



Revision of European Ecolabel Criteria for Wooden floor coverings

2nd AHWG

www.jrc.ec.europa.eu



*Serving society
Stimulating innovation
Supporting legislation*

2. Political objectives of the EU Ecolabel and process description



• **IE** – Petten, The Netherlands
 • *Institute for Energy*



• **IRMM** – Geel, Belgium
 • *Institute for Reference Materials and Measurements*



• **ITU** – Karlsruhe, Germany
Institute for Transuranium Elements



IES/ IHCP/ IPSC – Ispra, Italy
Institute for Environment and Sustainability

• *Institute for Health and Consumer Protection*

Institute for the Protection and Security of the Citizen



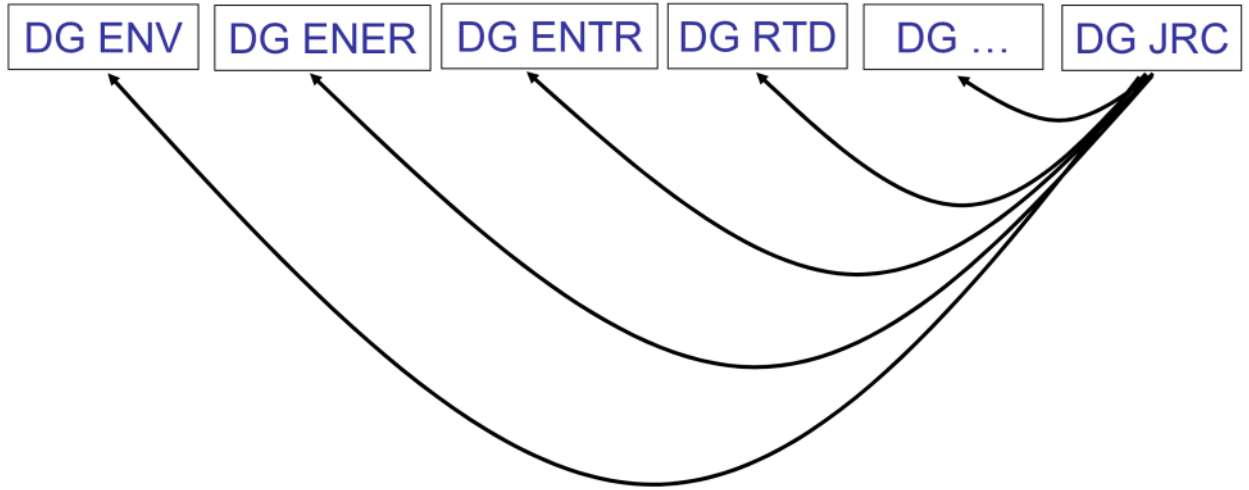
• **IPTS** – Sevilla, Spain
 • *Institute for Prospective Technological Studies*



2. Political objectives of the EU Ecolabel and process description



Joint Research Centre in the context of the European Commission:





Activities in support of Product Policy

*IPTS supports the **development and implementation of Sustainable Product Policies**, among them the EU Ecolabel Regulation and the Green Public Procurement Communication.*

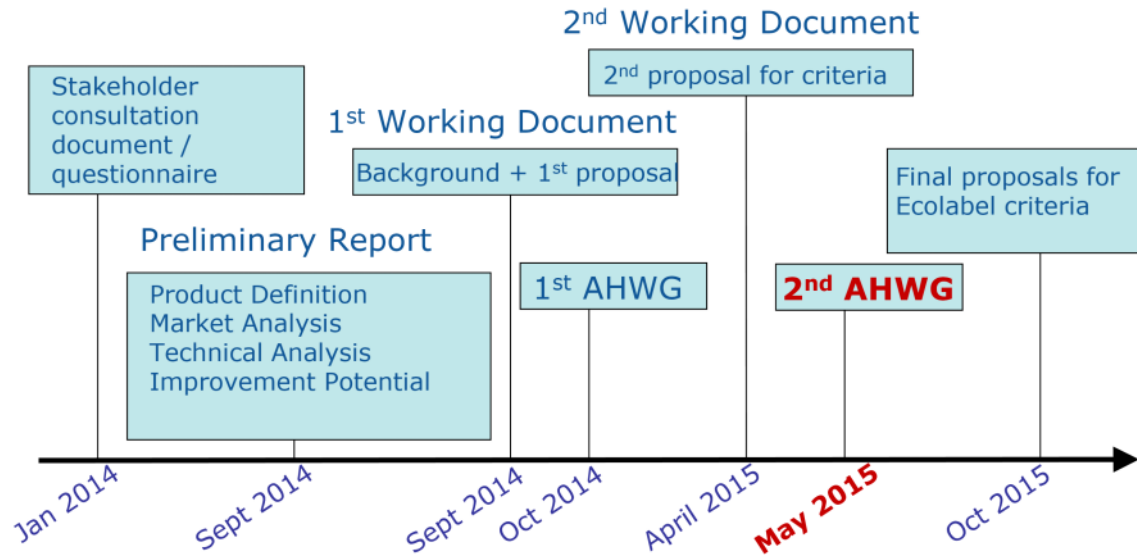
***Analysis of product groups** with focus on techno-economic and environmental aspects*

***Develop criteria** and implementing measures until the stage of voting in committee (resp. publication on GPP page)*

2. Political objectives of the EU Ecolabel and process description



Criteria development process



28th May 2015



2. Political objectives of the EU Ecolabel and process description



Feedback using the BATIS system 30th June 2015

The screenshot displays the BATIS (BAT Information System) interface, a web-based forum for the Joint Research Centre. The interface is divided into several sections:

