COMMISSION DECISION

of XXXX

establishing the ecological criteria for the award of the
EU Ecolabel for
Wood, wood-based, cork, cork-based, bamboo and bamboo-based wood, cork and bamboo
based floor coverings

(Text with EEA relevance)
COMMISSION DECISION

of XXX

establishing the ecological criteria for the award of the

EU Ecolabel for
Wood, wood-based, cork, cork-based, bamboo and bamboo-based wood, cork and bamboo based floor coverings

(TEXT WITH EEA RELEVANCE)

THE EUROPEAN COMMISSION,
Having regard to the Treaty on the Functioning of the European Union,
Having regard to Regulation (EC) No 66/2010 of the European Parliament and of the Council of 25 November 2009 on the EU Ecolabel1, and in particular Article 8(2) thereof,
After consulting the European Union Eco-labelling Board,
Whereas:
(1) Under Regulation (EC) No 66/2010, the EU Ecolabel may be awarded to products which have a reduced environmental impact during their entire life cycle.
(2) Regulation (EC) No 66/2010 provides that specific EU Ecolabel criteria are to be established according to product groups.
(3) In order to better reflect the range of Wood, wood-based, cork, cork-based, bamboo and bamboo-based wood, cork and bamboo based floor coverings on the market, the state of art for these products and to take into account the innovation of the last few years, it is considered appropriate to modify the name and scope of the product group and to establish a revised set of ecological criteria.
(4) The revised ecological criteria aim at using materials produced in a more sustainable way (considering a life cycle analysis approach), limiting the energy consumed and the use of hazardous compounds, the levels of hazardous residues, the contribution of the floor coverings to indoor air pollution and promoting a durable and high-quality products. The revised criteria, along with the related assessment and verification requirements should be valid for six years ten years from the data of adoption of this Decision, taking into account the innovation cycle for this product group.
(5) Decisions 2010/18/EC and 2013/295/EU (prolongation of the validity of the criteria) should therefore be replaced
(6) It is appropriate to allow a transitional period for producers whose products have been awarded the EU Ecolabel for wooden floor coverings on the basis of the ecological criteria set out in Decision 2010/18/EC, so that they have sufficient time to adapt their product to comply with the revised criteria requirements. Producers should also be allowed to submit applications based on the ecological criteria set out in Decision 2010/18/EC for a sufficient period of time.

The measures provided for in this Decision are in accordance with the opinion of the Committee established by Article 16 of Regulation (EC) No 66/2010,

HAS ADOPTED THIS DECISION:

Article 1

The product group of ‘wood, wood-based, cork, cork-based, bamboo and bamboo-based floor coverings’ shall comprise indoor floor coverings, including wood floorings, laminate floorings, cork floor coverings and bamboo floorings which are made, for more than 80 % in mass (in the final product), from wood, wood-based, cork, cork-based, bamboo and bamboo-based and/or plant-based materials or fibres. Synthetic fibres are not permitted in any of the composing layers.

It does not apply to wall coverings, coverings for external use or with a structural function. It does not apply for levelling compounds.

Assessment and verification

The applicant shall provide the following information about the floor covering:

- brand/trade name
- a description of the product and the raw materials or substances involved: percentage composition of the raw materials or substances in the flooring if possible in mass including any additive and surface treatment, when relevant.
- a description of the manufacturing procedure. Suppliers of raw materials or substances shall be described with the name of the business, production site, contact details and description of the production step(s) they carried out or are part of.

The product data sheet, environmental product declaration (EDP) or equivalent document can be accepted for the compliance of this criterion if it includes the listed information is included.

Article 2

For the purpose of this Decision, the following definitions shall apply:

1. "Wood flooring" means, in accordance with prEN 13756, an assembly of wood elements pre-assembled boards or parquet panels which constitute the wearing surface of the floor. A wood floor covering can be either unfinished or be prefinished in a factory. Unfinished wood flooring, once installed, is sanded and then finished on site.

2. "Laminate flooring" means in accordance with EN 13329 rigid floor covering with a surface layer consisting of one or more thin sheets of a fibrous material (usually paper), impregnated with aminoplastic thermosetting resins (usually melamine), pressed or bonded on a substrate, normally finished with a backer.

3. "Cork floor coverings" means floor coverings made of granulated cork mixed with a binder, and then cured or several layers of cork (agglomerated/ veneer) that can be pressed together with glue and is intended to be used with a finish.

The cork floor coverings can be divided into natural cork tiles (the main component of which is agglomerated composition of cork, intended to be used with a finish) and in engineered cork panels (consisting of several layers including a fibreboard the main component of which is agglomerated cork or has cork as technical solution, intended to be used with a finishing wear layer).

4. "Bamboo floor coverings" means floor coverings made of bamboo in solid pieces or in agglomerates mixed with a binder.

---

2 in accordance with prEN 13756, wood flooring - terminology
3 in accordance with EN 13329, laminate flooring - specifications, requirements and test methods
4 in accordance with EN 12466, Resilient floor coverings - vocabulary
5. "Volatile organic compound" (VOC) means all volatile organic compounds eluting between and including n-hexane and n-hexadecane on a gas chromatographic column as specified in 8.2.2 of the FprCEN/TS 16516:2013[^3]. Any organic compound having an initial boiling point of less than or equal to 250 °C measured at a standard pressure of 101.3 kPa as defined in Directive 2004/42/EC of the European Parliament and of the Council[^4] and which, in a capillary column, are eluting up to and including tetradecane (C_{14}H_{28});

6. "Semi volatile organic compound" (SVOC) means all organic compounds which, in a capillary column as specified in 8.2.2 of the FprCEN/TS 16516:2013, are eluting with a retention range between n-hexadecane (excluded) and n-docosane (included[^5]);

any organic compound having a boiling point of greater than 250 °C and less than 370 °C measured at a standard pressure of 101.3 kPa and which, in a capillary column are eluting with a retention range after n-tetradecane (C_{14}H_{28}) and including n-docosane (C_{22}H_{46});

7. "R value" means the sum of all R, values where R, value is the ratio C, / LCI,. where C, is the chamber mass concentration of compound i, and LCI, is the LCI (lowest concentration of interest) value of compound i defined under the European Collaborative Action "urban air", indoor environment and human exposure[^6]

8. "Impurity" means another term added to the EU Ecolabel criteria set: Impurity refers to residues from primary production which may be found in the finished product at concentrations below 100 ppm (0.01% by weight, 100 mg/kg), but not substances that have been added to a raw material or the product actively and for a particular purpose, irrespective of quantity. Impurities of over 1% concentration in the primary product are, however, regarded as constituent substances. Constituents known to be degradation products of the constituent substances are also themselves considered to be constituent substances.

9. "Raw material" means a basic material that is used to produce goods, finished products, energy or intermediate materials which are feedstock for future finished products. The term connotes these materials that are bottlenecks assets and are highly important with regards to producing other products. These materials are usually materials unprocessed or minimally processed or unprocessed and that are internationally marketed in substantial volumes.

10. "Substance" means a chemical element and its compounds in the natural state or obtained by any manufacturing process, including any additive necessary to preserve its stability and any impurity deriving from the process used, but excluding any solvent which may be separated without affecting the stability of the substance or changing its composition[^7]

11. "Mixture" means a mixture or solution composed of two or more substances as defined in Article 3(2) or Regulation (EC) No 1907/2006[^8]

12. "Biocidal product" means, in accordance with Article 3(1)(a) of Regulation (EU) No 528/2012[^9], any substance or mixture, in the form in which it is supplied to the user, consisting of, containing or generating one or more active substances, with the intention of destroying, deterring, rendering harmless, preventing the action of, or otherwise exerting a controlling effect on, any harmful organism by any means other than mere physical or mechanical action.

