product shall be covered by declarations from suppliers stating that they do not contain, in concentrations greater than 0.10% (weight by weight), substances meeting the criteria referred to in Article 57 of Regulation (EC) No 1907/2006<sup>7</sup> that have been identified according to the procedure described in Article 59 of this Regulation and included in the candidate list for substances of very high concern for authorisation. No derogation from this requirement shall be granted.

**Assessment and verification:** The applicant shall provide a declaration that the product has been produced using supplied chemicals or materials that do not contain any SVHC in concentrations greater than 0.10 % (weight by weight). The declaration shall be supported by safety data sheets of process chemicals used or appropriate declarations from chemical or material suppliers.

The list of substances identified as SVHCs and included in the candidate list in accordance with Article 59 of Regulation (EC) No 1907/2006 can be found here:

[http://echa.europa.eu/chem\\_data/authorisation\\_process/candidate\\_list\\_table\\_en.asp](http://echa.europa.eu/chem_data/authorisation_process/candidate_list_table_en.asp).

Reference to the list shall be made on the date of application.

### b) Restrictions on substances classified under the Classification, Labelling and Packaging (CLP) Regulation

Unless derogated in Table X, the product shall not contain substances or mixtures in concentrations greater than 0.10 % (weight by weight) that are assigned any of the following hazard classes, categories and associated hazard statement codes, in accordance with Regulation (EC) No 1272/2008<sup>8</sup>:

- Group 1 hazards: Category 1A or 1B carcinogenic, mutagenic and/or toxic for reproduction (CMR): H340, H350, H350i, H360, H360F, H360D, H360FD, H360Fd, H360Df.

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<sup>7</sup> OJ L 396, 30.12.2006, p. 1

<sup>8</sup> OJ L 353, 31.12.2008, p. 1-1355

- Group 2 hazards: Category 2 CMR: H341, H351, H361, H361f, H361d, H361fd, H362; Category 1 aquatic toxicity: H400, H410; Category 1 and 2 acute toxicity: H300, H310, H330; Category 1 aspiration toxicity: H304; Category 1 specific target organ toxicity (STOT): H370, H372.
- Group 3 hazards: Category 2, 3 and 4 aquatic toxicity: H411, H412, H413; Category 3 acute toxicity: H301, H311, H331; Category 2 STOT: H371, H373.

The use of substances or mixtures that are chemically modified during the production process, so that any relevant hazard for which the substance or mixture has been classified under CLP no longer applies, shall be exempted from the above requirement.

Table X. Derogations to the CLP hazard restrictions on substances classified under the CLP Regulation and applicable conditions

Substance /mixture type	Applicability	Derogated hazard class, category and hazard statement code	Derogation conditions
Titanium dioxide	All materials within scope	Carcinogenic, category 2, H351 (inhalation)	That TiO <sub>2</sub> is not intentionally added to the product but is present because it is a naturally occurring impurity in raw materials used. The maximum TiO <sub>2</sub> content (expressed as TiO <sub>2</sub> ) in any raw material used to manufacture the final product shall be 2.0% (w/w).
Crystalline silica	All materials within scope	Specific Target Organ Toxicity, (repeated exposure), category 1 and 2, H372, H373	The applicant shall provide a declaration of compliance with any relevant instructions for safe handling and dosing specified in the safety data sheet or supplier declaration. Factory cutting operations shall be carried out use wet process tools or dry processes where a vacuum hood is in place to collect dust. Safety instructions regarding exposure to dust during any cutting operations carried out by installers shall be provided with the product.

**Assessment and verification:** The applicant shall provide a list of all relevant chemicals used in their production process together with the relevant safety data sheet or chemical supplier declaration.

Any chemicals containing substances or mixtures with restricted CLP classifications shall be highlighted. The approximate dosing rate of the chemical, together with the concentration of the restricted substance or mixture in that chemical (as provided in the safety data sheet or supplier declaration) and an assumed retention factor of 100 %, shall be used to estimate the quantity of the restricted substance or mixture remaining in the final product.

Justifications for any deviation from a retention factor of 100 % or for chemical modification of a restricted hazardous substance or mixture must be provided in writing.

*For any restricted substances or mixtures that exceed 0.10% (weight by weight) of the final hard covering product, a relevant derogation must be in place and proof of compliance with any relevant derogation conditions must be provided.*

### **1.3 — VOC emissions**

#### ***For agglomerated stone products***

The finished product shall be tested for VOC emissions in accordance with Greenguard method UL 2821 or equivalent methodology, showing chamber air concentrations compliant with the TVOC limit of  $\leq 0.5 \text{ mg/m}^3$  and all other relevant limits set out in Greenguard Gold standard UL 2818 after 7 days.

#### ***For all other hard covering products***

The applicant shall declare if the final product surface has been treated with any waxes, adhesives, coatings, resins or similar surface treatment chemicals and provide any related safety data sheets or supplier declarations about the VOC content of these surface treatment chemicals.

No formaldehyde-based resins are permitted.

5 points shall be awarded for applicants that demonstrate compliance with either of the following aspects:

- the results of a chamber test according to EN 16516 or ISO 16000 show that after 28 days, the air concentration is:  $\leq 0.01 \text{ mg/m}^3$  formaldehyde;  $\leq 0.3 \text{ mg/m}^3$  TVOC,  $\leq 0.1 \text{ mg/m}^3$  TSVOC and  $\leq 0.001 \text{ mg/m}^3$  category 1A and 1B carcinogens (excluding formaldehyde); styrene  $< 250 \mu\text{g/m}^3$ , or
- no final surface treatment chemical containing VOCs has been applied.

***Assessment and verification:*** *For agglomerated stone products, the applicant shall provide a copy of the Greenguard Gold certificate in accordance with UL 2818.*

*For all other hard covering products, the applicant shall provide a declaration of the use or non-use of surface treatment chemicals used during product finishing operations.*

*In cases where such chemicals have been used, the relevant safety data sheet(s) shall be screened for any VOC content or supplier declaration(s) shall be provided that explicitly state any relevant VOC content or the lack thereof.*

*In cases where the applicant voluntarily wishes to obtain the 5 points for the results of VOC emission testing, the applicant shall provide a declaration of compliance, supported by a test report carried out according to EN 16516 or the ISO 16000 series or standards. If compliance with the chamber concentration limits specified at 28 days can be met at any other time between 3 and 28 days, the chamber test may be stopped prematurely.*

### **1.4 — Fitness for use**

The applicant shall have a quality control and quality assessment procedure in place to ensure that products are fit for use. Where relevant, evidence demonstrating fitness for use may be provided. Any such evidence should be based on test results according

to appropriate ISO or EN standards or equivalent test methods. An indicative list of potentially relevant standards is provided below.

**Assessment and verification:** *The applicant shall provide a declaration of compliance with the criterion, supported by a description of their in-house quality control and quality assessment procedures.*

*In cases where test data according to EN or ISO standards, or equivalent methods is considered necessary, an indicative list of potentially relevant standards is indicated below:*

- Natural stone products: EN 771-6, EN 1341, EN 1342, EN 1343, EN 1467, EN 1468, EN 1469, EN 12057, EN 12058 or EN 12059;
- Agglomerated stone products: EN 15285, EN 15286, EN 15388 or EN 16954
- Ceramic products: EN 771-1, EN 1344, EN 13006 or EN 14411
- Precast concrete products: EN 771-3, EN 771-4, EN 1338, EN 1339, EN 1340 or EN 13748.

### 1.5 — User information

The product shall be sold with relevant user information, which provides advice on the product's proper installation, maintenance and disposal.

The product packaging and/or documentation accompanying the product shall provide contact details (telephone and/or email) or a reference to online materials for consumers that have enquiries or need specific advice regarding installation, maintenance or disposal of the hard covering product. Specific information that should be made available includes:

- Details about any relevant technical performance classes that indicate the appropriate use environment for the hard covering product, for example, tensile strength, frost resistance/water absorption, stain resistance and resistance to chemicals.
- Details about any necessary preparation of the underlying surface prior to installation, recommended installation techniques as well as specifications for any other relevant materials used during installation such as grouts, sealants, coatings, adhesives, mortars and cleaning agents used by the installer.
- For hard covering products with surfaces exposed to interior or exterior environments, consumer information shall also include instructions on routine cleaning operations and recommended cleaning agents. Where relevant, information on less periodic maintenance operations, such as rejuvenation of floor surfaces with high-pressure cleaners or by recoating and polishing, shall be provided as well.
- Information on the correct recycling or environmentally preferable disposal of packaging and any ancillary materials provided with the hard covering product, off-cuts of the hard covering product created during installation and the product itself at the end of life.

**Assessment and verification:** *The applicant should provide a high resolution image of the packaging and of any other consumer information provided.*



## 1.6 — Information appearing on the EU Ecolabel

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

[http://ec.europa.eu/environment/ecolabel/documents/logo\\_guide\\_lines.pdf](http://ec.europa.eu/environment/ecolabel/documents/logo_guide_lines.pdf)

If the optional label with text box is used, it shall contain the following three statements, as appropriate:

For natural stone products:

- Material efficient production process;
- Reduced dust emissions;
- Production with closed loop wastewater recycling;

For agglomerated stone products:

- Energy efficient production process;
- Reduced emissions to air;
- Low binder content xx% / Minimum recycled or secondary material content yy% (as appropriate).

For ceramic products:

- Energy efficient and low CO<sub>2</sub> production process;
- Reduced emissions to air;
- Material efficient product\* / Material efficient production process\*\*.