- Header:** Includes the European Commission logo, the text "JOINT RESEARCH CENTRE Institute for Prospective Technological Studies (PTS)", and the "BAT Information System" logo. The user is logged in as "Nicholas Dodd" on "Monday, May 12, 2014 12:22 AM".
- Navigation:** Shows the current path: "BATIS > Nicholas Dodd > Forums > 2_EU Ecolabel and Green Public Procurement for...".
- Left Panel (Folders):** Lists available folders for "2_EU Ecolabel and Green Public Procurement for...":
 - Ad-Hoc Working Group (AIHWG) meeting 1, 10th October 2013
 - Ad-Hoc Working Group (AIHWG) meeting 2, 12th May 2014
 - Stakeholder comments: AIHWG1 consultation round 12/09/13 - 24/10/13
 - Stakeholder comments: AIHWG2 consultation round 16/04/14- 04/07/14
 - Stakeholder comments: EU GPP consultation round 30/04/14 - 13/06/14
- Main Content Area:** Displays a list of forum posts under the heading "NEW POST". The posts are related to EU Ecolabel criteria proposals and consultations. A table summarizes the posts:

Post	Creator	Creation date	Last update	Info
EU Ecolabel_Draft criteria legal text_criteria proposals v1	(nicholas.dodd)	16/04/2014 22:28	30/04/2014 10:35	
EU Ecolabel_Draft criteria legal text_preamble v1	(nicholas.dodd)	16/04/2014 22:36	30/04/2014 10:35	
EU Ecolabel_Hazardous substances criteria proposal_Revision 2	(nicholas.dodd)	29/04/2014 10:24	30/04/2014 10:35	
EU Ecolabel_Hazardous substances evidence matrix_Revision 2	(nicholas.dodd)	29/04/2014 10:25	30/04/2014 10:35	
EU Ecolabel_Hazardous substances_Sub-group meeting 26/02/14 minutes	(nicholas.dodd)	29/04/2014 10:26	30/04/2014 10:35	
EU Ecolabel_Technical background document_Revision 2	(nicholas.dodd)	16/04/2014 22:35	30/04/2014 10:35	
GPP Office IT Equipment_Revision criteria proposals_Version 1	(nicholas.dodd)	30/04/2014 10:33	30/04/2014 10:34	
GPP Office IT Equipment_Technical background and criteria proposals_Version 1	(nicholas.dodd)	30/04/2014 10:32	30/04/2014 10:34	



Summary

- 1. Stakeholders can provide comments on technical report v2.0 and separate draft criteria proposals for EU Ecolabel (**before 30th June 2015**).**
- 2. Comments need to be transmitted in the HTML version using online BATIS tool.**
- 3. June 2015: EUEB progress report**
- 4. Technical Report v3.0 ~ October 2015.**
- 5. Process finalised 1st half 2016**

3. Related environmental impacts – link to the EU Ecolabel criteria



Hotspots	% total impact	Revised EU Ecolabel criteria	Comments in the related criteria
Extraction of the raw materials			
Extraction of forestry raw materials	(-25) to 50%	Sustainable managed forest materials	It ensures that, at least 70% of the forestry raw materials used in the finished product are certified by a sustainable management forest certificate.
		Contaminants in recycled wood	It ensures that recycled wood can be introduced in the production stage without lowering the quality of the finished product. It enhances the use of recycled materials and preserves the extraction of new materials from forests.
		Wood preservatives	It ensures that wood could be successfully recycled at the end-of-life stage of the product and preserves the extraction of new forestry materials to be used
		Information appearing on the EU Ecolabel	It informs consumers that the product has larger amount of certified forestry material compared to other products while they are making purchase decisions
Transport		--	
Waste generation	Negligible	--	The little relevance of these hotspots are the main reason for not developing EU Ecolabel criteria
Water use		--	



3. Related environmental impacts – link to the EU Ecolabel criteria



Hotspots	% impact	Revised EU Ecolabel criteria	Comments in the related criteria
Production and manufacturing of the wood-based flooring			
Energy consumed (drying, heating and pressing)	2-85%	Energy saving	The criterion limits the amount of total energy used during the production and sets up caps for the maximum electricity and fossil fuel sourced energy to be used.
		Information appearing on the EU Ecolabel	It informs consumers that the product has saved energy compared to other products while they are making purchase decisions
Waste generation	1-10%	Waste management	It ensures that the limited amount of waste will be generated and that this waste will be properly managed from the environmental point of view.
Packaging			
Transport to and from facilities	< 2%	--	Their environmental impacts are not significant from the life-cycle perspective. No criteria have been proposed
Water use	Not rated	--	
Adhesives production	5-25%	VOCs & formaldehyde in adhesives	It limits the amount of VOCs and formaldehyde used in the resins
		Halogens	It ensures halogens are not included in the bill of materials
		Plasticizers	It ensures halogens are not included in the bill of materials
Finish and surface treatment production	Up to 6%	Heavy metals in paint & varnishes	It ensures heavy metals do not reach the environment in large quantities
		VOC content in surface treatment	It ensures end user's health will be protected during the use phase



3. Related environmental impacts – link to the EU Ecolabel criteria



Hotspots	% impact	Revised EU Ecolabel criteria	Comments in the related criteria
Production and manufacturing of the wood-based flooring			
Emissions from the core board	Not rated	Formaldehyde emissions from the wooden board	It limits the emissions coming out from the main wood-based material of the flooring preventing end-users
Other chemical	Not rated	Biocides/preservatives	It ensures that no persistent or biocide preservatives are included as an ingredient
		Flame retardants	
		Hazardous substances and mixtures	It limits the use of potentially hazardous substances and mixtures that can be included in the product to those required by the national legislation. This limits the environmental and health risks for the consumers
		Ingoing substances Art 59(1) of REACH Regulation	
		Information appearing on the EU Ecolabel	It informs consumers that the product has a limited amount of hazardous substances while they are making purchase decisions
Installation and use stage			
Laying and installation		User information	It ensures that end users are provided with the needed information to lay the flooring respecting the environment
Use phase	Not rated	Indoor emissions	It ensures that end user's health is preserved requiring floorings to be low-emitting products
	Indirect effects	Fitness for use	It ensures flooring will have a realistic useful life as long as expected for its intended use. It prevents from a premature refurbishment saving resources.