[^3]: The measurement is carried out using a capillary column coated with 5% phenyl/95% methyl-polydimethylsiloxane. This definition corresponds to volatile organic compounds with a boiling point in the range of approximately 68 °C to 287 °C.


[^5]: The measurement is carried out using a capillary column coated with 5% phenyl/95% methyl-polydimethylsiloxane. This definition corresponds to volatile organic compounds with a boiling point approximately higher than 287 °C.


- any substance or mixture, generated from substances or mixtures which do not themselves fall under the first indent, to be used with the intention of destroying, deterring, rendering harmless, preventing the action of, or otherwise exerting a controlling effect on, any harmful organism by any means other than mere physical or mechanical action.

A treated article that has a primary biocidal function shall be considered a biocidal product.

13. "Preservative" means in accordance with Annex V of Regulation (EU) No 528/20122 products used for the preservation of wood, from and including the saw-mill stage, or wood products by the control of wood-destroying or wood-disfiguring organisms, including insects. This definition includes both preventive and curative products. The definition shall also apply to products used for the preservation of cork and/or bamboo.

14. "Active substance" means, in accordance with Article 3(1)(c) of Regulation (EU) No 528/20121, a substance or a micro-organism that has an action on or against harmful organisms.

15. "Manufacturer" means any natural or legal person established within or without the Community who manufactures a substance intended to be put within the Community market.

16. "Supplier of a substance or mixture" means any manufacturer, downstream user or distributor placing on the market a substance, on its own or in a mixture, or a mixture.

17. "Synthetic fibres" means acrylic, elastane, polyamide, polyester and polypropylene fibres.

18. "E1" means a classification for formaldehyde-containing panels adopted a formaldehyde emission threshold limit adopted across EU Member States based on formaldehyde emissions. According to the definition provided in Annex B to EN 13986, a wood-based panel shall be classified as E1 if emissions are equivalent to steady state concentrations of less than or equal to The threshold limit is considered as being equivalent to steady state concentrations of 0.1ppm (0.124 mg/m³) of formaldehyde after 28 days of a chamber test carried out according to EN 717-1 or that the formaldehyde content is determined to be less than or equal to. The E1 limit is also considered as equivalent to a formaldehyde content of 8mg/100 g oven dry board when measured according to EN 120 or that formaldehyde emission rates are less than or equal to and as equivalent to overall emission rates of 3.5-8.0 mg/m²h according to EN 717-2 or less than or equal to 5.0-12.0 mg/m²h according to the same method but; within 3 days after production.

19. "Renewable energy" (or renewable energy sources (RES)) 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 biogases14;

---

20. "Guarantee of origin" means an electronic document which has the sole function of providing proof to a final customer that a given share or quantity of energy was produced from renewable sources as required by Article 3(6) of Directive 2003/54/EC.

21. "Final product" means the ultimate result of a series of changes, processes and operations leading to an end product that is ready to be installed in the end users place or facilities.

Article 3

In order to be awarded the EU Ecolabel under Regulation (EC) No 66/2010, a product shall fall within the product group "wood, wood-based, cork, cork-based, bamboo and bamboo-based wood, cork and bamboo based floor coverings" as defined in Article 1 of this Decision and shall comply with the ecological criteria as well as the related assessment and verification requirements set out in the Annex to this Decision.

Article 4

The ecological criteria for the product group "wood, wood-based, cork, cork-based, bamboo and bamboo-based wood, cork and bamboo based floor coverings", and the related assessment and verification requirements shall be valid for six years ten years from the date of adoption of this Decision.

Article 5

For administrative purposes, the code number assigned to the product group "wood, wood-based, cork, cork-based, bamboo and bamboo-based wood, cork and bamboo based floor coverings" shall be "8".

Article 6

Decisions 2010/18/EC and 2013/295/EU (prolongation of the validity of the criteria) are repealed.

Article 7

This Decision is addressed to the Member States.

Done at Brussels,

For the Commission

xxxxxx
Member of the Commission

---

14 OJ L140, 05.06.2009, p.27
15 OJ L176, 15.7.2003, p. 37–56
EN

ANNEX

FRAMEWORK

EU ECOLABEL CRITERIA

Criteria for awarding the EU Ecolabel to wood, wood-based, cork, cork-based, bamboo and bamboo-based wood, cork and bamboo based floor covering products

1. Product description
2. Certified wood Wood, wood-based, cork, cork-based, bamboo and bamboo based materials
3. General requirements for hazardous substances and mixtures
4. Specific substance requirements
5. Energy consumption during the production process
6. VOC emissions from the floor coverings
7. Formaldehyde emissions from the floor coverings
8. Fitness for use
9. Reparability and extended guarantee
10. Consumer information
11. Information appearing on the EU Ecolabel

Appendix I Guidance on the calculation of the quantity of VOC applied
Appendix II Guidance for calculating the energy use consumption in the production process
Appendix III List of standards
ASSESSMENT AND VERIFICATION REQUIREMENTS

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 their supplier(s), etc., as appropriate.

Competent bodies shall preferentially recognise attestations which are issued by bodies accredited according to the relevant harmonised standard for testing and calibration laboratories and verifications 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 site visits.

Changes in suppliers and production sites pertaining to EU Ecolabel licensed products shall be notified to competent bodies, together with supporting information to enable verification of continued compliance with the criteria.

As pre-requisite, the product must meet all respective legal requirements of the country (countries) in which the product is intended to be placed on the market. The applicant shall declare the product's compliance with this requirement.

The following information shall be provided to the competent body:

(i) The full formulation of the flooring indicating for each all raw material and substance indicating the trade name, chemical name, CAS no., and the quantity (in concentration)

(ii) Safety data sheets (SDS) for each raw material (substance or mixture) in accordance with REACH\textsuperscript{17}.

In exceptional cases, if the information is not available at substance level, the applicant can supply the information for a mixture.

If a supplier prefers not to disclose the substances of a mixture to the applicant, the information can be sent directly to the competent body by the supplier;

\textsuperscript{16} Chemical Abstract Service index number (CAS no). It is a unique numeric identifier, designates only one substance has no chemical significance, is a link to a wealth of information about a specific chemical substance.

\textsuperscript{17} OJ L 396, 30.12.2006, p. 53
1. Product description

Technical description of the floor covering including drawings that illustrate the parts or materials that form the final floor covering product, its dimensions and a description of the manufacturing process shall be provided to the competent body. This description shall come along with the bill of materials for the product that shall state the total weight of the product itself and how this is split between the different materials used.

Compliance with the scope of the product group as defined in Article 1 shall be demonstrated

Assessment and verification

The applicant shall provide a declaration of compliance supported by the following information about the floor covering:

- brand/trade name
- a description of the product including technical drawings that illustrate the parts or materials used in the final product
- the bill of materials: percentage composition of the raw materials, substances or mixtures in the final product in mass including any additive and surface treatment, when relevant.
- a description of the manufacturing process. Suppliers of raw materials or substances shall be described with the legal name, production site, contact details and description of the production step(s) they carried out or are part of.

The product data sheet, environmental product declaration (EDP) or equivalent document can be accepted for the compliance of this criterion if it includes the listed information is included.


This requirement is applied to wood, wood-based, cork, cork-based, bamboo, bamboo-based and plant-based materials weighting more than 1% of the finished product.

All wood, wood-based, cork, cork-based, bamboo, bamboo-based shall not originate from GMO species and be covered by chain of custody certificate issued by an independent third party certification scheme such as the Forest Stewardship Council (FSC), the Programme of the Endorsement of Forest Certification (PEFC) or equivalent.

All virgin wood, cork and bamboo shall be covered by valid sustainable forest management certificates issued by an independent third party certification scheme such as FSC, PEFC or equivalent.

Where a certification scheme allows the mixing of uncertified material with certified and/or recycled materials in a product or production line, a minimum of 70% of the wood, cork and/or bamboo shall be sustainable certified virgin materials and/or recycled material.