*\*applies to all thin format tiles <6mm thick, to any other tiles or fired clay products with recycled content  $\geq 20\%$  or to any other tiles or fired clay products with a void content  $\geq 25\%$ , \*\* applies to all other cases.*

For precast concrete products:

- Uses low environmental impact cement;
- Reduced emissions to air;
- Material efficient product\* / Material efficient production process\*\*

*\*applies to any precast concrete products with a recycled content  $\geq 20\%$  or a void content  $\geq 25\%$  in cases, \*\* applies to all other cases*

**Assessment and verification:** *The applicant shall provide a declaration of compliance with this criterion, supported by a high resolution image of the product packaging that clearly shows the label, the registration/licence number and, where relevant, the statements that can be displayed together with the label.*

### **1.7 — Environmental Management System (optional)**

*This criterion applies to the production facility of the applicant where the **licensed** EU Ecolabel product is produced.*

3 points shall be awarded for applicants that have a documented environmental management system in place according to ISO 14001 and certified by an accredited organization

or

5 points shall be awarded for applicants that have a documented environmental management system in place according to the EU Eco-Management and Audit Scheme (EMAS) and certified by an accredited organization.

**Assessment and verification:** *The applicant shall provide a copy of the valid ISO 14001 or EMAS certificate, as appropriate, and provide the details of the organization which carried out the accreditation.*

*In cases where an applicant has both ISO 14001 and EMAS certification, only the points for the EMAS certification shall be awarded.*

## 2. NATURAL STONE PRODUCT CRITERIA

### Scoring system

The EU Ecolabel may be awarded both to intermediate quarry products (namely large blocks or slabs of dimension or ornamental stone) directly produced by quarry operators and to final natural stone products produced by transformation plants.

In cases where the applicant is not the quarry operator and the quarry operator is not covered by an EU Ecolabel license, the applicant shall declare the quarry from which the material used to produce the EU Ecolabel natural stone product has been sourced, supported by delivery invoices dating no more than 1 year prior to application date.

The scoring system for each case and the minimum number of points necessary for EU Ecolabel natural stone products are presented in the table below.

<b>Criteria where points can be awarded</b>	<b>Intermediate blocks or slabs of dimension or ornamental stone</b>	<b>Final transformed natural stone products</b>
1.3. VOC emissions	n/a	0 or 5 points
1.7. Environmental Management System (of quarry)	0, 3 or 5 points	n/a
1.7. Environmental Management System (of transformation plant)	n/a	0, 3 or 5 points
2.1. Energy consumption at the quarry	Up to 20 points	Up to 20 points
2.2. Material efficiency at the quarry	Up to 25 points	Up to 25 points
<b>2.6. Quarry landscape impact ratios</b>	<b>Up to 10 points</b>	<b>Up to 10 points</b>
2.7. Energy consumption at the transformation plant	n/a	Up to 20 points
2.8. Water and waste water management at the transformation plant	n/a	Up to 10 points
2.10. Process waste reuse at the transformation plant	n/a	Up to 10 points
<b>2.11. Regionally integrated production at the transformation plant</b>	<b>n/a</b>	<b>Up to 5 points</b>
<b>Total maximum points</b>	<b>60</b>	<b>100+5</b>
<b>Minimum points required for EU Ecolabel</b>	<b>30</b>	<b>50</b>

## Quarry requirements

### 2.1. — Energy consumption at the quarry

The quarry operator shall have established a program to systematically monitor, record and reduce specific energy consumption to optimal levels. The program shall report energy consumption as a function of energy source (e.g. electricity and diesel) and purpose (e.g. use of onsite buildings, lighting, cutting equipment operation, pumps and vehicle operation). The program shall report on energy consumption for the site both on an absolute basis (in units of kWh or MJ) and in specific production (in units of kWh or MJ per m<sup>3</sup> of quarried material and per m<sup>3</sup> or t of material sold/produced and ready for sale) for a given calendar year. A plan to reduce specific energy consumption shall describe measures already taken or planned to be taken (e.g. more efficient use of existing equipment, investment in more efficient equipment, improved transportation and logistics etc.).

A total of 20 points may be granted as follows:

- Up to 10 points shall be awarded in proportion to how much of the energy consumed (fuel plus electricity) is from renewable sources (from 0 points for 0% renewable energy up to 10 points for 100% renewable energy).
- Up to 5 points shall be awarded depending on the manner in which any renewable electricity is purchased as follows: via private energy service agreements for on-site or near-site renewables (5 points); corporate power purchase agreements for on-site or near-site renewables (5 points); corporate power purchase agreements for grid-connected or remote grid renewables (4 points); independent green energy certifications (3 points); purchase of renewable energy certificates/guarantees of origin certificates (2 points) or green tariff from utility supplier (1 point).
- 5 points shall be awarded where a carbon footprint analysis has been carried out for the product in accordance with ISO 14064.

**Assessment and verification:** *The applicant shall provide an energy inventory for the quarry for a period of at least 12 months prior to the date of award of the EU Ecolabel license and shall commit to maintaining such an inventory during the validity period of the EU Ecolabel license. The energy inventory shall distinguish the different types of fuel consumed, highlighting any renewable fuels or renewable content of mixed fuels. As a minimum, the specific-energy consumption reduction plan must define the baseline situation with energy consumption at the quarry when the plan was established, identify and clearly quantify the different sources or energy consumption at the quarry, identify and justify actions to reduce energy consumption and to report results on a yearly basis.*

*The applicant shall provide details of the electricity purchasing agreement in place and highlight the share of renewables that applies to the electricity being purchased. If necessary, a declaration from the electricity provider shall clarify (i) the share of*

*renewables in the electricity supplied, (ii) the nature of the purchasing agreement in place (i.e. private energy service agreement, corporate power purchase agreement, independent green energy certified or green tariff) and (iii) whether the purchased electricity is from on-site or near-site renewables.*

*In cases where guarantee of origin certificates are purchased by the applicant to increase the renewables share, the applicant shall provide appropriate documentation to ensure that the guarantee of origin certificates have been purchased in accordance with the principles and rules of operation of the European Energy Certificate System.*

*In cases where points are claimed for a carbon footprint analysis, the applicant shall provide a copy of the analysis, which shall be in accordance with ISO 14064 and have been verified by an accredited third party. The footprint analysis must cover all manufacturing processes directly related to stone production at the quarry, onsite and offsite transportation during production, emissions relating to administrative processes (e.g. operation of onsite buildings) and transport of the sold product to the quarry gate or local transportation hub (e.g. train station or port).*

*In cases where the applicant is not the quarry operator and the quarry operator is not covered by an EU Ecolabel license, the applicant shall provide a relevant declaration from the quarry operator regarding mandatory energy consumption monitoring and any other relevant optional requirements that may result in points being granted.*

## **2.2. — Material efficiency at the quarry**

The quarry operator shall provide the following data relating to the extraction and commercial activities at the quarry for the most recent calendar year or rolling 12 month period prior to the date of award of the EU Ecolabel license:

- **A:** Total quantity of material extracted (m<sup>3</sup>).
- **B:** Saleable blocks produced from A (m<sup>3</sup>).
- **C:** Total quantity of extractive waste and materials produced from A that qualify as by-products (i.e. block fragments, stones and fines) that are sold (m<sup>3</sup>).
- **D:** Total quantity of extractive waste and materials produced from A that qualify as by-products (i.e. block fragments, stones and fines) that is used internally for useful purposes by replacing other materials which otherwise would have been used to fulfil that particular function or stored in the by-products deposition area (m<sup>3</sup>).
- **E:** Total quantity of extractive waste produced from A that are transferred to the extractive waste deposition area or landfill plus the total quantity of materials produced from A that qualify as by-products that are stored in the by-products deposition area (m<sup>3</sup>).

In cases where data is available in tonnes, it should be converted to m<sup>3</sup> using a fixed bulk density factor for the rock material being extracted.

The extraction efficiency ratio shall be at least 0.50, and shall be calculated as follows:

$$\text{Extraction efficiency ratio} = \frac{B + C}{A}$$

Up to 25 points can be awarded in proportion to the extent that the applicant demonstrates a higher extraction efficiency ratio up to an environmental excellence threshold of 1.00 (from 0 points for an extraction efficiency ratio of 0.50, up to 25 points for an extraction efficiency ratio of 1.00).

*Assessment and verification:* A declaration from the quarry operator shall be provided that states the values of A, B, C, D and E, expressed in m<sup>3</sup> and calculating extraction efficiency ratio.

For calculation purposes, it should be assumed that  $A - B = C + D + E$ . For any material calculated under C that was sold, invoices of the material delivery to the other sites shall be provided.

In cases where the applicant is not the quarry operator and the quarry operator is not covered by an EU Ecolabel license, the applicant shall provide a relevant declaration from the quarry operator regarding values for A, B, C, D and E.

### 2.3. — Water and wastewater management at the quarry

The applicant shall provide a description of water use in quarrying operations including strategies and methods for collection, recirculation and reuse of water.

In general:

- The site shall make provisions for the opportune collection of storm water run-off to compensate for water lost in wet sludge and evaporation.
- The site shall make provisions for the diversion of storm water run-off via a drainage network to prevent the surface flow of rainwater across the working area carrying suspended solid loads into any impermeable ponds (that supply water to the cutting equipment) or into natural watercourses.