3. Related environmental impacts – link to the EU Ecolabel criteria



Hotspots	% impact	Revised EU Ecolabel criteria	Comments in the related criteria
Installation and use stage			
Use phase	10-30%	Maintenance	It prevents from the environmental impacts that can be caused during the useful life due to the use of VOC containing products and their associated emissions.
		User information	It ensures that consumers are provided with the needed information to maintain and use the product satisfactorily
End-of-life			
End life	(-20) to 50%	User information	It ensures that consumers are provided with the information needed to properly handle the product at the end its useful life. Further actions are out of the scope of this policy tool. Additionally, aspects that could harm an environmentally proper management have been tackled in other life-cycle stages of the product



4. Scope and definition of the product group within EU Ecolabel



Change of the name to better reflect the content of non-wooden materials. However, would the **term wood-based be considered representative** of cork and bamboo floorings? Would **"plant-based"** be a better term??

Inclusion of "pre-manufactured" to exclude those DIY wooden floorings that should be coated once they are already installed. Should the **term "ready-to-use"** be added?

The product group of **'wood-based floor covering'** shall comprise **pre-manufactured** wood- and plant-based **floor coverings**: including wood and timber coverings, laminate floorings, cork coverings and bamboo floorings which are made, for more than **80 % in mass** (in the final product), from wood, wood powder and/or wood/plant-based material. It does not apply to wall coverings, unless properly indicated, or coverings for external use or for coverings with a **structural** function.

Should the following restriction be included: **"for non-structural indoor use"**?

Lower amount of wood and plant-based materials to open the scope and better match the current EU wooden floor covering market

4. Scope and definition of the product group within EU Ecolabel



**Example 1:
HPL flooring
EPD- ELF- 20xxxx1-E**

HDF (high density fibreboard)

The core board is an HDF board composed of wood fibres and a thermosetting resin, mainly MUF (melamine-urea-formaldehyde). The considered core material has a density of 880 kg/m³.

Table 3: Material content of the product

Component	Material	mass [%]		Renewable resources	availability	origin
		6mm	12mm			
Core	HDF	80,7	90,4	yes	abundant	Europe
Surface layer	paper	4,4	2,2	yes	abundant	Europe
	resin	5,8	2,9	no	limited	Europe
	corundum	0,6	0,3	no	abundant	global
Glue	resin	3	1,5	no	limited	Europe
Backing	paper	5,5	2,7	yes	abundant	Europe

Paper

The renewable resource wood is the main raw material for paper production.

MDF and HDF by Egger

Source: EPD-EHW-2008311-E

Wood fibers: 82%

Water: 5-7%

UF-glue (urea resin): 11%

Paraffin wax emulsion < 1%

Paper

Melamine formadehyde resine

Calculation total wood-based material

%wt	6mm	12mm
HDF	66.17	74.13
SL	4.4	2.2
Paper	5.5	2.7
Total	76.02	79.03

Not enough wood-based material content

4. Scope and definition of the product group within EU Ecolabel



Example 2:
DPL flooring
EPD-MWS-201xxx1-E

HDF (high density fibreboard)

The core board is an HDF board (density approx. 890 kg/m³ ± 3%) composed of wood fibres and a thermosetting resin, mainly MUF (melamine-urea-formaldehyde).

Table 2: Material content of the product

Component	Material	Mass [%]			Renewable resources	availability	origin
		7mm	8mm	9mm			
Core	HDF	92.7	92.8	93.7	yes	abundant	Europe
Surface layer Overlay	paper	0.4	0.3	0.3	yes	abundant	Europe
	resin	1.1	1.4	1.2	no	limited	Europe
	corundum	0.3	0.4	0.4	no	abundant	global
Surface layer Decor	paper	1.0	1.0	0.8	yes	abundant	Europe
	resin	1.1	0.9	0.8	no	limited	Europe
Backing	paper	1.4	1.4	1.2	yes	abundant	Europe
Balance paper	resin	2.0	1.6	1.6	no	limited	Europe

Paper

The renewable resource wood is the main raw material for paper production.

General parameters of MDF/HDF boards

Density in oven	800kg/m ³
Solid resin content UF	12%
(NH ₄) ₂ SO ₄ hardener	1%
Paraffin dispersion	1.5%
Solid content resin	66%
Solution (NH ₄) ₂ SO ₄	35%

Source: Alpar, Faczan, Racz, Katoli:
MDF/HDF Production from Plantation Wood Species

Calculation total wood-based material

%wt	7mm	8mm	9mm
HDF	78.80	78.88	79.65
SL	1.4	1.3	1.1
Paper	1.4	1.4	1.2
Total	81.60	81.58	81.95

Enough wood-based material content

Joint
Research
Centre

4. Scope and definition of the product group within EU Ecolabel

Example 3: Bamboo flooring



MOSO[®] Bamboo Supreme (2-Ply Flooring),
High Density version

Name	CAS #	Content (% Weight)
Bamboo (<i>Phyllostachys pubescens</i>)	n.a.	94 - 98 %
Phenol Formaldehyde Resin (PF)	9003-35-4	< 2 %
Emulsion Poly Isocyanate (EPI)	9016-87-9	< 2 %
UV coating / Oil	Bona / Woca	< 2,5 % / < 0,5 %

MOSO[®] Bamboo Supreme (2-Ply Flooring).
Side Pressed / Plain Pressed versions

Name	CAS #	Content (% Weight)
Bamboo (<i>Phyllostachys pubescens</i>)	n.a.	98 - 99 %
Urea Formaldehyde Resin (UF)	9011-05-8	< 1 %
Emulsion Poly Isocyanate (EPI)	9016-87-9	< 1,5 %
UV coating / Oil	Bona / Woca	< 2 % / < 0,5 %

Enough bamboo material content

4. Scope and definition of the product group within EU Ecolabel



Discussion points

The product group of '**wood-based floor covering**' shall comprise **pre-manufactured** wood- and plant-based **floor** coverings: including wood and timber coverings, laminate floorings, cork coverings and bamboo floorings which are made, for more than **80 % in mass** (in the final product), from wood, wood powder and/or wood/plant-based material. It does not apply to wall coverings, unless properly indicated, or coverings for external use or for coverings with a structural function.