Uncertified material shall be covered by a verification system which ensures that it is legally sourced and meets any other requirement of the certification scheme with respect to uncertified material.

The certification bodies issuing forest and/or chain of custody certificates shall be accredited or recognised by that certification scheme.

Assessment and verification

The applicant shall provide a declaration of compliance supported by a valid, independently certified chain of custody certificate of the manufacturer for all wood, wood-based cork, cork-based, bamboo, bamboo-based and plant-based material used in the product or production line and demonstrate that...
no virgin material is sourced from GMO species. The applicant shall provide audited accounting documents that demonstrate that at least 70% of the materials originates from forests or areas managed according to Sustainable Forestry Management principles and/or from recycled sources that meet the requirements set out by the relevant independent chain of custody scheme. FSC, PEFC or equivalent schemes shall be accepted as independent third party certification.

If the product or production line includes uncertified material, proof shall be provided that the content of uncertified virgin material does not exceed 30% and is covered by a verification system which ensures that it is legally sourced and meets any other requirement of the certification scheme with respect to uncertified material.

### 3. General requirements for hazardous substances and mixtures in the product substance requirements.

The presence in the product and any component layers thereof, of substances that are identified according to Article 59 (1) of Regulation (EC) No 1907/2006 as substances of very high concern (SVHCs) or substances or mixtures that meet the criteria for Classification, Labelling and Packaging (CLP) according to Regulation (EC) No 1272/2008 for the hazards listed in Table 3.1, shall be restricted in accordance with criteria 3.a and 3.b. For the purpose of this criterion Candidate List SVHCs and CLP hazard classifications are grouped in Table 3.1 according to their hazardous properties, with criteria 2.1 and 2.2.

#### Table 3.1 Grouping of restricted hazards

<table>
<thead>
<tr>
<th>Group 1 Hazards – SVHC and CLP</th>
<th>Hazards that identify a substance as being within Group 1:</th>
</tr>
</thead>
<tbody>
<tr>
<td>- substances that appear on the Candidate List for SVHCs.</td>
<td></td>
</tr>
<tr>
<td>- carcinogenic, mutagenic and/or toxic to reproduction (CMR) category 1A or 1B CMR: H340, H350, H350i, H360, H360F, H360D, H360Fd, H360DF</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Group 2 Hazards – CLP</th>
<th>Hazards that identify a substance as being within Group 2:</th>
</tr>
</thead>
<tbody>
<tr>
<td>- category 2 CMR: H341, H351, H361f, H361d, H361df, H362</td>
<td></td>
</tr>
<tr>
<td>- category 1 and 2 acute toxicity toxins: H300, H310, H330, H304</td>
<td></td>
</tr>
<tr>
<td>- category 1 aspiration toxicity: H304</td>
<td></td>
</tr>
<tr>
<td>- category 1 specific target organ toxicity (STOT): H370, H372</td>
<td></td>
</tr>
<tr>
<td>- category 1 skin sensitiser H317</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Group 3 Hazards – CLP</th>
<th>Hazards that identify a substance as being within Group 3:</th>
</tr>
</thead>
<tbody>
<tr>
<td>- category 2, 3 and 4 aquatic toxicity toxins: H411, H412, H413</td>
<td></td>
</tr>
<tr>
<td>- category 3 acute toxicity toxins: H301, H311, H331, EUH070</td>
<td></td>
</tr>
<tr>
<td>- category 2 STOT: H371, H373</td>
<td></td>
</tr>
</tbody>
</table>

### 2.4 3.a Restriction of SVHCs

---


The product and any component parts thereof shall not contain SVHC, at concentrations in the final product greater than 0.10% (weight by weight).

No derogation from this requirement shall be given to Candidate List SVHCs present in the product or any component parts thereof at concentrations greater than 0.10% (weight by weight).

**Assessment and verification**

The applicant shall provide a declaration of compliance for the product supported, where relevant, by declarations from any supplier(s) regarding the non-presence of SVHCs at concentrations greater than 0.10% (weight by weight). Declarations shall be with reference to the latest version of the Candidate List published by ECHA.

The applicant shall compile declarations of the absence of SVHCs at or above the specified concentration limit for the product and any component parts used in the assembly of the product. Declarations shall be with reference to the latest version of the Candidate List published by ECHA 21.

### 2.2 3.b Restriction of CLP classified substances or mixtures used in the floor covering

Substances or mixtures used by the floor covering manufacturer or his suppliers during the preparation of raw materials, manufacturing, assembly or any other treatment of the floor covering shall not be classified with any of the CLP hazards listed in Table 3.1. Restricted substances or mixtures shall include adhesives, paints, primers, varnishes, stains, preservatives, resins, active substances of biocidal products (such as preservatives or biocidal products), fillers, waxes, oils, joint fillers, dyes, tuff and sealants.

However, the use of such restricted substances shall be permitted if one or more of the following conditions apply:

- that the restricted substance or mixture was used in quantities that amount to less than 0.10% of the total weight of the floor covering and/or
- that the restricted substance changes its properties upon processing (e.g. becomes no longer bioavailable or undergoes chemical reaction) so that the restricted CLP hazards no longer apply and that any unreacted residual content of the restricted substance is less than 0.10% of the total weight of the floor covering.

**Assessment and verification**

The applicant and/or his suppliers shall provide a declaration of compliance with criterion 3.b. 2.2 supported, where appropriate, by a list of relevant substances or mixtures used together with declarations about their hazard classification or non-classification, their added quantities and if appropriate, statements whether the substances change their properties upon processing so that the restricted CLP hazards no longer apply. If so, the quantities of any unreacted residual content of the restricted substance shall be provided.

The following information shall be provided in relation to the hazard classification or non-classification for each of the substances:

i. the substance's CAS, EC or list number (where available for mixtures)

ii. the physical form and state in which the substance or mixture is used

iii. harmonized CLP hazard classifications

iv. self-classification entries in ECHA's REACH registered substance database 22 (if no harmonized classification available).

v. mixture classifications according to the criteria laid down in the CLP regulation.

---


When considering self-classification entries in the REACH registered substance database, priority shall be given to entries from joint submissions.

Where a classification is recorded as 'data-lacking' or 'inconclusive', according to the REACH registered substance database, or where the substance has not yet been registered under the REACH system, toxicological data meeting the requirements in Annex VII to Regulation (EC) No 1907/2006\(^{23}\) shall be provided that are sufficient to support conclusive self-classification in accordance with Annex I to Regulation (EC) No 1272/2008\(^{24}\) and ECHA's supporting guidance. In the case of 'data lacking' or "inconclusive" database entries, self-classifications shall be verified with the following information sources being accepted:

i. Toxicological studies and hazard assessments by ECHA peer regulatory agencies\(^{25}\), Member State regulatory bodies or Intergovernmental bodies;

ii. A Safety Data Sheet (SDS) fully completed in accordance with Annex II to Regulation (EC) No 1907/2006\(^{26}\);

iii. A documented expert judgment provided by a professional toxicologist. This shall be based on a review of scientific literature and existing testing data, where necessary supported by results from new testing carried out by independent laboratories using methods approved by ECHA;

iv. An attestation, where appropriate based on expert judgment, issued by an accredited conformity assessment body that carries out hazard assessments according to the Globally Harmonized System (GHS) of the classification and labelling of chemicals, or CLP hazard classification systems.

Information on the hazardous properties of substances may, in accordance with Annex XI to Regulation (EC) No 1907/2006\(^{27}\), be generated by means other than tests, for instance through the use of alternative methods such as in vitro methods, by quantitative structure-activity models or by the use of grouping or read-across.

### 4. Specific substance requirements

#### 4 a) Contaminants in Elements and compounds in recycled wood, cork and bamboo

Any recycled fibres or chips used in the manufacture of panels included in the final floor covering product shall be tested in accordance with the European Panel Federation (EPF) standard for delivery conditions of recycled wood\(^{28}\) and comply with the limits for contaminants as listed in Table 34.1.