In cases where wet cutting techniques are used:

- Water for use by wet cutting equipment shall be stored in an impermeable container (for example a tank, lined pond or an excavated pond set in impermeable rock).
- The separation of solids from cutting wastewater shall be achieved by sedimentation systems, retention basins, cyclone separators inclined plate clarifiers, filter presses or any combination thereof. Clarified water shall be

returned to the impermeable pond or container which supplies the cutting equipment.

- Settled sludge shall be dewatered prior to: internal use for useful purposes, external use for useful purposes or transport offsite to a suitable waste disposal facility.

**Assessment and verification:** *The quarry operator shall provide a declaration of compliance with this criterion, supported by relevant documentation describing how water is used onsite and providing details of the water management system, sludge separation and sludge disposal operations and destinations.*

*In cases where the applicant is not the quarry operator and the quarry operator is not covered by an EU Ecolabel license, the applicant shall provide a relevant declaration from the quarry operator regarding water use and the water management system at the quarry site.*

#### **2.4. — Dust control at the quarry**

The applicant shall demonstrate operational and site features that have been implemented for dust control at the quarry site. Features may vary from site to site but should include the following aspects for all sites, unless specified otherwise:

- Employment of dust suppression water sprays or vacuum hoods linked to dust filter bags/electrostatic precipitators for any dry cutting, crushing or other activities that are likely to generate significant quantities of dust.
- A plan in place for the relocation, modification or stoppage of operations onsite in order to prevent or minimise dust emissions to air during periods of adverse weather (not applicable to underground quarries);
- Inclusion of wind protection features in the quarry design that aim to reduce wind speed and thus minimise dust emissions and soil erosion onsite (e.g. wind fences or windbreaks consisting of one or more rows of plants along the border of the extractive waste deposition area, including the extractive waste facility and/or extractive waste handling area).
- Provision of an enclosed storage area for dewatered sludge from wet cutting or dust from dry cutting operations prior to sale, shipment to landfill or use for useful purposes onsite.
- Covering of the most heavily used road surfaces with concrete or asphalt paving.

- Provision of appropriate training to employees about good practice for dust control and provide adequate personal protective equipment to employees and visitors.
- Provision of routine medical check-ups for employees with the possibility for more frequent monitoring for the identification of respiratory problems and possible onset of silicosis (for granite and other siliceous rock quarries only).

*Assessment and verification: The quarry operator shall provide a declaration of compliance with this criterion, supported by relevant documentation and a description of the dust control features implemented at the quarry site.*

*In cases where the applicant is not the quarry operator and the quarry operator is not covered by an EU Ecolabel license, the applicant shall provide a relevant declaration from the quarry operator regarding dust control at the quarry site.*

### **2.5. — Personnel safety and working conditions at the quarry**

The applicant shall provide a description of the occupation health and safety policy in force at the quarry. The policy shall cover, as a minimum:

- A systematic analysis of all risks and major hazards that may occur in the quarry.
- A training plan for employees that is related to specific work procedures that are carried out at the quarry.
- An inspection and maintenance plan for all machinery, tools, electrical installations, vehicles, ladders, walkways, staircases, safety barriers and other relevant equipment.
- Placement of fixed guards around moving parts of machinery such as belts, pulleys, gears and adjustable guards for circular saws.
- Quick-release controls to shut off power to handheld electric power tools and emergency stop buttons on control panels for all heavy machinery.
- Safe storage of any explosives onsite.
- Appropriate transportation and lifting gear for the movement and positioning of ornamental stone or dimension stone blocks and large fragments of blocks.
- Emergency plans and first-aid training for personnel.
- Personal Protective Equipment provision for all personnel and site visitors.
- Clear identification of areas with risks of high noise levels.

The following aspects relating to working conditions shall also be guaranteed:

- Access to toilet, changing room and lunchroom facilities for workers and the provision of drinking water at all times.
- Compliance with national laws and regulations or ILO regulations, whichever is the more stringent.



- Labour contracts for all employees that clearly describe the relevant work, maximum obligatory hours of work, salary, social insurance contributions (or other suitable insurance against accidents in countries where social insurance does not exist), holiday entitlements and notice period.

**Assessment and verification:** The applicant shall provide a declaration of compliance with this criterion, supported by a copy of their occupational health and safety policy.

In cases where the applicant is not the quarry operator and the quarry operator is not covered by an EU Ecolabel license, the applicant shall provide a relevant declaration from the quarry operator regarding dust control at the quarry site.

In cases where the quarry is not located in an EU country, a third party verification (for example by Fairstone or other schemes with at least equivalent criteria on the occupational health and safety and working conditions listed above) shall be required.

## 2.6. — Quarry landscape impact ratios (optional)

The quarry operator shall provide the following data relating to the quarry site in order to permit the calculation of the quarry footprint ratio and/or the quarry beneficial land use ratio, based on a satellite view of the site no more than 1 year prior to the date of application.

- **QF:** The active quarry front area (m<sup>2</sup>).
- **EWDA:** The Extractive Waste Deposition Area (m<sup>2</sup>).
- **BPDA:** The By-Products Deposition Area (m<sup>2</sup>).
- **TAA:** Total Authorised Area for the site where the extraction activity takes place (m<sup>2</sup>).
- **BA:** Biodiverse Area, where (i) topsoil and vegetation cover or wetlands/engineered reed-beds have been established using native species as part of progressive rehabilitation and/or (ii) where topsoil and vegetation has simply not been disturbed in the first place and is not isolated in pockets within the quarry (m<sup>2</sup>).
- **REA:** Renewable Energy Area, where land has been occupied for the generation of electricity via solar, hydroelectric, wind or biomass energy (m<sup>2</sup>).

	Quarry footprint ratio	Beneficial land use ratio
Calculation	$\frac{QF + EWDA + BPDA}{TAA}$	$\frac{BA + REA}{TAA}$

Threshold for 0 points	0.70	0.00
Threshold for 5 points	0.20	0.40

Up to a total of 10 points can be awarded (5 for each ratio) in proportion to the extent that the applicant demonstrates that ratios exceed the relevant thresholds for 0 points and approach or exceed the relevant thresholds for 5 points.

**Assessment and verification:** A declaration from the quarry operator shall be provided, together with documentation including maps or satellite images in which the QF, EDWA, BPDA, TAA, BA and REA are outlined, and estimations of the surface area of each provided.

In cases where the applicant is not the quarry operator and the quarry operator is not covered by an EU Ecolabel license, the applicant shall provide a relevant declaration from the quarry operator regarding values for QF, EDWA, BPDA, TAA, BA and REA, supported by relevant maps or satellite images.

## Transformation plant requirements

### 2.7. — Energy consumption at the transformation plant

The applicant shall have established a program to systematically monitor, record and reduce specific energy consumption in the transformation plant to optimal levels. The program shall report energy consumption as a function of energy source (e.g. electricity and diesel) and purpose (e.g. use of onsite buildings, lighting, cutting equipment operation, pumps and vehicle operation). The program shall report on energy consumption for the site both on an absolute basis (in units of kWh or MJ) and in specific production (in units of kWh or MJ per m<sup>3</sup>, m<sup>2</sup> or t of material sold/produced and ready for sale) for a given calendar year.

A plan to reduce specific energy consumption shall describe measures already taken or planned to be taken (e.g. more efficient use of existing equipment, investment in more efficient equipment, improved transportation and logistics etc.).

A total of 20 points may be granted as follows:

- Up to 10 points shall be awarded in proportion to how much of the energy consumed (fuel plus electricity) is from renewable sources (from 0 points for 0% renewable energy, up to 10 points for 100% renewable energy).
- Up to 5 points shall be awarded depending on the manner in which any renewable electricity is purchased as follows: via private energy service agreements for on-site or near-site renewables (5 points); corporate power purchase agreements for on-site or near-site renewables (5 points); corporate power purchase agreements for grid-connected or remote grid renewables (4 points); independent green energy certifications (3 points); purchase of

renewable energy certificates/guarantees of origin certificates (2 points) or green tariff from utility supplier (1 point).

- 5 points shall be awarded where a carbon footprint analysis has been carried out for the product in accordance with ISO 14064.

*Assessment and verification: The applicant shall provide an energy inventory for the transformation plant for a period of at least 12 months prior to the date of award of the EU Ecolabel license and shall commit to maintaining such an inventory during the validity period of the EU Ecolabel license. The energy inventory shall distinguish the different types of fuel consumed, highlighting any renewable fuels or renewable content of mixed fuels. As a minimum, the specific-energy consumption reduction plan must define the baseline situation with specific energy consumption at the transformation plant when the plan was established, identify and clearly quantify the different sources of energy consumption at the transformation plant, identify and justify actions to reduce specific energy consumption and to report results on a yearly basis.*

*The applicant shall provide details of the electricity purchasing agreement in place and highlight the share of renewables that applies to the electricity being purchased. If necessary, a declaration from the electricity provider shall clarify (i) the share of renewables in the electricity supplied, (ii) the nature of the purchasing agreement in place (i.e. private energy service agreement, corporate power purchase agreement, independent green energy certified or green tariff) and (iii) whether the purchased electricity is from on-site or near-site renewables.*

*In cases where guarantee of origin certificates are purchased by the applicant to increase the renewables share, the applicant shall provide appropriate documentation to ensure that the guarantee of origin certificates have been purchased in accordance with the principles and rules of operation of the European Energy Certificate System.*

*In cases where points are claimed for a carbon footprint analysis, the applicant shall provide a copy of the analysis, which shall be in accordance with ISO 14064 and have been verified by an accredited third party. The footprint analysis must cover all manufacturing processes directly related to stone production at the quarry and the transformation plant, onsite and offsite transportation during production, emissions relating to administrative processes (e.g. operation of onsite buildings) and transport of the sold product to the transformation plant gate or local transportation hub (e.g. train station or port).*

## **2.8. — Water and wastewater management at the transformation plant**

The applicant shall provide a description of water use in the natural stone transformation plant, including strategies and methods for collection, recirculation and reuse of water.