POINTS FOR DISCUSSION:

- Is the limit of **80% of wood and plant-based materials** appropriate?
- Do you think that the **new name brings clarity** to the type of products?
- Should "**wood-based**" term be replaced by **plant-based** term?
- Should the terms "**pre-manufactured**", "**ready-to-use**" and "**for non-structural indoor use**" be added?

Adhesives used for the **flooring installation** are proposed to be **excluded** from the scope:

- Materials with a very different nature than the wood-based floor coverings
- Generally adhesives for installation are considered as another product group category, ie. Most of the ecolabel schemes developed different criteria sets
- Included a recommendation on the materials to be used for installation in the User Information criterion

C1.- Sustainable wood, cork and bamboo



The term "wood" applies not only to solid wood but also wood chips and wood fibers.

All wood, cork and bamboo shall be covered by chain of custody certificates issued by an independent third party certification scheme such as FSC, 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 certification schemes allow mixing of uncertified material with certified and/or recycled materials in a product or product line, a minimum of 70% of the wood, cork and/or bamboo shall be sustainable certified virgin material 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 valid, independently certified chain of custody certificates for all wood, cork and bamboo used in the product or product line and demonstrate that the at least 70% of the wood originates from forests 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 product line includes uncertified material, proof should be provided that the content of uncertified 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.

C1.- Sustainable wood, cork and bamboo



Example 2: DPL flooring EPD-MWS-201xxx1-E

Information provided by the core board supplier

Part of the flooring	Core board		Overlay	Decor	Balance paper
Total wood mass	79.65		0.3	0.8	1.2
Supplier	SIA ERTE	Sofa SRL	Boss Carton		yyyy
Type of wood	Wood in chips	Planks	Uncoated paperboard		Paper
Geographical origin	Latvia	RO	Tailand		
Type certification	FSC ^{Mix}	FSC ^{100%}	FSC ^{Rec}	Controlled	PEFC ^a
License number / certificate code	FSC-C125447	FSC-C120471	FSC-C125437		
Enclosed invoice	Yes	Yes	Yes	Yes	Yes
Quantity (%) certified	70	100	70	--	70
% of floor part	30	70	100	100	100
Total certified	16.73	55.75	0.21	--	0.84

$$\text{Amount of material derived from certified forest} = \frac{16.73 + 55.75 + 0.84 + 0.21}{81.95} = 0.895$$



Criterion 1: Passed!!!

C1.- Sustainable wood, cork and bamboo



Example 2: DPL flooring EPD-MWS-20xxxx1-E

Part of the flooring	Core board	Overlay	Decor	Balance paper
Total wood mass	79.65	0.3	0.8	1.2
Supplier	Oelkers GmbH			
Type of wood	Fibreboard			
Geographical origin	DE			
Type certification	FSC Mix	Controlled	Controlled	Controlled
License number / certificate code	FSC-C106855			
Enclosed invoice	yes			
Quantity (%) certified	70			
% of floor part	100			
Total certified	55.76	--	--	--

Amount of material derived from certified forest = $\frac{55.76}{81.95} = 0.68$

Criterion 1: Failed!!!





The mark for responsible forestry
 FSC® C002063
 www.fsc.org
 Only the products defined as such,
 are FSC certified

FPO: FSC® certified + E0 (urea formaldehyde free glue), PP: gr/m², O: Pre-oiled Woca Air Dried (to be re-oiled after insta

Natural	Caramel	FSC®
BF-LA401	BF-LA451	-FPO
BF-LA421	BF-LA471	-FPO



- Assessment:**
- a) These two kinds of **bamboo floorings award the FSC certification**
 - b) No further A+V is needed: the bamboo flooring **complies with criterion 1**

Criterion 1: Passed!!!

However, feedback from this producer was:

- FSC certification is not really needed because:
 - to **produce bamboo products no deforestation is necessary** or even possible
 - **certification costs of the whole chain with FSC certification increase the product price in around 10%**





- FSC certification is not really needed

Over the years, FSC has become an important international standard. **However, for bamboo it has always been questionable if FSC certification is really necessary: bamboo is not a wood, it is a grass. And to produce bamboo products no deforestation is necessary or even possible: only the 5-6 years old plants are harvested. Bamboo is an agricultural / plantation way of harvesting, no replanting is needed and no clear cutting is taking place.**

The **practical problem was that a lot of building contracts simply required FSC only materials.** This would exclude bamboo automatically. In 2004 FSC has allowed bamboo into their system.

Because of **all certification costs of the whole chain within FSC certification** and the fact that just a part of the FSC certificated bamboo stems will be used for final FSC bamboo products, **will bring the price of FSC bamboo products at least 8-10% higher.**

POINTS FOR DISCUSSION:

- Do you agree to **comply with this criterion** through the compliance with **FSC or PEFC or equivalent**?
- **Should cork be derogated** from this criterion since cork floor coverings are mainly made of the "cork residues" of the bottle stopper's companies?
- **Should bamboo be derogated** from this criterion as bamboo is not considered to be wood?
- Are the "**balance sheets**" to track the amount of certified wood that goes in and out the manufacturer and suppliers facilities needed?
- Is the "**assessment and verification**" feasible as stated or it is needed to require an additional material recording to verify the compliance with this criterion?