<table>
<thead>
<tr>
<th>Elements Contaminants</th>
<th>Limit values (mg/kg dry recycled material panel)</th>
<th>Elements and Compounds Contaminants</th>
<th>Limit values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arsenic (As)</td>
<td>25</td>
<td>Mercury (Hg)</td>
<td>25</td>
</tr>
<tr>
<td>Cadmium (Cd)</td>
<td>50</td>
<td>Fluorine (F)</td>
<td>100</td>
</tr>
<tr>
<td>Chromium (Cr)</td>
<td>25</td>
<td>Chlorine (Cl)</td>
<td>1000</td>
</tr>
</tbody>
</table>

\(^{23}\) OJ L396, 30.12.2006, p. 316  
\(^{26}\) OJ L396, 30.12.2006, p. 267  
\(^{27}\) OJ L396, 30.12.2006, p. 371  
<table>
<thead>
<tr>
<th>Copper (Cu)</th>
<th>40</th>
<th>Pentachlorophenol (PCP)</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead (Pb)</td>
<td>90</td>
<td>Tar oils (benzo(a)pyrene)</td>
<td>0.5</td>
</tr>
</tbody>
</table>

**Assessment and verification:**

The applicant shall provide:

- A declaration from the panel supplier and the manufacturer that no recycled wood, cork, bamboo or their fibres or chips were used in the panel, or the floor covering, or
- A declaration from the panel supplier and the manufacturer that all recycled wood, cork, bamboo or their fibres or chips used have been representatively tested in accordance with the 2002 "EPF standard conditions for the delivery of recycled wood" supported by test reports that demonstrate compliance of the recycled samples with the limits specified in Table 4.1
- A declaration from the manufacturer and the panel supplier that all recycled wood, cork, bamboo or their fibres or chips used have been representatively tested by equivalent standards that have equal or stricter limits than the 2002 "EPF standard conditions for the delivery of recycled wood", supported by appropriate test reports that demonstrate compliance of the recycled samples with the limits specified in Table 4.1

If it can be proved that the substances indicated have not been used in any previous preparation or treatment, the application of test to demonstrate compliance with this requirement can be avoided.

### 4.b) Biocidal products

The treatment of wood, cork and/or bamboo of the floor coverings with biocidal products (including preservatives) shall not be permitted.

Active substances contained in biocidal products exclusively used for in-can preservation of water-based mixtures such as adhesives or lacquers shall however be exempt from this requirement.

**Assessment and verification:**

The applicant shall provide a declaration of non-use of biocidal products or, if applicable, a declaration supported by SDS from the in-can water-based mixtures' suppliers stating what active substances contained in biocidal products have been used in the in-can water-based mixtures.

If it can be proved that the substances indicated have not been used in any previous preparation or treatment, the application of test to demonstrate compliance with this requirement can be avoided.

### 3.c) Flame retardants

The use of flame retardants shall not be permitted.

**Assessment and verification**

The applicant shall provide a declaration of non-use of flame retardants.

### 3.d) VOC content in surface treatment

Surface treatment chemicals used on wood, wood-based, cork, cork-based, bamboo or bamboo-based or plant-based materials shall either:

- Have a total VOC content of less than 5% by weight (in-can substance concentration), or
- Have a total VOC content greater than 5% by weight but be shown to be applied in quantities that amount to less than 2 kg/m² of treated surface area

The criterion relates to the total VOC in the surface treatment products with the chemical composition they have in wet form. If the products require dilution before use, the calculation is to be based on the content in the dilutive product.
This criterion does not apply to mixtures used for repairing (e.g., knots, checks, bark inclusions, dents, etc.) during the manufacturing process.

**Assessment and verification**

The applicant shall provide a declaration of compliance with this criterion supported by the SDS of any surface treatment substances or mixtures used on wood, wood-based, cork, cork-based, bamboo or/and bamboo-based materials, bamboo or/and plant-based materials. If the SDS states that the VOC content of the surface treatment substances or mixtures used is less than 5% by weight, then no further verification shall be necessary.

Should the VOC content information not be included in the SDS, the VOC content should be calculated from the list of substances in the surface treatment mixture chemicals. The concentration of each VOC ingredient should be stated as a percentage by weight. Confidential details from the manufacturer/s in the form of content declarations/formulations can be sent directly to the respective Competent Body.

Alternatively, if the VOC content is higher than 5% by weight, then the applicant shall provide a calculation demonstrating that the effective quantity of VOC applied per m² of the treated surface area of the floor covering is less than 2 g/m², in accordance with the guidance provided in Appendix I.

This criterion does not apply to mixtures used for repairing the knots during the manufacturing process.

Confidential details from the manufacturers in the form of content declarations/formulations can be sent directly to the respective competent body.

**4.d) VOCs content in other used substances and mixtures**

**VOCs content in substances and mixture used (in-can concentrations) apart from those used for surface treatment**

VOC content shall be less than:
- 3% by weight in in-can adhesives and/or resins used in manufacturing of the floor coverings,
- 1% by weight in other substances apart from in-can adhesives and/or resins and surface treatment (criterion 4.c) used in manufacturing of the floor coverings.

Free-formaldehyde of liquid aminoplast resins used in manufacturing the floor coverings should be less than 0.2% by weight.

In-can adhesives and/or resins used in manufacturing of the floor coverings should have:
- VOC content of less than 3% by weight,
- Free-formaldehyde* of less than 0.2% by weight.

Other substances apart from in-can adhesives and resins and surface treatment (criterion 3.d) used in manufacturing of the floor coverings should have VOC content less than 1% by weight.

The criterion relates to the total VOC in the substances with the chemical composition they have in wet form. If the mixtures require dilution prior to use, the calculation is to be based on the content in the diluted product.

This criterion does not apply to mixtures used for repairing the knots, repairing (e.g., knots, checks, bark inclusions, dents, etc.) during the manufacturing process.

**Assessment and verification**

The applicant shall provide a declaration of compliance with the criterion supported by the SDS of any in-can adhesive and/or resin or other substances used or an equivalent documentation that supports the declaration of compliance with this requirement, together with a complete recipe with designation of quantities and CAS numbers.
If the SDS states that the VOC content is less than 3% by weight of the in-can adhesive and/or resin used or less than 1% by weight of other substances used, then no further verification shall be necessary.

Should the VOC content information not be included in the SDS, the VOC content should be calculated from the list of substances. The concentration of each VOC ingredient should be stated as a percentage by weight.

The applicant shall provide test reports demonstrating that the free-formaldehyde content in the in-can adhesives and liquid aminoplast resins is less than 0.2% weight by weight in accordance with prEN ISO 11402 EN 1243

Confidential details from the manufacturers in the form of content declarations/formulations can be sent directly to the respective competent body.

3.f.4.e) Heavy metals in paints, primers and varnishes

Any paints, primers and/or varnishes used on wood, wood-based, cork, cork-based, bamboo or bamboo-based materials shall not contain substances based on cadmium, lead, chromium VI, mercury, arsenic or selenium at concentrations exceeding 0.010% weight for each individual metal in the in-can paint, primer or varnish formulation.

Assessment and verification

The applicant and/or his supplier, as appropriate shall provide a declaration of compliance with this criterion and provide the respective SDS from the suppliers of the paints, primers and varnishes used.

3.g 4.f) Plasticisers

Any adhesive, resin or surface treatment substance or mixture shall not contain any phthalate plasticisers that are referred to in Article 57 of Regulation (EC) No 1907/2006. The absence of these phthalates shall be considered as the total sum of the listed phthalates amounting to less than 0.10% of the plastic foils adhesive, resin or surface treatment substance or mixture weight (1000mg/kg).