The recovery of solids from wastewater from cutting operations must be carried out onsite using sedimentation and/or filtration principles.

Clarified wastewater must be stored onsite and recirculated for cutting operations, dust control or other purposes.

5 points shall be awarded for the installation of a rainwater collection system to collect and store rainwater that lands on impermeable areas on site and prevents the surface flow of rainwater across working areas, and carrying suspended solid loads into any impermeable ponds (that supply water to the cutting equipment) or into natural watercourses.

*Assessment and verification:* The applicant shall provide a description of water use onsite, of the wastewater/rainwater collection network and of the wastewater treatment and recirculation system.

## **2.9. — Dust control at the transformation plant**

The applicant shall demonstrate site features that have been implemented for dust control at the transformation plant. Features may vary from site to site but should include the following aspects for all sites:

- Employment of dust suppression water sprays or vacuum hoods linked to dust filter bags/electrostatic precipitators for any dry cutting or shaping activities that are likely to generate significant quantities of dust.
- Regular cleaning of indoor floor areas of dust using either water sprays on surfaces that drain to a water treatment system onsite or the use of a vacuum device for dry dust removal (sweeping of dry dust should not be carried out).
- Provision of an enclosed storage area for dewatered sludge from wet cutting or dust from dry cutting operations prior to sale or donation for reuse offsite or disposal to landfill.
- Covering the most heavily used road areas with concrete or asphalt paving.
- Provision appropriate training to employees about good practice for dust control and provision of adequate personal protective equipment to employees and visitors.
- Provision of routine medical check-ups for employees with the possibility for more frequent monitoring for the identification of respiratory problems and possible onset of silicosis (for transformation plants processing granite and other siliceous rock only).

*Assessment and verification:* The applicant shall provide a declaration of compliance with this criterion, supported by relevant documentation and a description of the dust

control features implemented at the transformation plant and details of the medical check-up system for employees, where relevant.

**2.10. — Process waste reuse from the transformation plant**

The applicant shall complete an inventory of process waste production for the transformation plant. The inventory shall detail the type and quantity of waste produced (e.g. process scrap\* and process sludge\*\*).

The process waste inventory shall cover a 12 month period and, during that same period, the total product output shall be estimated both in terms of mass (kg or tonne) and surface area (m<sup>2</sup>).

At least 80% by mass of the process scrap\* generated from natural stone processing operations onsite shall be reused in other applications or stored onsite in preparation for future sale.

\*fragments and trimmings from transformation operations at the transformation plant.

\*\*settled solids recovered from the onsite treatment of wastewater from dust control, cutting operations and finishing operations

A total of 10 points may be granted as follows:

- Up to 5 points shall be awarded in proportion to the extent that applicants can demonstrate higher reuse rates of process scrap, up to a maximum of 100% reuse by mass (from 0 points for 80% process scrap reuse, up to 10 points for 100% process scrap reuse)
- Up to 5 points shall be awarded in proportion to the extent that applicants can demonstrate any reuse of process sludge, up to a maximum of 100% (from 0 points for 0% process sludge reuse, up to 10 points for 100% process sludge reuse).

**Assessment and verification:** The applicant shall provide a waste inventory for the transformation plant for a period of at least 12 months prior to the date of award of the EU Ecolabel license and shall commit to maintaining such an inventory during the validity period of the EU Ecolabel license.

The applicant shall provide a declaration of compliance with the mandatory requirement of this criterion, supported by a calculation of total production process scrap (in kg or t). Details about the destination of these process wastes shall also be provided with clarifications about whether it is external reuse in another process or sent to landfill. For any external reuse or landfill disposal, shipment notes shall be presented.

**2.11. — Regionally integrated production at the transformation plant (optional)**

*This criterion applies to the transport distance between the quarry gate and the transformation plant gate and is specific to natural stone products originating from a given quarry.*

Up to 5 points shall be awarded in proportion to the extent that applicants can demonstrate that the transportation distance for intermediate ornamental or dimension stone blocks from the quarry to the transformation plant is less than 260km (from 0 points if  $\geq 260$ km, up to 5 points if  $\leq 10$ km).

*Assessment and verification: The applicant shall provide details of the address of the transformation plant and the address or geographical location of the relevant quarry gate. The applicant shall also describe the transport mode(s) used to bring the intermediate ornamental or dimension stone blocks to the transformation plant.*

*The transport route and total distance shall be indicated on a map using satellite image maps and freely available distance estimating software.*

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### 3. AGGLOMERATED STONE PRODUCT CRITERIA

#### Scoring system

The scoring system and the minimum number of points necessary for EU Ecolabel agglomerated stone products are presented in the table below.

Criteria where points can be awarded	Agglomerated stone products
1.7. Environmental Management System	0, 3 or 5 points
3.1. Energy consumption	Up to 30 points
3.3. Recycled/secondary material content	Up to 35 points
3.4. Resin binder content	Up to 20 points
3.5. Process waste reuse	Up to 10 points
<b>Total maximum points</b>	<b>100</b>
<b>Minimum points required for EU Ecolabel</b>	<b>50</b>

#### 3.1. — Energy consumption

The specific process electricity consumption for agglomerated stone production (including raw material batching, primary mixing, secondary mixing, moulding and finishing) shall not exceed 1.1 MJ/kg.

If grinding of stone raw material is carried out, the specific electricity consumption of the grinding process (in MJ/kg) shall be reported separately but shall not be added to the total for the process.

A total of 30 points may be granted as follows:

- Up to 10 points shall be awarded in proportion to how the specific process electricity consumption is reduced towards a threshold of environmental excellence of 0.7 MJ/kg (from 0 points for 1.1 MJ/kg up to 10 points for 0.7 MJ/kg).
- Up to 10 points can be awarded in proportion to how much of the electricity consumed is from renewable sources (from 0 points for 0% renewable electricity up to 10 points for 100% renewable electricity).
- Up to 10 points shall be awarded depending on the manner in which any renewable electricity is purchased as follows: via private energy service agreements for on-site or near-site renewables (10 points); corporate power purchase agreements for on-site or near-site renewables (10 points); corporate power purchase agreements for grid-connected or remote grid renewables (8 points); independent green energy certifications (6 points); purchase of renewable energy certificates/guarantees of origin certificates (4 points) or green tariff from utility supplier (2 points).

**Assessment and verification:** Specific process electricity consumption shall be calculated by dividing the electricity consumption for relevant process equipment by production volume (in kg or m<sup>3</sup>). Data reported shall be representative of the product(s) applying for the EU Ecolabel. In cases where different products covered by the same license application have significantly different values, the data shall be reported separately for each product. In cases where production data is available in m<sup>3</sup>, it should be converted to kg using the relevant bulk density factor (in kg/m<sup>3</sup>) for the agglomerated stone product.

The applicant shall provide details of the electricity purchasing agreement in place and highlight the share of renewables that applies to the electricity being purchased. If necessary, a declaration from the electricity provider shall clarify (i) the share of renewables in the electricity supplied, (ii) the nature of the purchasing agreement in place (i.e. private energy service agreement, corporate power purchase agreement, independent green energy certified or green tariff) and (iii) whether the purchased electricity is from on-site or near-site renewables.

In cases where guarantee of origin certificates are purchased by the applicant to increase the renewables share, the applicant shall provide appropriate documentation to ensure that the guarantee of origin certificates have been purchased in accordance with the principles and rules of operation of the European Energy Certificate System.

### **3.2. — Dust control and air quality**

Any working areas where there is a risk of exposure to styrene, where the styrene concentration may exceed 20 ppm (or 85 mg/m<sup>3</sup>) according to monitoring data, shall be clearly indicated and be well ventilated.

Resin formulations shall be dosed and mixed using closed systems.

The applicant shall demonstrate site features that have been implemented for dust control at the site. Features may vary from site to site but should include the following aspects for all sites:

- Employment of dust suppression water sprays or vacuum hoods linked to dust filter bags/electrostatic precipitators for any dry cutting, crushing or other activities that are likely to generate significant quantities of dust.
- Regular cleaning of indoor floor areas of dust using either water sprays on surfaces that drain to a water treatment system onsite or the use of a vacuum device for dry dust removal (sweeping of dry dust should not be carried out).
- Have an enclosed storage area for dewatered sludge from wet cutting or dust from dry cutting operations prior to sale, shipment to landfill or use for useful purposes onsite.



- Cover the most heavily used road areas with concrete or asphalt paving.
- Provide appropriate training to employees about good practice for dust control and provide adequate personal protective equipment to employees and visitors.
- Provide routine medical check-ups for employees with the possibility for more frequent monitoring for the identification of respiratory problems and possible onset of silicosis.

***Assessment and verification:*** *The applicant shall provide a declaration of compliance with this criterion, supported by: (i) relevant documentation and a description of any working areas with an exposure risk to styrene and details of the ventilation system in place; (ii) a description of the dust control features implemented at the production site and (iii) details of the medical check system in place for employees.*

### **3.3. — Recycled/secondary material content**

The applicant shall assess and document the regional availability of virgin material, recycled material from wastes produced by different production processes and secondary material from by-products of different production processes. The approximate transport distances of the documented material sources shall be stated.