- Should the following condition be included:
 - *"Alternatively it shall be possible to demonstrate by documentation that wood and wooden products which originate from regional forest and which have been further processed in regional saw mills where national forest laws include SFM and the Corruptions Perception Index by Amnesty International is higher than 70"*

C2.- General restricted substances



Criterion 2. General hazardous substance requirements.

The presence in the product of substances that have been identified according to Article 59 of the REACH Regulation^[1] or preparations that meet the criteria for classification according to the CLP Regulation^[2] for the hazards listed in Table 2.1 shall be restricted in accordance with sub-criterion 2.1 and 2.2.

Table 2.1. Grouping of Candidate List SVHCs and CLP hazards

<p>Group 1 hazards – Substances of Very High Concern</p> <p><i>Hazards that identify a substance as being within Group 1:</i></p> <ul style="list-style-type: none">○ Substances that appear on the Candidate List for Substances of Very High Concern (SVHC).○ Category 1A or 1B CMR*: H340, H350, H350i, H360F, H360D, H360FD, H360Fd, H360Df
<p>Group 2 hazards – CLP</p> <p><i>Hazards that identify a substance as being within Group 2:</i></p> <ul style="list-style-type: none">○ Category 2 CMR*: H341, H351, H361f, H361d, H361fd, H362○ Category 1 aquatic toxins: H400, H410○ Category 1 and 2 acute toxins: H300, H310, H330, H304○ Category 1 STOT*: H370, H372○ Category 1 Skin Sensitiser H317
<p>Group 3 hazards – CLP</p> <ul style="list-style-type: none">○ Category 2, 3 and 4 aquatic toxins: H411, H412, H413○ Category 3 acute toxins: H301, H311, H331, EUH070○ Category 2 STOT*: H371, H373

*CMR = Carcinogenic, Mutagenic or toxic to reproduction; STOT = Specific Target Organ Toxicity

C2.- General restricted substances



2.1. Restriction of Substances of Very High Concern (SVHC's)

The wood-based floor covering product shall not contain substances that have been identified according to the procedure described in Article 59(1) of the Regulation (EC) No 1907/2006 (the 'REACH' Regulation) and have been included in the Candidate List for SVHCs at concentrations of greater than 0.10% wt.

No derogation from this requirement shall be given to Candidate List SVHCs present in the product if they are present in the final product in concentrations greater than 0.10%wt.

Assessment and verification

The applicant and/or chemical product supplier shall compile declarations of the non-presence of SVHCs at or above the specified concentration limit for the final product. Declarations shall be with reference to the latest version of the Candidate List published by ECHA^[1]



C2.- General restricted substances



2.2.(a) CLP restriction of substances and preparations used by the wood-based flooring manufacturer

Substances and preparations used by the wood-based floor covering manufacturer during manufacture, assembly or any other treatment of the wood-based floor covering product shall not be classified with any of the CLP hazards listed in Table 2.1. Restricted substances and preparations shall include adhesives, paints, varnishes, wood stains, wood preservatives, resins and sealants.

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

- that the restricted substance or preparation was used in quantities that amount to less than 0.1% of the weight of the wood-based floor covering product weight or relevant component part to which it was applied.
- that the restricted substances and preparations changes its properties upon processing (e.g. becomes no longer bioavailable or undergoes chemical modification) so that the restricted CLP hazards no longer apply and that any unreacted residual content of the restricted substance or preparation is less than 0.10%wt of the wood-based floor covering product or relevant component part to which it was applied.
- that compliance with specific derogation conditions for certain restricted substances or preparations, as set out in Table 2.2 is demonstrated.

C2.- General restricted substances



2.2.(b) CLP restriction of substances and preparations used by suppliers in components of the wood-based chemical

Any individual component part from suppliers used in the wood-based floor covering product that does not come into direct contact with users during normal use shall be considered exempt from the requirements set out in criterion 2.2.b

Suppliers of solid wood, wood-based panels, paper layers or other supplied components shall demonstrate that have not been produced using substances and preparations that are classified with any of the CLP hazards listed in Table 2.1 by providing information about certain substances and preparations used in the production of any adhesives, paints, varnishes, wood stains, wood preservatives, resins and sealants.

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

- that the restricted substance or preparation was used in quantities that amount to less than 0.1% of the weight of the wood-based floor covering product weight or relevant component part to which it was applied.
- that the restricted substances and preparations changes its properties upon processing (e.g. becomes no longer bioavailable or undergoes chemical modification) so that the restricted CLP hazards no longer apply and that any unreacted residual content of the restricted substance or preparation is less than 0.10%wt of the wood-based floor covering product or relevant component part to which it was applied.
- that compliance with specific derogation conditions for certain restricted substances or preparations, as set out in Table 2.2 is demonstrated.



C2.- General restricted substances



Table 2.2. Derogations to the hazard restrictions in Table 2.1 and applicable conditions.

Chemical product type	Applicability	Derogated classification	Derogation conditions*
(a) biocides/preservatives	Treatment of wooden materials and components to be used in the final product	All group 3 hazard listed in Table 2.1	Only permitted if the paint or varnish formulation and any active substance(s) it contains are approved under Product Type 6 as per the requirements of the Biocidal Products Regulation (EU) No 528/2012
(b) flame retardants		H317(1B), H373, H411, H412, H413	The product must be intended to be used in applications in which it is required to meet fire protection requirements in ISO, EN, Member State or public sector procurement standards and regulations

*Note that no preparations containing concentrations greater than 0.1%w/w of SVHCs listed in the latest version of the Candidate List at the time of application may be derogated.