Assessment and verification

The applicant shall provide either:

- a declaration of compliance with the criterion from the panel supplier or the floor manufacturer stating that plastic foils plasticizers were not used, or
- a declaration of compliance with the criterion from the panel supplier or the floor manufacturer stating that plasticizers plastic foils were used and that none of the phthalate plasticisers with Article 57 hazard classifications have been used in the adhesive, resin or surface treatment substance or mixture the plastic foil.

In the absence of a suitable declaration, plastic foils adhesive, resin or surface treatment substance or mixture materials shall be tested for the presence of these phthalates according to ISO 14389 or ISO 8214-6 standard.

4.g) Halogenated organic compounds

Halogenated organic compounds are not permitted in the substances used in the manufacture of floor coverings (eg as binders, flame retardants, adhesives, coatings, etc)

Assessment and verification
The applicant shall provide a declaration of compliance supported by a declaration of non-use of halogenated organic compounds from the manufacturer of the substances. In addition, the respective SDS of the substances shall be provided.

5. Energy consumption in the production process

The average annual energy consumed during the production of the floor coverings shall be calculated as indicated in Table 5.1 and Appendix II and shall exceed the following limits \( (E = \text{score}) \):

<table>
<thead>
<tr>
<th>Product</th>
<th>E score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solid wood floorings</td>
<td>&gt; 11.0</td>
</tr>
<tr>
<td>Multi-layer wood floorings</td>
<td></td>
</tr>
<tr>
<td>Mosaic wood floorings</td>
<td></td>
</tr>
<tr>
<td>Cork floor coverings and cork tile floorings</td>
<td>&gt; 8.0</td>
</tr>
<tr>
<td>Bamboo floor coverings</td>
<td></td>
</tr>
<tr>
<td>Laminate floorings</td>
<td></td>
</tr>
</tbody>
</table>

---

\[
E = \frac{A}{20} + \left( 5 - \frac{B}{3} \right) + \left( 5 - \frac{C}{7} \right)
\]

Where

\[
A = \text{Proportion of renewable energy} = \frac{\text{Renewable fuels} \left( \frac{\text{kWh}}{\text{m}^2} \right) + 1.25 \text{(on-site generated electricity from non-fuel RES) \left( \frac{\text{kWh}}{\text{m}^2} \right) + purchased electricity from RES \left( \frac{\text{kWh}}{\text{m}^2} \right)}}{\text{Renewable Fuels} \left( \frac{\text{kWh}}{\text{m}^2} \right) + \text{Non-renewable Fuels} \left( \frac{\text{kWh}}{\text{m}^2} \right) + 1.25 \text{(on-site generated electricity from non-fuel RES) \left( \frac{\text{kWh}}{\text{m}^2} \right) + purchased electricity from RES \left( \frac{\text{kWh}}{\text{m}^2} \right)}} \times 100
\]

\[B = \text{Annual electricity consumption means the sum of the electricity purchased from an external supplier and the electricity produced on-site from non-fuel renewable energy sources (RES). If the electricity purchased is green electricity from RES a factor of 0.8 shall be applied.}\]

\[C = \text{Annual fuel consumption means the sum of all fuels purchased or sourced as by-products in the manufacturing of the floorings and used to generate energy on-site}\]

---

Table 5.1. Calculation of the scoring point

<table>
<thead>
<tr>
<th>Formula</th>
<th>Environmental parameter</th>
<th>Maximum requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>( E )</td>
<td>Proportion of renewable energy in the total annual energy consumption</td>
<td>%</td>
</tr>
<tr>
<td>( B )</td>
<td>Annual electricity consumption</td>
<td>kWh/m²</td>
</tr>
<tr>
<td>( C )</td>
<td>Annual fuel consumption</td>
<td>kWh/m²</td>
</tr>
</tbody>
</table>

---

The following is an indicative list of activities that shall be included and not included in the calculations of the energy consumption. Activities shall start at the reception of the fells in the manufacturer's or his suppliers facilities until the end of the manufacturing process.

<table>
<thead>
<tr>
<th>Product</th>
<th>Conditions for the electricity and fuel consumption (indicative list)</th>
<th>Included</th>
<th>Not included</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solid wood floorings</td>
<td>- drying, grinding and sawing</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- sizing and trimming</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- sanding</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- coating</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- packaging</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- and any other activity needed for manufacturing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mosaic wood floorings</td>
<td>- drying, grinding and sawing</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- sizing and trimming</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Multi-layer wood floorings</td>
<td>- sanding</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- pressing</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- coating</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- packaging</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- and any other activity needed for manufacturing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cork and cork tile floor coverings</td>
<td>- drying, grinding and sawing</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- sizing and trimming</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- sanding</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- pressing</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- or manufacturing of the core board if used in its structure</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- coating</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- packaging</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- and any other activity needed for manufacturing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bamboo floor coverings</td>
<td>- drying, grinding and sawing</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- sizing</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- sanding</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- pressing</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- or manufacturing of the core board, the melamine layer and the decorative layer if provided</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- stacking with electronic precision</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- pressing</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- sizing and trimming</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- packaging</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- and any other activity needed for manufacturing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Laminate floorings</td>
<td>- drying, grinding and sawing</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- sizing</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- sanding</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- or manufacturing of the core board, the melamine layer and the decorative layer if provided</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- stacking with electronic precision</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- pressing</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- sizing and trimming</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- packaging</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- and any other activity needed for manufacturing</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- for solid wood floorings and bamboo floorings the electricity and fuel consumed in drying, grinding and sawing shall be included
- for cork and laminate floorings that may include a core board in their structure, the energy consumed in the manufacture of the board is to be included
- energy consumption in the manufacture of adhesives, lacquers or any other in-can preparation used in the manufacture of the flooring is not included in the calculation

E scoring shall be calculated per m$^2$ of produced flooring and shall account the direct and indirect energy consumed in the production of the flooring (eg energy consumed in pressing). Indirect energy consumption is not considered (eg. proportional energy consumed for heating and lighting of the facilities, etc).

Assessment and verification

The applicant should state and demonstrate:
- The type and quantity of electricity that has been, on average, purchased from an external supplier per year. Should electricity from RES green electricity be purchased, the guarantees of origin shall be provided.
- The type(s) of fuels and quantities that have been used in the manufacturing of the floor coverings by means of the contracts, bills or equivalent documentation that includes dates, quantity delivered/purchased and specifications of the fuel (eg physic-chemical properties, Low Heating Value (LHV), etc). Declaration of which of those used fuels are coming from RES renewable sources in accordance with Renewable Energy Directive 2009/80/EC shall be included.
- The type and quantity of energy that has been sold. The calculations shall include the type and quantity of fuels, if any, used for generating the energy sold, the dates or periods of time in which it was generated and the selling dates.
- A declaration of the quantity of flooring that applies for the EU Ecolabel (in m²) that has been, on average, annually produced.

The documents used to communicate the energy consumption, fuel purchase and/or energy generation as well as the documents to communicate flooring production to the national authorities can be used to demonstrate compliance with this criterion.

6. Emissions of VOC from the floor coverings

VOC emissions from the floor coverings

The laminate, cork, and bamboo floor coverings shall not exceed the emission values listed in Table 6.1 and the solid and multi-layer and the wood floor coverings shall not exceed the emission values listed in Table 6.2 measured in a test chamber in accordance with CEN/TS16516. Packaging and delivery of samples sent for testing, their handling and conditioning shall follow the procedures described in the CEN/TS 16516.