Up to 35 points shall be awarded in proportion to extent of incorporation of recycled/secondary materials into the agglomerated stone product up to a threshold of environmental excellence threshold of 35% w/w content (from 0 points for 0% w/w, up to 35 points for  $\geq 35\%$  w/w recycled/secondary material content).

The incorporation of dust, cuttings and rejects of agglomerated stone products into new product shall not be considered as recycled content if it is going back into the same process that generated it.

***Assessment and verification:*** *The applicant shall provide a declaration of compliance with the mandatory requirement of this criterion, supported by documentation stating the identification of potential sources of virgin, recycled and secondary materials.*

*Recycled or secondary materials shall only be counted as contributing towards the content of recycled/secondary material if they are obtained from sources that are  $\leq 2.5$  times distant from the agglomerated stone production site than the main virgin materials used (e.g. marble and quartz).*

*A monthly balance sheet of recycled/secondary materials shall be presented based on the 12 months of production prior to the date of award of the EU Ecolabel license and shall commit to maintaining such a balance sheet during the validity period of the EU Ecolabel license. The balance sheet shall provide the quantities of ingoing recycled/secondary materials (justified by delivery notes and invoices) and outgoing*

*recycled/secondary materials in all sold or ready for sale agglomerated stone production with recycled/secondary material content claims (justified by product quantities and % claims).*

*Claims for recycled and/or secondary material content shall be representative of the mix composition(s) used at the batch level for the EU Ecolabel product(s). The general allocation of recycled and/or secondary materials shall not be permitted.*

*In cases where different products covered by the same license application have significantly different values, the data shall be reported separately for each product.*

### **3.4. — Resin binder content**

The use of polyester, epoxy or other resins in the production shall be limited to 10% of the total weight of raw materials.

Up to 20 points shall be awarded in proportion to how much the resin binder content is reduced towards the threshold of environmental excellence of 5% (from 0 points for 10% binder content, up to 20 points for 5% binder content).

*Assessment and verification: The applicant shall provide a declaration of compliance with the mandatory requirements of the criterion, supported by a calculation of the total use of resin binder as a % of the total weight of the agglomerated stone product.*

*Claims for binder content shall be representative of the mix composition(s) used at the batch level for the EU Ecolabel product(s).*

*In cases where different products covered by the same license application have significantly different values, the data shall be reported separately for each product.*

### **3.5. — Process waste reuse**

The applicant shall complete an inventory of process waste production for the agglomerated stone production process. The inventory shall detail the type and quantity of waste produced (e.g. process scrap\* and process sludge\*\*).

The process waste inventory shall cover a 12 month period and, during that same period, the total product output shall be estimated both in terms of mass (kg or tonne) and surface area (m<sup>2</sup>).

At least 70% of process waste (scrap plus sludge) generated from agglomerated stone slab and block production shall be reused in other applications.

\*fragments and trimmings from cutting operations and reject products

**\*\*settled solids recovered from the onsite treatment of wastewater from dust control, cutting operations and finishing operations**

Up to 10 points shall be awarded in proportion to the extent that applicants can demonstrate any reuse of process waste, up to a maximum of 100% (from 0 points for 70% process waste reuse, up to 10 points for 100% process waste reuse).

***Assessment and verification:*** *The applicant shall provide a waste inventory for the agglomerated stone production plant for a period of at least 12 months prior to the date of award of the EU Ecolabel license and shall commit to maintaining such an inventory up to date during the validity period of the EU Ecolabel license.*

*The applicant shall provide a declaration of compliance with the mandatory requirements of this criterion, supported by a calculation of total production process scrap and sludge (in kg or t). Details about the destination of these process wastes shall also be provided with clarifications about whether it is external reuse in another process or sent to landfill. For any external reuse or landfill disposal, shipment notes shall be presented.*

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## 4. CERAMIC PRODUCT CRITERIA

### Scoring system

The scoring system and the minimum number of points necessary for EU Ecolabel ceramic products are presented in the table below.

Criteria where points can be awarded	Ceramic products
1.3. VOC emissions	0 or 5 points
1.7. Environmental Management System	0, 3 or 5 points
4.1. Specific fuel consumption	Up to 20 points
4.2. Specific CO <sub>2</sub> emissions	Up to 20 points
4.4. Emissions of dust, HF, NO <sub>x</sub> and SO <sub>x</sub>	Up to 40 points
4.6. Process waste reuse	Up to 10 points
<b>Total maximum points available</b>	<b>100</b>
<b>Minimum points required for EU Ecolabel</b>	<b>50</b>

### 4.1. — Specific fuel consumption for drying and firing

Coal, petroleum coke, light fuel oil and heavy fuel oil shall not be used as fuels in dryers or kilns.

The specific fuel energy consumption for drying and firing processes shall not exceed the relevant mandatory limits defined below.

Product type	Mandatory limit	Threshold of environmental excellence
Spray-dried powder	1.8 MJ/kg powder*	1.3 MJ/kg powder*
ceramic tiles ≥6mm thick	4.1 MJ/kg**	3.2 MJ/kg**
ceramic tiles <6mm thick	82 MJ/m <sup>2</sup> **	64 MJ/kg**
ceramic brick, block and roofing tile	3.5 MJ/kg**	2.1 MJ/kg**
ceramic masonry unit	2.2 MJ/kg**	1.1 MJ/kg**

\*limit applies only to fuel consumed in the spray dryer, kg of dried powder includes any residual moisture content, which would typically be 5-7%

\*\*limit applies only to fuel consumed in the ceramic body dryer and kiln

Up to 20 points shall be awarded in proportion to how much the specific fuel consumption for drying and firing processes is reduced towards the relevant threshold of environmental excellence in the table above (e.g. for ceramic masonry units: from 0 points for 2.2 MJ/kg, up to 20 points for ≤1.1 MJ/kg).

For ceramic tile products where spray-dried powder is used (either produced onsite or offsite), two scores shall be calculated as per the previous paragraph, one for the

spray-dried powder (SDP) and one for the ceramic tile kiln and ceramic body dryer (KD). The two scores shall then be converted into a single score as follows:

$$Fuel_{score} = 0.35(SDP) + 0.65(KD)$$

**Assessment and verification:** The applicant shall declare the specific fuel consumption value(s) for the relevant product(s) together with calculations to convert value(s) into a specific score. The specific fuel consumption shall be calculated by dividing the fuel consumption (in MJ) for relevant process equipment by production volume (in kg or m<sup>2</sup>, as appropriate) during the relevant production period.

In cases where production data is only available in m<sup>2</sup> but needs to be reported in kg, or vice versa, the value should be converted using a fixed bulk density factor for the ceramic product.

For continuous production campaigns, data should be representative of a 12 month period. For shorter production campaigns, the actual production period(s) shall be stated and site readings should represent at least 80% of the production campaign.

Volumetric or mass inputs of fuel to the kiln and dryer systems shall be taken from site readings and converted into units of MJ by multiplying the volume/mass of fuel consumed over the defined production period (in kg, t, L or Nm<sup>3</sup>) by a specific or generic calorific value for the same fuel (in MJ/kg, MJ/t, MJ/L or MJ/Nm<sup>3</sup>).

In cases where fuel used to generate heat for drying operations is fed to a cogeneration system, the electricity generated by the system during the defined production period (measured in kWh and converted into MJ) should be subtracted from the total dryer fuel consumption reading.

#### 4.2. — Specific CO<sub>2</sub> emissions

The specific CO<sub>2</sub> emissions associated with fuel consumption and process emissions for drying and firing processes shall not exceed the relevant mandatory limits defined below.

Product type	Mandatory limit	Threshold of environmental excellence
Spray-dried powder	101 kgCO <sub>2</sub> /t powder*	73 kgCO <sub>2</sub> /t powder*
ceramic tiles ≥6mm thick	280 kgCO <sub>2</sub> /t**	230 kgCO <sub>2</sub> /t**
ceramic tiles <6mm thick	5.6 kgCO <sub>2</sub> /m <sup>2</sup> **	4.6 kgCO <sub>2</sub> /m <sup>2</sup> **
ceramic brick, block and roofing tile	246 kgCO <sub>2</sub> /t**	168 kgCO <sub>2</sub> /t**
ceramic masonry unit	173 kgCO <sub>2</sub> /t**	112 kgCO <sub>2</sub> /t**

\*limit applies only to fuel consumed in the spray dryer, kg of dried powder includes any residual moisture content, which would typically be 5-7%

\*\*limit applies only to fuel consumed in the ceramic body dryer and kiln and estimated process emissions in the kiln

Up to 20 points shall be awarded in proportion to how much the specific CO<sub>2</sub> emissions are reduced towards the relevant threshold of environmental excellence in the table above (e.g. for ceramic masonry units: from 0 points for 173 kgCO<sub>2</sub>/kg, up to 20 points for 112 kgCO<sub>2</sub>/kg).

For ceramic tile products where spray-dried powder is used (either produced onsite or offsite), two scores shall be calculated as per the previous paragraph, one for the spray-dried powder (SDP) and one for the ceramic tile kiln and dryer (KD). The two scores shall then be converted into a single score as follows:

$$CO_{2score} = 0.35(SDP) + 0.65(KD)$$

**Assessment and verification:** The applicant shall declare the specific CO<sub>2</sub> emission value(s) for the relevant product(s) together with calculations to convert value(s) into a specific score. The first part of the calculation shall be to multiply the specific fuel consumption calculated in criterion 4.1 (in MJ/kg or MJ/m<sup>2</sup>, as appropriate) by the appropriate standard carbon emission factor(s) listed in Annex VI of Regulation (EC) No 601/2012 for the fuel(s) used (alternative carbon emission factors may be used in accordance with Articles 30 to 39 of the same Regulation).