C2.- General restricted substances



Assessment and verification

The applicant shall provide a declaration of compliance with criterion 2.2.a, supported by a list of all the preparations used by the wood-based floor covering manufacturer during the production, assembly and any treatment of the wood-based floor covering product together with their hazard classification (if any).

The applicant shall compile declarations of compliance with criterion 2.2.b from suppliers of any of the defined component materials. These declarations shall be supported by lists of any relevant substances and preparations used and their hazard classifications (if any).

The following information shall be provided in relation to the hazard classifications or non-classification for each substance and preparation:

- i. the substance's CAS^[5], EC^[6] or list number
- ii. the physical form and state in which the substance is used
- iii. harmonised CLP hazard classifications
- iv. self-classification entries in ECHA's REACH registered substance database^[7]

Self-classification entries from joint submissions shall be given priority when comparing entries in the REACH registered substance database.

C2.- General restricted substances



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

- Toxicological studies and hazard assessment by ECHA peer regulatory agencies⁽⁸⁾, Member State regulatory bodies or intergovernmental bodies
- A Safety Data Sheet (SDS) completed in accordance with sections 2, 3, 9, 10, 11 and 12 of the Annex II of the Regulation (EC) No 1907/2006
- A documented expert judgement 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
- An attestation, where appropriate based on expert judgment, issued by an accredited conformity assessment body that carries out hazard assessments according to the GHS or CLP hazard classification systems.

Information on the hazardous properties of substances or preparations may, in accordance with Annex XI to Regulation (EC) No 1907/2006, 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.

For both criterion 2.2.a or 2.2.b, as appropriate, where substances or preparations with the restricted hazards listed in Table 2.1 are added in a concentration no greater than 0.10%wt of the final product or are considered to no longer exhibit any restricted hazardous properties in the final product or relevant component part due to physical and/or chemical changes during processing, and residual levels in the final product, or relevant component, can be considered to be present at concentrations less than 0.1% w/w, the applicant shall specifically mention this in their declaration and provide supporting arguments.

For both criterion 2.2.a or 2.2.b, as appropriate, where the use of restricted substances or preparations may be subject to derogation as per Table 2.2, the applicant shall provide proof that all the derogation conditions are met, as described in Table 2.2. Where test reports are required, they shall be valid at the time of application for a production model

C2.- General restricted substances



Example 2: DPL flooring EPD-MWS-20xxxx1-E

Table 2: Material content of the product

Component	Material	mass [%]			Renewable resources	availability	origin
		7 mm	8mm	9mm			
Core	HDF	92.7	92.8	93.7	yes	abundant	Europe
Surface layer Overlay	paper	0.4	0.3	0.3	yes	abundant	Europe
	resin	1.1	1.4	1.2	no	limited	Europe
	corundum	0.3	0.4	0.4	no	abundant	global
Surface layer Decor	paper	1.0	1.0	0.8	yes	abundant	Europe
	resin	1.1	0.9	0.8	no	limited	Europe
Backing	paper	1.4	1.4	1.2	yes	abundant	Europe
Balance paper	resin	2.0	1.8	1.6	no	limited	Europe

Resins

The used amino resins are melamine-urea-formaldehyde resins. Amino resins are thermosetting resins that are cured using heat and pressure. They are made by combining an aldehyde with a compound that contains an amino (-NH₂) group.

Prefere 4638, Dynea	Content	H-phrases
Formaldehyde CAS No 50-00-0	<0.9%	H331, H330, H311, H301, H314, H317 , H351
Melamine Urea formaldehyde polymer	90-100%	

Joint
Research
Centre

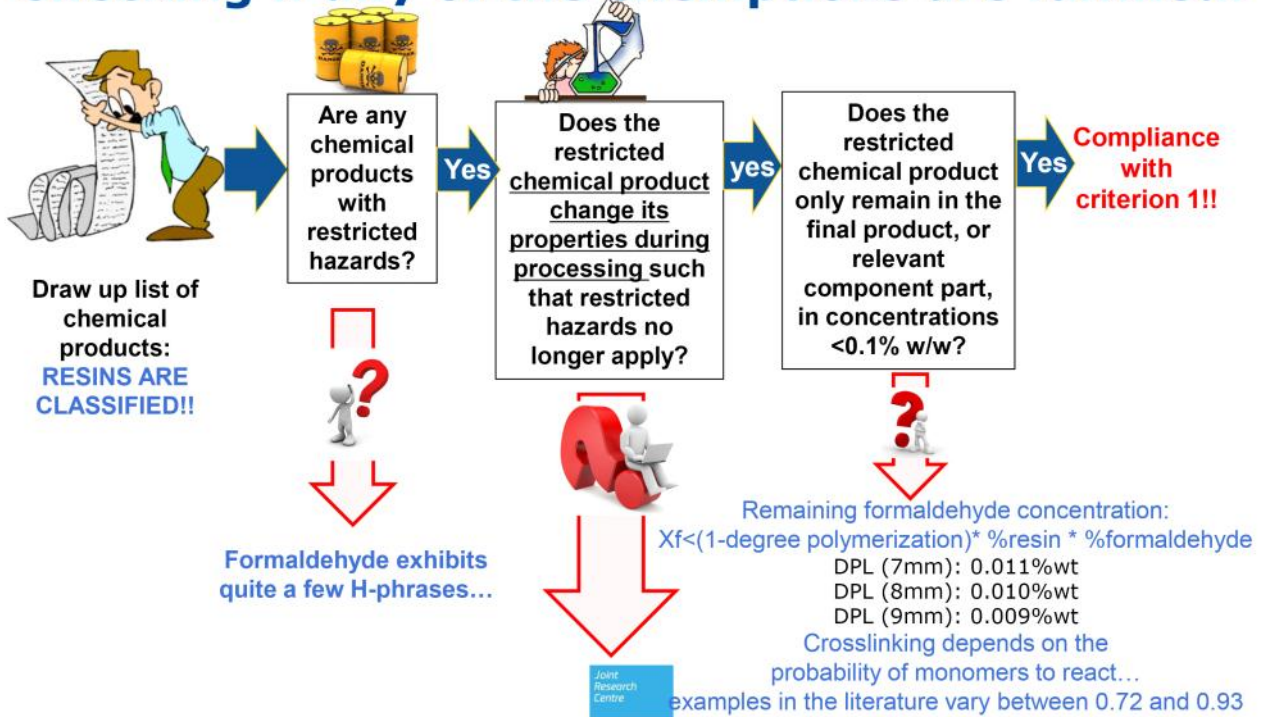
Total amount with classification:

DPL (7mm): $0.009 \times (1.1 + 1.1 + 2.0) = \mathbf{0.0378\%}$
 DPL (8mm): $0.009 \times (1.4 + 0.9 + 1.8) = \mathbf{0.0369\%}$
 DPL (9mm): $0.009 \times (1.2 + 0.8 + 1.6) = \mathbf{0.0324\%}$

Classified substances are below the threshold 0.1%wt

But, what could happen if they were above??

Checking if any of the exemptions are fulfilled:





MUF curing behaviour depends on the processing conditions, but, in general:

1. **Methylation:** melamine and formaldehyde were reacted in a weakly alkaline pH to form various methalolmelamines
2. **Condensation:** methalolmelamines and methylolureas polymerized by forming methylene and methylene-ether bonds in acidic conditions, leading to the formation of large number of oligomers
3. **Some formaldehyde is released** from dimethylene ethers and **cross-linked networking structure were obtained during curing**



The **crosslinking reaction** is an extremely important one [...]. **Crosslinked plastics** are increasingly used as engineering materials because of **their excellent stability toward elevated temperatures and physical stress**. They are **dimensionally stable under a wide variety of conditions due to their rigid network structure**

Source:

1. Zhang et al (2013) "Melamine stage performance" Bioresources 8(4) 5500-5514
2. <http://ce.sysu.edu.cn/echemi/polychem/uploadfiles/%E9%80%90%E6%AD%A5%E8%81%9A%E5%90%88.pdf>

C2.- General restricted substances



Example 2: Bamboo flooring

Name	CAS #	Content (% Weight)
Bamboo (<i>Phyllostachys pubescens</i>)	n.a.	94 - 98 %
Phenol Formaldehyde Resin (PF)	9003-35-4	< 2 %
Emulsion Poly Isocyanate (EPI)	9016-87-9	< 2 %
UV coating / Oil	Bona / Woca	< 2,5 % / < 0,5 %

UV coating	Content	H-phrases
No data found		

Phenolformaldehyde	Content	H-phrases
Phenol-formal	<50%	--
Water	<50%	
Phenol CAS 108-95-2	<3%	H311, H301,H314
Formaldehyde CAS No 50-00-0	<0.9%	H331, H330, H311, H301, H314, H317 , H351

Poly-isocyanate	Content	H-phrases
Styrene butadiene polymer emulsion	10-30%	
Ethylene vinyl acetate polymer emulsion	0-15%	
Calcium Carbonate CAS 1317-65-3	10-25%	
Polyvinyl alcohol CAS 9002-89-5	30-50%	
Water	30-50%	
Surfactant	<1%	

Total amount with classification:

Phenol: $=0.03 \times 2 = 0.06\% \text{ wt}$

Formaldehyde: $0.009 \times 2 = 0.018\% \text{ wt}$

Classified substances are below the threshold 0.1%wt

POINTS FOR DISCUSSION:

- According to criterion 2, concentration limits for hazardous substances shall not exceed 0.10%w/w. It means that, to exceed the threshold, it would be necessary above
 - 2% wt of classified substances in the resin for a flooring of a resin content of approx. 5%wt
 - 5% wt of classified substances in the surface treatment for a flooring with a surface layer that amounts for approx. 2% wt.

Could it be feasible from the producer's viewpoint?

- **Is there any other substance or type of substance to be included into the checklist (functional list)?**

C3.- Specific restricted substances



3.1 Contaminants in recycled wood used in wood-based panels

Any recycled wood chips or wood fibres used in the manufacture of wood-based panels that are used in the wood-based floor covering product shall meet the limits the limits for contaminants defined in the EPF standard for delivery conditions of recycled wood³ as listed in Table 3.1.

Table 3.1. Limit values for delivery conditions if no other national regulations apply

Elements and compounds	Limit values (mg/kg dry panel)	Elements and compounds	Limit values (mg/kg dry panel)
Arsenic	25	Mercury	25
Cadmium	50	Fluorine	100
Chromium	25	Chlorine	1000
Copper	40	Pentachlorophenol (PCP)	5
Lead	90	Tar oils (benzo(a)pyrene)	0.5

Should cork and bamboo be included?

- is EPF standard applicable?
- Are post-consumer cork and bamboo recycled?

Assessment and verification:

The applicant shall provide either:

- a declaration from the wood-based panel supplier that no recycled wood fibres were used in the panel, or
- a declaration from the wood-based panel supplier that all recycled wood fibres used have been tested in accordance with the 2002 "EPF standard conditions for the delivery of recycled wood" supported by appropriate test reports that demonstrate compliance of the recycled wood samples with the limits specified in the table 3.1
- a declaration from the wood-based panel supplier that all recycled wood fibres used have been tested by other 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 wood samples with the limits specified in the table 3.1

In some MS there are mandatory schemes that are stricter than EPF standard Avoidance of double testing

POINTS FOR DISCUSSION:

- Should **cork and bamboo be included** in this criterion?
- Should producer **obligated to comply with any national regulation** that is equivalent or stricter than EPF standard be exempt for this criterion?
- If not, would the wording of this criterion **increase the number and cost of testing of the recycled material used** in floor coverings?
- **Do you have any other proposal?**

C3.- Specific restricted substances



3.b) Wood preservatives

The use of wood preservatives is considered as "not needed" for indoor products

Treatment of wooden components with preservatives shall not be permitted.