Table 6.1. Emission requirements for laminate, cork and bamboo floor coverings for other floor covering apart from solid and multi-layer wood floorings

<table>
<thead>
<tr>
<th>Compound or substance</th>
<th>Limit Value after 28 days storage in a ventilated test chamber (see CEN/TS16516) in mg/m³·air²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total VOC</td>
<td>≤ 0.3</td>
</tr>
<tr>
<td>Total SVOC</td>
<td>≤ 0.1</td>
</tr>
<tr>
<td>R-value for LCI substances</td>
<td></td>
</tr>
</tbody>
</table>

Table 6.2. Emission requirements for solid and multi-layer wooden flooring

<table>
<thead>
<tr>
<th>Compound or substance</th>
<th>Limit Value after 28 days storage in a ventilated test chamber (see CEN/TS16516) in mg/m³·air²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total VOC minus acetic acid (CAS 64-19-7)</td>
<td>≤ 0.3</td>
</tr>
<tr>
<td>Total SVOC</td>
<td>≤ 0.1</td>
</tr>
<tr>
<td>R-value for LCI substances</td>
<td></td>
</tr>
</tbody>
</table>

*TVOC: total volatile organic compounds, defined as those compounds within the retention range of n-C₆ to n-C₂₂ (inclusive).
*TSVOC: total volatile organic compounds, defined as those compounds within the retention range of >n-C₁₆ to n-C₂₂ (inclusive).
*R-value is the sum of all Ri values where Ri value is the ratio Ci / LCIi, where Ci is the chamber mass concentration of compound i, and LCI is the LCI value of compound i defined under the European Collaborative Action “urban air”, indoor environment and human exposure.
*The chamber test has to be carried out 28 days after the conclusion of the surface treatment. Up to this point in time the product to be tested is stored in a sealed package at the production site and thus delivered to the test laboratory.
Table 6.1. Emission requirements

<table>
<thead>
<tr>
<th>Products</th>
<th>Emission requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Limit Value after 28 days storage in a ventilated test chamber (see CEN/TS16516) in mg/m³ air&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
<tr>
<td>Solid wood floorings</td>
<td>Total VOC minus acetic acid (CAS 64-19-7)</td>
</tr>
<tr>
<td>Multi-layer wood floorings</td>
<td></td>
</tr>
<tr>
<td>Mosaic wood floorings</td>
<td></td>
</tr>
<tr>
<td>Cork floor coverings</td>
<td>Total VOC</td>
</tr>
<tr>
<td>Bamboo floor coverings</td>
<td></td>
</tr>
<tr>
<td>Laminate floorings</td>
<td></td>
</tr>
<tr>
<td>All floorings</td>
<td>Total SVOC</td>
</tr>
<tr>
<td></td>
<td>R-value for LCI substances</td>
</tr>
<tr>
<td></td>
<td>Carcinogenic substances</td>
</tr>
</tbody>
</table>

<sup>a</sup> The chamber test has to be carried out 28 days after the conclusion of the surface treatment. Up to this point in time the product to be tested is stored in a sealed package at the production site and thus delivered to the test laboratory.

Assessment and verification

The applicant shall provide a declaration of compliance supported by the test reports from chamber tests carried out in accordance with CEN/TS16516 or equivalent method showing that the limits above in the Table 6.1 have been met.

Test reports showing that the limits in the Table 6.1 or Table 6.2 are met shall include:

- Which test method was used,
- The test results and needed calculations showing the limits in Table 6.1 for solid and multi-layer wood floorings and test results complying with the limits in Table 6.1 for any other floorings,
- Test results for laminate floorings, cork and bamboo floorings and those floor coverings that comply with Table 6.1. For wooden floor coverings complying with Table 6.2, test results of the untreated and treated wooden floor coverings together with the needed calculations to demonstrate compliance should be provided.

If the chamber concentration limits specified at 28 days can be met 3 days after placing the sample in the chamber, or any other time period between 3 and 27 days after placing the sample in the chamber, then the compliance with the requirements can be declared and the test may be stopped prematurely.

Test data from up to 12 months prior to the EU Ecolabel application shall be valid for products so long as no changes to the manufacturing process or chemical formulations used have been made that would be considered to increase VOC emissions form the final product.

A valid certificate from relevant indoor climate labels can also be used as proof of compliance if the indoor climate label fulfils the requirements of this criterion and if it is judged by the competent body to be equivalent.

7. Emissions of formaldehyde from the floor covering

The floor covering manufactured by using formaldehyde-based adhesives or resins and/or formaldehyde-based finishing agents shall have [in the form that they are used in the floor covering, in other words, unfaced, coated, overlaid, veneered, etc] either:

Comment [j1]: I think that it comes from the panel... and that this is the comment of EEB regarding the checking of FH emissions from the final product and the board too.
- formaldehyde emissions that are lower than 50% of the threshold value allowing them to be classified as E1 (0.067mg/m$^3$ or 4mg/100g dry mass).  
- formaldehyde emissions that are lower than 65% of the E1 threshold limit (0.08mg/m$^3$ or 5mg/100g dry mass) in case of having Medium Density Fibreboard (MDF) panels,  
- formaldehyde emissions that are lower than the limits set out in the CARB Phase II or have formaldehyde emissions that are lower than the limits set out in the Japanese F-3 star or F-4 star standards.

**Assessment and verification:**

The applicant shall provide a declaration of compliance with this criterion. The assessment and verification of low formaldehyde emission floor coverings shall vary depending on the certification scheme it falls under. The verification documentation required for each scheme is described in Table 7.1.

**Table 7.1. Assessment and verification of low formaldehyde emission floor coverings**

<table>
<thead>
<tr>
<th>Certification scheme</th>
<th>Assessment and verification</th>
</tr>
</thead>
<tbody>
<tr>
<td>E1 (as defined in Annex B of EN 13986)</td>
<td>A declaration from the manufacturer, stating that the floor covering is compliant with 50% of E1 emission limits, or, in the case of floor coverings made of MDF panels, with 65% of E1 emission limits, supported by test reports carried out according to either EN 717-1, EN 717-2, or EN 120. EN 717-2 or EN 717-1 or an equivalent method.</td>
</tr>
<tr>
<td>CARB – California Air Resources Board: Phase II limits</td>
<td>A declaration from the manufacturer, supported by third-party verified test results according to ASTM E1333 or ASTM D6007, demonstrating floor covering compliance with the formaldehyde Phase II emission limits defined in the California Composite Wood Products Regulation 93120. Optionally, the floor covering may be labelled in accordance with Section 93120.3(c), containing details in respect of the manufacturer's name, the product lot number or batch produced, and the CARB assigned number for the third party certifier (this part is not mandatory if the products are sold outside of California or if the products were made using no-added formaldehyde or certain ultra-low emitting formaldehyde-based resins).</td>
</tr>
<tr>
<td>F-3 or 4 star limits</td>
<td>A declaration from the manufacturer of compliance with the formaldehyde emission limits as per JIS A 5905 (for fibreboard) or JIS A 5908:2003 (for particleboard and plywood), supported by third-party verified test data according to the JIS A 1460 desiccator method.</td>
</tr>
</tbody>
</table>

The declarations shall be accompanied by the analysis reports including which testing method/standard was used, measurement results and measurement frequency.

**8. Fitness for use**

Only the requirements associated with the specific type of flooring have to be fulfilled.

---

31 E1 is a threshold emission limit originally introduced in 1985 in the EU due to concerns over adverse health effects due to formaldehyde exposure. The emission limits are defined in Annex B of EN 13986 and correspond to steady state background levels of 0.1ppm (or 0.124mg/m$^3$) formaldehyde after 28d in a chamber test according to EN 717-1.

32 E1 is a threshold emission limit originally introduced in 1985 in the EU due to concerns over adverse health effects due to formaldehyde exposure. The emission limits are defined in Chapter B of EN 13986 and correspond to steady state background levels of 0.1ppm formaldehyde after 28d in a chamber test according to EN 717-1.

33 The requirements apply to floor coverings with a moisture content of H=6.5%.

34 Regulation 93120 "Airborne toxic control measure to reduce formaldehyde emissions from composite wood products” California Code of Regulations.
Floor coverings shall achieve at least:
- the level of use of class 22 (alternatively WR1) for floor coverings intended for private use
- the level of use of class 32 (alternatively WR2) for floor coverings intended for commercial use.