The second part of the calculation shall be to add process CO<sub>2</sub> emissions, which shall be estimated based on the average carbonate (CO<sub>3</sub>) content of the raw material mix used. The carbonate value (in kg/t) shall be converted to process CO<sub>2</sub> emissions by multiplying by a factor of 44/60. In cases where applicants fail to provide estimates of process emissions due carbonate content in raw materials, a default process emission of 96 kg/t ceramic product shall be assumed for the estimation of actual emissions.

In cases where production data is only available in m<sup>2</sup> but needs to be reported in kg, or vice versa, the value should be converted using a fixed bulk density factor for the ceramic product.

#### 4.3. — Process water consumption

The facility producing the ceramic product shall either:

- Have a closed loop wastewater recycling system for process wastewater that facilitates zero liquid discharge; or
- Be able to demonstrate that specific freshwater consumption that is less than or equal to the limits defined in the table below.

Product type	Is spray drying carried out onsite?*	Consumption limit
Thin format ceramic tiles (≤ 6mm thickness)	Yes	20.0 L/m <sup>2</sup>
	No	10.0 L/m <sup>2</sup>
All other ceramic tile and fired	Yes	1.0 L/kg

clay products	No	0.5 L/kg
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\*Spray drying water consumption is only relevant to ceramic tile production and values should be included if the spray dryer is operated by the applicant at the same site.

**Assessment and verification:** *The applicant shall provide a declaration of compliance with the mandatory requirement, stating by which means they comply.*

*In cases where a zero liquid discharge system is in place for recycling process wastewater, they shall provide a brief description of the system and its main operating parameters.*

*In cases where such a system is not in place, total process water consumption data (in L or m<sup>3</sup>) and the total ceramic production data (in kg or m<sup>2</sup>) shall be provided for the most recent calendar year or rolling 12 month period prior to the date of award of the EU Ecolabel license.*

*In case it is not possible to provide specific data for a production line or product, the applicant shall refer to data for the entire plant.*

*Water consumption due to toilets, canteens and other activities not directly relevant to the production process should be metered separately and not be included in the calculation.*

#### 4.4. — Emissions of dust, HF, NO<sub>x</sub> and SO<sub>x</sub> to air

The specific dust, HF, NO<sub>x</sub> and SO<sub>x</sub> emissions to air associated with the production of ceramic products shall not exceed the relevant mandatory limits defined in the table below.

Product type	Emission parameter	Mandatory limit	Environmental excellence threshold	Test method	Points available
ceramic tiles <6mm thick	Dust (cold)	3000 mg/m <sup>2</sup> or 150 mg/kg	1300 mg/m <sup>2</sup>	EN 13284	Up to 5
	Dust (kiln)	200 mg/m <sup>2</sup>	80 mg/m <sup>2</sup>	EN 13284	Up to 5
	HF	200 mg/m <sup>2</sup>	70 mg/m <sup>2</sup>	ISO 15713	Up to 10
	NO <sub>x</sub> (as NO <sub>2</sub> )	2500 mg/m <sup>2</sup>	1750 mg/m <sup>2</sup>	EN 14792	Up to 10
	SO <sub>x</sub> (as SO <sub>2</sub> )	or *1500 mg/m <sup>2</sup> **4000 mg/m <sup>2</sup>	1150 mg/m <sup>2</sup>	EN 14791	Up to 10
ceramic tiles ≥6mm thick and fired clay brick, block and roof	Dust (cold)	150 mg/kg	650 mg/kg	EN 13284	Up to 5
	Dust (kiln)	10 mg/kg	4 mg/kg	EN 13284	Up to 5
	HF	10 mg/kg	3.5 mg/kg	ISO 15713	Up to 10

tile products	NOx (as NO <sub>2</sub> )	125 mg/kg	85 mg/kg	EN 14792	Up to 10
		*75 mg/kg			
	SOx (as SO <sub>2</sub> )	or	55 mg/kg	EN 14791	Up to 10
		**200 mg/kg			

\*when S content of raw material is  $\leq 0.25\%$  by weight

\*\*when S content of raw material is  $> 0.25\%$  by weight

Up to 40 points shall be awarded in proportion to **how much** the actual specific emissions of dust, HF, NOx and SOx **are reduced towards** the relevant thresholds of environmental excellence in the table **above** (e.g. for HF emissions: from 0 points for 200 mg/m<sup>2</sup> HF, up to 10 points for 70 mg/m<sup>2</sup> HF).

**Assessment and verification:** *The applicant shall provide a declaration of compliance with the mandatory requirements of this criterion, supported by site data in mg/Nm<sup>3</sup> and expressed as an annual average value calculated from daily average values. The data shall have been generated via continuous or periodic monitoring according to **relevant EN or ISO standards**. In cases of periodic monitoring, at least three samples shall be taken during stable running of the kiln for production runs of the EU Ecolabel product(s).*

*The higher mandatory threshold for SOx emissions can only be applied if the applicant submits a test report of the raw material mix demonstrating that the S content is higher than 0.25% by weight (as S).*

*To convert exhaust gas monitoring results from mg/Nm<sup>3</sup> into mg/m<sup>2</sup> of ceramic tile of mg/kg of ceramic or fired clay product, it is necessary to multiply by the specific gas flow volume (Nm<sup>3</sup>/m<sup>2</sup> or kg product). One Nm<sup>3</sup> refers to one m<sup>3</sup> of dry gas under standard conditions of 273K, 101.3 kPa and 18% O<sub>2</sub> content.*

*For continuous production campaigns, data should be representative of a 12 month period. For shorter production campaigns, the actual production period(s) shall be stated and site data should represent at least 80% of the production campaign.*

*In case it is not possible to provide specific data for a production line or product, the applicant shall refer to data for the entire plant.*

#### 4.5. — Waste water management

Process wastewater from the production of ceramic **products** shall **be treated in line with one of the following options:**

- **Option 1:** be treated onsite to remove suspended solids, with treated wastewater being returned to the production process as part of a zero liquid discharge system; or



- **Option 2:** be treated onsite to remove suspended solids (or not treated at all) prior to wastewater being sent to a third-party operated treatment works; or
- **Option 3:** be treated onsite to remove suspended solids prior to wastewater being discharged to local watercourses.

In cases where options 2 or 3 **above** apply, the applicant or the third party wastewater treatment plant operator, as appropriate, must demonstrate compliance with the following limits for final treated effluent **that is discharged to local watercourses.**

Parameter	Limit	Test methods
Suspended solids	40 mg/l	ISO 5667-17
Cadmium	0,015 mg/l	ISO 8288
Lead	0,15 mg/l	ISO 8288

***Assessment and verification:** The applicant shall provide a declaration of compliance, specifying which option applies to the production site.*

*In cases where a zero liquid discharge system is in place for recycling process wastewater, they shall provide a brief description of the system and its main operating parameters.*

*In cases where the treated or untreated wastewater is sent to a third party operated treatment plant, the operator of the plant shall declare the average concentrations of suspended solids, cadmium and lead in the final treated effluent and provide test reports based on weekly analysis of the discharged wastewater according to the standard test methods defined above or equivalent in-house laboratory methods. Less frequent testing may be permitted in cases where the operating permit **allows.***

*In cases where process wastewater is treated onsite and effluent is discharged to the local watercourse, the applicant shall declare the average concentrations of suspended solids, cadmium and lead in the final treated effluent and provide test reports based on weekly analysis of the discharged wastewater according to the standard test methods defined above or equivalent in-house laboratory methods. Less frequent testing may be permitted in cases where the operating permit **allows.***

#### **4.6. — Process waste reuse**

**The applicant shall complete an inventory of process waste production for the ceramic plant. The inventory shall detail the type and quantity of process waste\* produced.**

**The process waste inventory shall cover at least a 12 month period prior to the date of award of the EU Ecolabel license and, during that same period, the total product output shall be estimated both in terms of mass (kg or tonne) and surface area (m<sup>2</sup>).**

At least 90% by mass of the process waste generated in ceramic tile production shall be reincorporated into the ceramic production process onsite, be reincorporated into ceramic production processes offsite or be reused in other production processes.

\*Process waste shall be considered as sludge/dry solids from grinding, body preparation and glaze preparation, reject/broken material from shaping, drying, firing, rectification and surface finishing operations and residues from exhaust gas abatement systems such as separated dust/ashes, gas scrubbing residues and peelings from cascade adsorber bed materials.

Up to 10 points shall be awarded in proportion to how much the reuse rates of process waste are increased towards the environmental excellence threshold of 100% reuse (from 0 points for 90% process waste reuse, up to 10 points for 100% process waste reuse).

**Assessment and verification:** *The applicant shall provide a declaration of compliance with the mandatory requirement of this criterion, supported by an estimation of total process waste (in kg or t) for the most recent calendar year or 12 month period.*

*Details about the destination of these process wastes shall also be provided with clarifications about whether it is internal reuse in ceramic production, external reuse in ceramic production, external reuse in another process or sent to landfill. For any external reuse or landfill disposal, shipment notes shall be presented.*

*In case it is not possible to provide specific data for a production line or product, the applicant shall refer to data for the entire plant.*

#### **4.7. — Glazes and inks**

In cases where ceramic tiles are glazed or decorated, the glaze formulation or ink shall contain less than 0.10% wt. Pb and less than 0.10% wt. Cd.

**Assessment and verification:**

*The applicant shall provide a declaration of compliance with the mandatory requirement of this criterion, supported by a relevant declaration or safety data sheet from the glaze or ink supplier.*

## 5. PRECAST CONCRETE PRODUCT CRITERIA

### Scoring system

The EU Ecolabel may be awarded both to the cement placed on the market by cement producers and to precast concrete products (made by mixing cement with aggregates and water) from precast concrete producers.

In cases where the applicant is not the cement producer and the cement producer is not covered by an EU Ecolabel license, the applicant shall declare the cement(s) used to produce the EU Ecolabel precast concrete product(s), supported by delivery invoices dating no more than 1 year prior to the application date.

The scoring system for each case and the minimum number of points necessary is presented in the table below.

	Portland cement	Alternative cement	Precast concrete products
1.3. VOC emissions	n/a	n/a	5 points
1.7. Environmental Management System (for Portland cement plant)	0, 3 or 5 points	n/a	n/a
1.7. Environmental Management System (for precast concrete plant)	n/a	n/a	0, 3 or 5 points
5.1. Clinker factor of cement	Up to 15 points	Up to 15 points	Up to 15 points
5.2. Specific CO <sub>2</sub> emissions from cement clinker / alternative cement production	Up to 20 points	Up to 20 points	Up to 20 points
5.3. Emissions of dust, NO <sub>x</sub> and SO <sub>x</sub> to air	Up to 15 points	n/a	Up to 15 points
5.4. Concrete recovery and responsible sourcing of raw materials	n/a	n/a	Up to 20 points
5.5. Energy consumption at the precast concrete plant	n/a	n/a	Up to 20 points
5.6. Environmentally innovative precast concrete product designs	n/a	n/a	Up to 10 points
<b>Total maximum points available</b>	<b>55</b>	<b>35</b>	<b>100+10</b>
<b>Minimum points required for EU Ecolabel</b>	<b>30</b>	<b>20</b>	<b>55</b>

### 5.1 — Clinker factor of cement

#### *For Portland cements*

The clinker factor of any Portland cement used shall not exceed the value of 0.90.

A clinker factor or at least the relevant EN 197-1 class (which can be used as a proxy for the clinker factor according to the table below), shall be reported by the applicant or the supplier of the cement.

EN 197-1 Class	Factor assumed	EN 197-1 Class	Factor assumed
CEM I	0.96	CEM II/A-L	0.83
CEM II/A-S	0.83	CEM II/B-L	0.68
CEM II/B-S	0.68	CEM II/A-LL	0.83
CEM II/A-D	0.88	CEM II/B-LL	0.68
CEM II/A-P	0.83	CEM II/A-M	0.80
CEM II/B-P	0.68	CEM II/B-M	0.68
CEM II/A-Q	0.83	CEM III/A	0.47
CEM II/B-Q	0.68	CEM III/B	0.25
CEM II/A-V	0.83	CEM III/C	0.09
CEM II/B-V	0.68	CEM IV/A	0.73
CEM II/A-W	0.83	CEM IV/B	0.52
CEM II/B-W	0.68	CEM V/A	0.72
CEM II/A-T	0.83	CEM V/B	0.57
CEM II/B-T	0.68		

Up to 15 points can be awarded to applicants in proportion to how much the clinker factor of the cement is reduced towards the threshold for environmental excellence of 0.60 (from 0 points for clinker factor 0.90, up to 15 points for clinker factor  $\leq 0.60$ ).

**For alternative cements**

The clinker factor of any alternative cement used shall not exceed the value of 0.30.

Up to 15 points can be awarded to applicants in proportion to how much the clinker factor of the cement is reduced towards the threshold for environmental excellence of 0.00 (from 0 points for clinker factor 0.30, up to 15 points for clinker factor 0.00).

**Assessment and verification:** The applicant shall provide a declaration of the specific cement clinker factor or, in the case of Portland cement(s), the EN 197-1 class of the cement(s) supplied.

In cases where the applicant is not the cement producer, and the cement producer is not covered by an EU Ecolabel license, the applicant shall provide a relevant declaration from the cement supplier regarding the clinker factor.

In cases where more than one cement is used in the concrete product(s) (e.g. in dual layered terrazzo tile products), the applicant shall calculate the points that would apply to each cement as if it was the only cement used, then calculate a weighted average points total based on the relative use of each cement in the concrete production line.

## 5.2 — Specific CO<sub>2</sub> emissions from cement clinker / alternative cement production

The CO<sub>2</sub> emissions associated with the production of Portland cement clinker or alternative cements shall not exceed the relevant mandatory limits defined in the table below when calculated using the relevant calculation method, also defined in the table below.

Product type	Mandatory limit	Threshold of environmental excellence	CO <sub>2</sub> calculation method
Grey Portland cement clinker	795 kgCO <sub>2</sub> /t clinker	659 kgCO <sub>2</sub> /t clinker	Net-CO <sub>2</sub> emissions for GNR database*
White Portland cement clinker	1230 kgCO <sub>2</sub> /t clinker	835 kgCO <sub>2</sub> /t clinker	Net-CO <sub>2</sub> emissions for GNR database*
Alternative cements**	636 kgCO <sub>2</sub> /t cement	527 kgCO <sub>2</sub> /t cement	ISO 14064 carbon footprint for A1-A3 life cycle stages

\*The GNR (Getting the Numbers Right) database is an initiative managed by the Global Cement and Concrete Association. Further information can be found at: <https://www.cement-co2-protocol.org/en/>

\*\*Alternative cements are considered as any cement not meeting the compositional requirements of EN 197-1, including cements with very low Portland cement clinker contents as well as alkali-activated cements and geopolymers, which may contain no Portland cement clinker at all.

Up to 20 points can be awarded in proportion to how much the CO<sub>2</sub> emissions are reduced towards the relevant threshold of environmental excellence in the table above (e.g. for grey Portland cement clinker: from 0 points for 795 kgCO<sub>2</sub>/t clinker, up to 20 points for 659 kgCO<sub>2</sub>/t clinker).

**Assessment and verification:** The applicant shall provide a declaration of compliance with the mandatory requirement of this criterion, supported by a statement of the calculated specific CO<sub>2</sub> emission in accordance with the relevant methodology defined in the table above. Reported results should be those submitted to most recent annual version of the GNR database that is available to the public at the data of application for the EU Ecolabel license.

In cases where the net-CO<sub>2</sub> emissions are calculated according to the GNR methodology, these shall follow the same methodology that was valid in 2016 or any more recent modifications approved by the Global Cement and Concrete Association.

In cases where an alternative cement is used, the applicant shall provide a copy of the carbon footprint analysis, which shall be in accordance with ISO 14064 and have been verified by an accredited third party. The footprint analysis must cover production of all of the main raw materials used and all chemical activators for life cycle stages A1-A3. In the absence of specific data from material suppliers, the generic emission factors from a life cycle inventory database should be used.

*In cases where the applicant is not the cement producer, and the cement producer is not covered by an EU Ecolabel license, the applicant shall provide a relevant declaration from the cement supplier regarding specific CO<sub>2</sub> emissions.*

*In cases where more than one cement is used in the production of EU Ecolabel certified concrete products (e.g. dual layered terrazzo tiles), the applicant shall calculate the points that would apply to each cement as if it was the only cement used, then calculate a weighted average points total based on the relative use of each cement in the EU Ecolabel concrete production line.*

### 5.3 — Emissions of dust, NO<sub>x</sub> and SO<sub>x</sub> to air

*This criterion applies to Portland cements but not to alternative cements.*

*The specific dust, NO<sub>x</sub> and SO<sub>x</sub> emissions to air from the cement kiln and associated with the production of Portland cement clinker shall not exceed the relevant mandatory limits defined in the table below:*

Parameter	Mandatory specific emission limit (indicative exhaust gas concentration)*	Threshold of environmental excellence (indicative exhaust gas conc.)*	Test method	Points available
Dust	≤ 34.5 g/t clinker (15mg/Nm <sup>3</sup> )*	≤ 11.5 g/t clinker (5mg/Nm <sup>3</sup> )*	EN 13284	Up to 5
NO <sub>x</sub> (as NO <sub>2</sub> )	≤ 1472 g/t clinker (640 mg/Nm <sup>3</sup> )*	≤ 920 g/t clinker (400 mg/Nm <sup>3</sup> )*	EN 14791	Up to 5
SO <sub>x</sub> (as SO <sub>2</sub> )	≤ 460 g/t clinker (200mg/Nm <sup>3</sup> )*	≤ 130 g/t clinker (50mg/Nm <sup>3</sup> )*	EN 14792	Up to 5

\* g/t clinker limits were translated from mg/Nm<sup>3</sup> data by multiplying by a factor of 2.3 Nm<sup>3</sup>/t clinker

Up to 15 points can be awarded in proportion to how much the actual specific emissions (expressed as g/t clinker) of dust, NO<sub>x</sub> and SO<sub>x</sub> are reduced towards the relevant thresholds for environmental excellence in the table above (e.g. 0 points for 34.5 g/t clinker dust emissions, 5 points for 11.5 g/t clinker dust emissions).