The floor coverings should be tested and classified in accordance with the latest versions of the standards and indications included in Table 8.1

**Table 8.1. Standards for testing and classifying the floor coverings**

<table>
<thead>
<tr>
<th>Flooring</th>
<th>Test method</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Factory lacquer solid wood</td>
<td>EN 13696 for wear resistance</td>
<td>EN 14354, Wear resistance in appendix D3.2</td>
</tr>
<tr>
<td>Factory oil, untreated</td>
<td>prEN 13696 annex A</td>
<td>EN 14354</td>
</tr>
<tr>
<td>Cork tile</td>
<td>EN 12104</td>
<td>EN ISO 10874</td>
</tr>
<tr>
<td>Cork</td>
<td>EN 660-1 for wearing group EN 425 for castor chair EN 425 for simulated movement of a furniture leg ISO 24343-1 for residual indentation</td>
<td></td>
</tr>
<tr>
<td>Bamboo</td>
<td>EN 11454 for resistance to abrasion and impact resistance EN 1534 for resistance to indentation prEN 13696 for top layer thickness or wear layer</td>
<td>EN ISO 10874 Cork flooring classification properties EN 14085</td>
</tr>
<tr>
<td>Laminate flooring</td>
<td>EN 13329 prEN 14978 EN 15468</td>
<td></td>
</tr>
</tbody>
</table>

Floor coverings shall achieve at least:
- the level of use of class 22 (alternatively WR1) for floor coverings intended for private use
- the level of use of class 32 (alternatively WR2) for floor coverings intended for commercial use.

The wear resistance of floor coverings other than those mentioned above shall be tested according to test methods selected by an independent test institute specialized in wear tests for flooring. The test methods shall be selected taking into account the intended use area of the flooring.

**Assessment and verification**

The applicant shall provide a declaration of compliance with the criterion stating which (if any) standards applied to the product and provide a declaration of compliance with this criterion. The declaration shall be supported by test reports that shall include:
- the type of flooring,
- the test method/s selected,
- the test results and the classification of the flooring according to the results and the appropriate standard.

If the floor covering has been tested according to a test method other than what is specified above, this may be acceptable if the test methods are comparable in the opinion of the competent body.

9. Reparability and extended guarantee

---

58 Floorings intended for private use shall achieve class WR1 and flooring intended for commercial use shall achieve WR2
Only the requirements associated with the specific type of flooring have to be fulfilled. For the purpose of undertaking repair and replacement of worn out parts, the floor covering shall meet the following requirements:

- **Reparability:** Information shall be included in the consumer instructions or the manufacturer’s website to be accessible to the users and installers
  
a) **Design for repair and repair manual:** For floor coverings that are not glued down, the flooring shall be designed for disassembly with a view to facilitating repair, reuse and recycling. Simple and illustrated instructions regarding the disassembly and replacement of damaged elements shall be provided. Disassembly and replacement operations shall be capable of being carried out using common and basic manual tools. Information/recommendation of keeping spare panels in stock for possible event of repair shall be provided
  
b) **Repair Service / Information:** Information on how to obtain professional repairs, including contact details as appropriate
  
c) **Advice on provision of spare parts:** Information/recommendation to the end users of keeping spare panels in stock for possible event of repair shall be provided

- **Extended product guarantee:**
  
c) The applicant shall provide at no additional cost a minimum of a five year guarantee effective from the date of delivery of the product. This guarantee shall be provided without prejudice to the legal obligations of the manufacturer and seller under national law.

**Assessment and verification**

The applicant shall provide a declaration of compliance supported by:

- A copy of the repair manual or the consumer instructions or any other material where the information on design for repair, repair services/information and advice on provision of spare parts is provided.

- A copy of the guarantee that indicates the terms and conditions of the extended product guarantee that are provided in consumer information documentation and that meet the minimum requirements set out in this criterion

**10. Consumer information**

The product shall be sold with the relevant consumer information on the packaging and/or any other documentation accompanying the product. Only the requirements associated with the specific type of flooring have to be fulfilled.

Instructions should be legible and be provided in the language of the country where the product is placed on the market or include graphical representation or icons and related to the following aspects:

- Information on the subgroup to which the product belongs (solid or multi-layer wood flooring, engineered wood, solid wood, cork flooring, cork tile flooring, bamboo flooring, laminate flooring, etc) and if a surface treatment is still needed at user’s place shall be stated.

- **Recommendations for the installation, including**

  All relevant instructions referring to the best environmental installation practices shall be included:

  - **Floating installation** is recommended whenever possible, as it is easier, quicker and environmentally friendly in respect to the end-of-life phase. If floating installation is recommended, Reference should be made to the necessary preparation of the underlaying surface and the auxiliary materials needed.

  - **Glued down installation** is recommended due to the possible longer duration, recommendation of using an adhesive/glue certified with a Type I Ecolabel or a low emission adhesive complying with EMICODE EC1 or equivalent should be included
well illustrated assembly and disassembly instructions as per the requirements of criterion 8 9a (if applicable)

- Recommendation for the surface treatment for unfinished floor coverings and floorings needing an oiled surface.
  - relevant information about the type and quantity of the surface treatment products needed (e.g., oil or lacquer) to achieve the intended durability.
  - relevant information about the finish of the floorings with low emitting finishes in accordance with the Directive 2004/42/EC (Paint Directive)
  - information should be included about how the service life of the flooring can be extended through renovation e.g., sanding and surface treatment.

- Recommendations for the use, cleaning and maintenance of the product.
  - relevant information for routine cleaning shall be included including a mention of the most recommended cleaning products if applicable to the floor covering type, with a mention to if possible, cleaning products with a Type I ecolabel should be recommended.
  - relevant information for maintenance instructions, including maintenance products, and products for occasional renovation or intensive cleaning. If possible, maintenance products with a Type I ecolabel should be recommended.
  - a clear statement of the flooring's areas of use and a statement of compliance with the relevant EN standards for the product as referred to in criterion 28

- Information related to the reparationability:
  - a clear statement recommending the provision of spare parts as per the requirements of criterion 9a.
  - relevant company contact information and/or any other relevant parties regarding repair or replacement services as per the requirements of criterion 89b.
  - relevant information regarding the terms and conditions of the product guarantee as per the requirements of criterion 89c.

- Information related to the end-of-life of the product: A detailed description of the best ways to dispose of the product (i.e., reuse, recycling, energy recovery, etc.) shall be given to the consumer, ranking them according to the impact on the environment.

Assessment and verification:
The applicant shall provide a declaration of compliance with the criterion supported by a copy of the consumer information document that is to be provided with the product. The copy shall show compliance with each of the points listed in the criterion, as appropriate.

11. Information appearing on the EU Ecolabel
The logo should be visible and legible. The EU Ecolabel registration/licence number must appear on the product and must be legible and clearly visible.

The optional label with text box shall contain the following text:
- Wood, cork and/or bamboo from sustainably managed forests
- Lower energy consumption for manufacturing
- Limited hazardous substances used
- Low-emitting product (50% or 65% E1)

Assessment and verification:
The applicant shall provide a declaration of compliance with the criterion supported by a copy of the information appearing on the EU Ecolabel showing compliance with this criterion.
Appendix I. Guidance on the calculation of the quantity of VOC applied

The requirement relates to the total VOC in the surface treatment products with the chemical composition they have in the wet form. If the products required dilutions, the calculation is to be based on the content in the dilutive product.

This method is based on the application method that calculates the quantities applied per m² surface area. It determines the content of the organic solvents as a percentage of quantity of the surface treatment applied.