**Assessment and verification:** *The applicant shall provide a declaration of compliance with the mandatory requirements of this criterion, supported by site data for emissions from the cement kiln, in mg/Nm<sup>3</sup> and expressed as an annual average value calculated from daily average values. The site data shall have been generated via continuous monitoring according to relevant EN or ISO standards.*

*To convert exhaust gas monitoring results from mg/Nm<sup>3</sup> into g/t of clinker, it is necessary to multiply by the specific kiln gas flow volume (Nm<sup>3</sup>/t clinker). Typical specific gas flow volumes for cement kilns range from 1700 to 2500 Nm<sup>3</sup>/t clinker. One Nm<sup>3</sup> refers to one m<sup>3</sup> of dry gas under standard conditions of 273K, 101.3 kPa and 10% O<sub>2</sub> content.*

*For continuous production campaigns, data should be representative of a 12 month period. For shorter production campaigns, the actual production period(s) shall be stated and site data should represent at least 80% of the production campaign.*

*In case it is not possible to provide specific data for a production line or product, the applicant shall refer to data for the entire plant.*

*In cases where the applicant is not the cement producer, and the cement producer is not covered by an EU Ecolabel license, the applicant shall provide a relevant declaration from the cement supplier regarding emissions of dust, NO<sub>x</sub> and SO<sub>x</sub> to air.*

*In cases where more than one cement is used in the production of EU Ecolabel certified concrete products (e.g. dual layered terrazzo tiles), the applicant shall calculate the points that would apply to each cement as if it was the only cement used, then calculate a weighted average points total based on the relative use of each cement in the EU Ecolabel concrete production line.*

#### **5.4 — Concrete recovery and responsible sourcing of raw materials**

The applicant shall assess and document the regional availability of virgin material, recycled material from wastes produced by different production processes and secondary material from by-products of different production processes. The approximate transport distances of the documented material sources shall be stated.

The applicant shall have procedures in place for any batches of returned or rejected concrete in which all returned/rejected material is either:

- Recycled directly into new concrete batches which are cast prior to the returned/rejected concrete hardening; or
- Recycled as aggregate in new batches after returned/rejected concrete hardening; or
- Recycled offsite either prior to or after hardening as part of a contractual arrangement with a third party.

A total of 20 points may be granted in relation to sourcing of raw materials as follows:

- Up to 12 points shall be awarded in proportion to the incorporation of recycled/secondary materials into the precast concrete product up to the threshold of environmental excellence of 24% w/w content (from 0 points for 0% w/w, up to 12 points for 24% w/w recycled/secondary material content).
- Up to 4 points can be awarded in proportion to the fraction of aggregates used in the product that are certified as responsibly sourced by an appropriate third party certification scheme (from 0 points for 0% certified aggregates, up to 4 points for 100% of aggregates being certified).

- 4 points shall be awarded if the cement used in the product is certified as responsibly sourced by an appropriate third party certification scheme.

**Assessment and verification:** *The applicant shall provide a declaration of compliance with the mandatory requirements of this criterion, supported by documentation stating the identification of potential sources virgin, recycled and secondary materials. Alternatively, compliance with the mandatory aspects of this criterion can be demonstrated via a silver, gold or platinum certificate awarded by the Concrete Sustainability Council (CSC) to the concrete producer in accordance with version 2.0 of the CSC technical manual.*

*Recycled or secondary materials shall only be counted as contributing towards the content of recycled/secondary material if they are obtained from sources that are  $\leq$  2.5 times distant from the precast concrete production site than the main virgin materials used (e.g. coarse and fine aggregates and supplementary cementitious materials). The incorporation of dust and rejects of precast concrete products into new product shall not be considered as recycled content if it is going back into the same process that generated it.*

*A monthly balance sheet of recycled/secondary materials and CSC certified materials shall be presented based on the 12 months of production prior to submission of the application for the EU Ecolabel. The balance sheet shall provide the quantities of ingoing recycled/secondary and CSC certified materials (justified by delivery notes and invoices) and outgoing recycled/secondary materials and CSC certified materials in all sold or ready for sale precast concrete production with recycled/secondary material or CSC certified content claims (justified by product quantities and % claims).*

*Due to the batch nature of the precast concrete production process, recycled/secondary material content claims and claims on the use of CSC certified cement or aggregates shall be based on mix compositions used at the batch level, allocation of recycled/secondary/CSC certified materials shall not be permitted.*

*In cases where production data is only available in  $m^3$  but needs to be reported in kg, or vice versa, the value should be converted using a fixed bulk density factor for the relevant material.*

#### **5.5 — Energy consumption at the precast concrete plant**

The applicant shall have established a program to systematically monitor, record and reduce specific energy consumption in the precast concrete plant to optimal levels. The program shall report energy consumption as a function of energy source (e.g. electricity and diesel) and purpose (e.g. use of onsite buildings, lighting, cutting equipment operation, pumps and vehicle operation). The program shall report on



energy consumption for the site both on an absolute basis (in units of kWh or MJ) and in specific production (in units of kWh or MJ per m<sup>3</sup>, m<sup>2</sup> or t of material sold/produced and ready for sale) for a given calendar year. A plan to reduce specific energy consumption shall describe measures already taken or planned to be taken (e.g. more efficient use of existing equipment, investment in more efficient equipment, improved transportation and logistics etc.).

A total of 20 points may be granted as follows:

- Up to 10 points shall be awarded in proportion to how much of the energy consumed (fuel plus electricity) is from renewable sources (from 0 points for 0% renewable energy up to 10 points for 100% renewable energy).
- Up to 5 points shall be awarded depending on the manner in which any renewable electricity is purchased as follows: via private energy service agreements for on-site or near-site renewables (5 points); corporate power purchase agreements for on-site or near-site renewables (5 points); corporate power purchase agreements for grid-connected or remote grid renewables (4 points); independent green energy certifications (3 points); purchase of renewable energy certificates/guarantees of origin certificates (2 points) or green tariff from utility supplier (1 point).
- 5 points shall be awarded where a carbon footprint analysis has been carried out for the product in accordance with ISO 14064.

**Assessment and verification:** *The applicant shall provide an energy inventory for precast concrete plant for a period of at least 12 months prior to the date of award of the EU Ecolabel license and shall commit to maintaining such an inventory during the validity period of the EU Ecolabel license. The energy inventory shall distinguish the different types of fuel consumed, highlighting any renewable fuels or renewable content of mixed fuels. As a minimum, the specific-energy consumption reduction plan must define the baseline situation with energy consumption at the precast concrete plant when the plan was established, identify and clearly quantify the different sources of energy consumption at the plant, identify and justify actions to reduce specific energy consumption and to report results on a yearly basis.*

*The applicant shall provide details of the electricity purchasing agreement in place and highlight the share of renewables that applies to the electricity being purchased. If necessary, a declaration from the electricity provider shall clarify (i) the share of renewables in the electricity supplied, (ii) the nature of the purchasing agreement in place (i.e. private energy service agreement, corporate power purchase agreement, independent green energy certified or green tariff) and (iii) whether the purchased electricity is from on-site or near-site renewables.*

*In cases where guarantee of origin certificates are purchased by the applicant to increase the renewables share, the applicant shall provide appropriate documentation*

*to ensure that the guarantee of origin certificates have been purchased in accordance with the principles and rules of operation of the European Energy Certificate System.*

*In cases where points are claimed for a carbon footprint analysis, the applicant shall provide a copy of the analysis, which shall be in accordance with ISO 14064 and have been verified by an accredited third party. The footprint analysis must cover all manufacturing processes directly related to cement production, onsite and offsite transportation of raw materials to the precast concrete plant, precast concrete production, emissions relating to administrative processes (e.g. operation of onsite buildings) and transport of the sold product to the precast concrete plant gate or local transportation hub (e.g. train station or port).*

### **5.6 — Environmentally innovative precast concrete product designs (optional)**

Precast concrete products that bring direct or indirect environmental benefits via one or more of the design features described below shall be awarded points in accordance with the design features listed below. In no case can the total number of points granted under this criterion exceed 10 points.

A total of up to 10 points may be granted as follows:

- Up to 10 points shall be awarded in proportion to how the precast or pervious concrete floor tile, floor slab or paver product exceeds a minimum infiltration rate of 400 mm/h and approaches the threshold of environmental excellence of  $\geq 2000$  mm/h (from 0 points for 400 mm/h, up to 10 points for 2000 mm/h).
- Up to 10 points shall be awarded in proportion to how much the precast concrete masonry unit (brick or block) product exceeds a minimum void space of 20% and approaches the threshold of environmental excellence of  $\geq 80\%$  void space (from 0 points for 20% void space, up to 10 points for  $\geq 80\%$  void space).
- 10 points shall be awarded to precast concrete paving units that are designed with void spaces to be filled with topsoil/sand/gravel and be seeded with grass and that can fit into permeable paving design solutions (commonly referred to a grass or turf pavers).

*Assessment and verification: The applicant shall provide a declaration stating whether or not this criterion is relevant to the product(s) subject to the EU Ecolabel license application.*

*In cases where points are claimed due to infiltration rates of precast or pervious concrete floor tile, floor slab or paver products, the applicant shall provide test reports according to BS 7533-13, BS DD 229:1996 or similar standards.*

*In cases where the material efficient precast concrete masonry unit (brick or block) criterion is relevant, the applicant shall provide a declaration of the % void content of*

*the form by providing the dimensions of the product form in such detail that the total volume and the void volume can be calculated.*

*In cases where the grass/turf open paver criterion is relevant, the applicant shall provide technical drawings of the concrete forms, images of real-life installations complete with vegetated surfaces and detailed installation instructions about how the products should be filled and seeded.*

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