The applied quantity of VOC is calculated using the following formula

\[ \sum_{n=1}^{f} \text{Quantity of surface treatment product} \times \% \text{VOC} \times \text{surface treatment efficiency} \]

The formula consists in:

- Quantity of surface treatment product: Per each coating applied the amount of surface treatment fed in the system should be reported in g/m².
- The proportion of VOC in the surface treatment products: the concentration is to be stated as a percentage by weight,
- The surface treatment efficiency that depends on the application method. The efficacy is tabled in accordance with the state-of-the-art of the surface treatment industry as shown in Table 4.2.
- The sum of all the coatings applied.

<table>
<thead>
<tr>
<th>Surface treatment</th>
<th>Efficiency</th>
<th>Surface treatment</th>
<th>Efficiency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Automatic spray application, no recycling</td>
<td>50%</td>
<td>Roller coating</td>
<td>95%</td>
</tr>
<tr>
<td>Automatic spray application with recycling</td>
<td>70%</td>
<td>Curtain coating</td>
<td>95%</td>
</tr>
<tr>
<td>Spray application, electrostatic</td>
<td>65%</td>
<td>Vacuum coating</td>
<td>95%</td>
</tr>
<tr>
<td>Spray application, bell/disc</td>
<td>80%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Appendix II. Guidance for calculating the process energy use consumption in the production process

Energy consumption per flooring m² is calculated as an annual arithmetic average of the last three years. Should the company not have these data, the competent bodies will assess the acceptance of equivalent data.

If the producer has an energy surplus that is sold as electricity, steam or heat, the sold quantity can be deducted from the fuel consumption. Only fuel that is actually consumed in the manufacture of the floor covering is to be included in the calculation.

Energy consumption is reported in kWh/m², although calculations may also be made in MJ/m² (1 kWh=3.6 MJ).

The energy content of the fuels is calculated based on the table 4.2. If electrical energy is produced on-site, one of the following methods can be used for calculating fuel consumption:

- Actual annual consumption of fuel.
- Consumption of electricity produced on-site multiple by 1.25 if the origin is a non-combustible renewable source.

Values of the energy consumption and should be calculated by means of the standard fuel values. The energy contents of various fuels are given in Table 5.2.

<table>
<thead>
<tr>
<th>Fuel</th>
<th>MJ/kg</th>
<th>Fuel</th>
<th>MJ/kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Petrol</td>
<td>44.0</td>
<td>Pellets (7% W)</td>
<td>16.8</td>
</tr>
<tr>
<td>Diesel</td>
<td></td>
<td>Peat</td>
<td>7.8-3.8</td>
</tr>
<tr>
<td>LPG</td>
<td>45.2</td>
<td>Straw (15% W)</td>
<td></td>
</tr>
<tr>
<td>E01 oil</td>
<td>42.3</td>
<td>Biogas</td>
<td></td>
</tr>
<tr>
<td>E05 oil</td>
<td>44.0</td>
<td>Wood chips (25% W)</td>
<td>13.8</td>
</tr>
<tr>
<td>Natural gas</td>
<td>47.2</td>
<td>Waste Wood</td>
<td></td>
</tr>
<tr>
<td>Power station coal</td>
<td>28.5</td>
<td>GJ/ton is equivalent to MJ/kg</td>
<td></td>
</tr>
</tbody>
</table>

(% W) is the percentage by weight of water in the fuel and given the letter f in the formulas below. If nothing else is stated, f = 0% W and the ash content is average.

The formula for calculating the energy content of woodchips depends on the water content. Energy is required to evaporate the water in the wood. This energy reduces the heat value of the woodchips. The energy content can be calculated as:

\[
\text{Woodchip} = 19.0 \left( \frac{\text{MJ}}{\text{kg}} \right) - 21.442 \times \frac{f}{100}
\]

Where f is the water content in %W of the wood. The factor 21.442 is the sum of water's heat of evaporation (2.442MJ/kg) and the energy content of dry wood 19.0 MJ/kg. If the applicant has laboratory analyses of the heat value of a fuel, the competent bodies may consider using this heat value for calculating the energy content.

36 Manufacture of the floor covering included energy used in the production line as well as other auxiliaries (eg lighting, heating, energy consumed in offices, etc)

### Appendix III List of standards

<table>
<thead>
<tr>
<th>Standard</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>EN 12466</td>
<td>Resilient floor coverings - Vocabulary</td>
</tr>
<tr>
<td>EN 13329</td>
<td>Laminate flooring, specifications, requirements and test methods</td>
</tr>
<tr>
<td>prEN 13756</td>
<td>Wood flooring - Terminology</td>
</tr>
<tr>
<td>ISO 14021</td>
<td>Environmental labels and declarations - Self-declared environmental claims (Type II environmental labelling)</td>
</tr>
</tbody>
</table>

#### Floor covering definitions

<table>
<thead>
<tr>
<th>Standard</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>EN 120</td>
<td>Wood-based panels – Determination of formaldehyde content – Extraction method called the perforator method</td>
</tr>
<tr>
<td>EN 717-1</td>
<td>Wood-based Panels – Determination of Formaldehyde Release – Formaldehyde emission by the chamber method</td>
</tr>
<tr>
<td>EN 717-2</td>
<td>Wood-based Panels – Determination of Formaldehyde Release – Formaldehyde release by the gas analysis method</td>
</tr>
<tr>
<td>CEN/TS 16516</td>
<td>Construction products – Assessment and release of dangerous substances - Determination of emissions into indoor air</td>
</tr>
</tbody>
</table>

#### Volatile organic compound emissions

<table>
<thead>
<tr>
<th>Standard</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>EN 1243</td>
<td>Adhesives. Determination of free formaldehyde in amino and amidoformaldeyl condensates</td>
</tr>
<tr>
<td>ISO 8214-6</td>
<td>Safety of toys - Part 6: Certain phthalate esters in toys and children's products</td>
</tr>
</tbody>
</table>

#### Raw materials

<table>
<thead>
<tr>
<th>Standard</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>EN 1243</td>
<td>Adhesives. Determination of free formaldehyde in amino and amidoformaldeyl condensates</td>
</tr>
<tr>
<td>ISO 8214-6</td>
<td>Safety of toys - Part 6: Certain phthalate esters in toys and children's products</td>
</tr>
</tbody>
</table>

#### Fitness for use

<table>
<thead>
<tr>
<th>Standard</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>EN 425</td>
<td>Resilient and laminate floor coverings. Castor chair test</td>
</tr>
<tr>
<td>EN 660-1</td>
<td>Resilient floor coverings. Determination of wear resistance. Stuttgart test</td>
</tr>
<tr>
<td>EN 1543</td>
<td>Products and systems for the protection and repair of concrete structures. Test methods. Determination of tensile strength development for polymers</td>
</tr>
<tr>
<td>EN ISO 10874</td>
<td>Resilient, textile and laminate floor coverings -- Classification</td>
</tr>
<tr>
<td>EN 12104</td>
<td>Resilient floor coverings. Cork floor tiles. Specification</td>
</tr>
<tr>
<td>EN 13329</td>
<td>Laminate floor coverings. Specifications, requirements and test methods</td>
</tr>
<tr>
<td>prEN 13696</td>
<td>Laminate floor coverings. Specifications, requirements and test methods</td>
</tr>
<tr>
<td>EN 14354</td>
<td>Wood flooring. Test methods to determine elasticity and resistance to wear and impact resistance</td>
</tr>
<tr>
<td>EN 14978</td>
<td>Laminate floor coverings - Elements with acrylic based surface layer, electron beam cured - Specifications, requirements and test methods</td>
</tr>
<tr>
<td>EN 15468</td>
<td>Laminate floor coverings. Elements with directly applied printing and resin surface layer, Specifications, requirements and test methods</td>
</tr>
<tr>
<td>ISO 24343-1</td>
<td>Resilient and laminate floor coverings - Determination of indentation and residual indentation - Part 1: Residual indentation</td>
</tr>
</tbody>
</table>