Assessment and verification:

The applicant shall provide a declaration of non-use of wood preservatives

3.c) Biocides

The use of biocides is considered "not needed" for indoor products. Only biocides with a preservative function are allowed

Biocides shall not be permitted. Biocides exclusively used for in-can preservation in aqueous coating materials and glues or flame retardants according to criterion 3.d) shall be exempt from this requirement.

Assessment and verification

The applicant shall either:

- Provide a declaration of non-use of biocides
- Provide a declaration stating what biocides or formulation(s) have been used with wood and wood-based materials, supported by SDS from the in-can preservation suppliers.



POINTS FOR DISCUSSION:

Proposal for rewording:

“**wood preservatives**” by “**preservatives**”

“**treatment of wooden components**” by “**treatment of wooden, cork and lignified materials other than wooden components**” or “**treatment of wooden, cork and bamboo components**”

“**wood and wood-based materials**” by “**wood, wood-based materials, cork and bamboo**”

- Are **any preservatives necessarily required** for the indoor wood based floor coverings?
- Are **any biocides necessarily required** for the indoor wood based floor coverings? Would it be better the following wording *“no added biocides for the purposes of adding a final disinfective effect”*?
- Are the **SDS of those formulations enough** to ensure that no other biocidal substances are used?
- Would **any biocide or biocidal product need a derogation** to comply with this criterion? If so, which one and why?

C3.- Specific restricted substances



The use of flame retardants was considered as "not needed".

3.d) Flame retardants

Flame retardants should not be permitted in wood and wood-based materials unless specifically required for the wood-based floor covering to meet fire safety requirements in the country or countries where it is to be sold. Flame retardant substances shall comply with the general hazardous substance requirements set out in Criterion 2.

Assessment and verification

The applicant shall either

- Provide a declaration of non-use of flame retardants or,
- Provide a declaration stating what flame retardant substance(s) or formulation(s) have been used with wood and wood-based materials, supported by SDS from the flame retardant suppliers. The flame retarding substances shall meet the requirements on criterion 2 and being demonstrated in accordance with the "Assessment and verification" requirements of criterion 2.
- Provide evidence that the wood-based floor covering, when treated with flame retardant substance(s) or formulation(s), meets the fire safety requirements in the country or countries where it is to be sold.

Only those required by national legislation and complying with criterion 2 can be used.

POINTS FOR DISCUSSION:

Proposal for rewording: “**wood and wood-based materials**” by “**wood, wood-based materials, cork and bamboo**”

- Are **flame retardants required by any national regulation?**
- If so, **would producers have troubles to comply with this criterion?**
- Would it be necessary to introduce **derogation for some specific flame retardants? If so, which of them and why?**

C3.- Specific restricted substances



3. e) VOCS and formaldehyde in adhesives and resins

Adhesives and/or resins used in manufacturing of the wooden boards should have

- VOC content less than 3% w/w,
- Free-formaldehyde less than 0.2% w/w.

Limits are kept and are stricter than the current criterion as they ensure low emitting finished products

Assessment and verification

The applicant and/or its supplier shall provide the material SDSs or an equivalent declaration of the compliance of this requirement, together with a complete recipe with designation of quantities and CAS numbers for constituent substances.

The content of free-formaldehyde in the resin and/or adhesive formulation shall be in accordance with ISO 11402



C3.- Specific restricted substances: VOCs and formaldehyde in resins



Example 2:
DPL flooring
EPD-MWS-20xxxx1-E

Resins

The used amino resins are melamine-urea-formaldehyde resins. Amino resins are thermosetting resins that are cured using heat and pressure. They are made by combining an aldehyde with a compound that contains an amino (-NH₂) group.

Preferre 4638, Dynea	Content	H-phrases
Formaldehyde CAS No 50-00-0	<0.9%	H331, H330, H311, H301, H314, H317 , H351
Melamine Urea formaldehyde polymer	90-100%	

Free-formaldehyde > 0.2%wt
Criterion 3 failed!!

C3.- Specific restricted substances: VOCs and formaldehyde in resins



Example 3: Bamboo flooring Laminate and HD

Laminated top layer

Phenolformaldehyde	Content	H-phrases	VOC	Data
Phenol-formal	<50%	--		
Water	<50%			
Phenol CAS 108-95-2	<3%	H311, H301, H314	Yes	0,047kPa at 20C 0,133kPa at 40C
Formaldehyde CAS No 50-00-0	<0.9%	H331, H330, H311, H301, H314, H317 , H351	Yes	

High density top layer

Preferre 4638, Dynea	Content	H-phrases
Formaldehyde CAS No 50-00-0	<0.9%	H331, H330, H311, H301, H314, H317 , H351
Melamine Urea formaldehyde polymer	90-100%	

VOC content is <3% wt of the preparation
Criterion 3 passed!!

Free-formaldehyde > 0.2%wt
Criterion 3 failed!!

Directive 1999/13/EC (Solvent Emissions Directive), VOCs are functionally defined as organic compounds having at 293.15 K a vapour pressure of 0.01 kPa or more, or having a corresponding volatility under particular conditions of use





Layer gluing (top layer and bottom layer)

Poly-isocyanate	Content	H-phrases	VOC?	DATA
Styrene butadiene polymer emulsion	10-30%	--	No	298K, 100kPa
Ethylene vinyl acetate polymer emulsion	0-15%	H317	No	Not applicable
Calcium Carbonate CAS 1317-65-3	10-25%	--		Solid state
Polyvinyl alcohol CAS 9002-89-5	30-50%	--	No	Not applicable
Water	30-50%	--		
Surfactant	<1%	--		

No free-formaldehyde content
 No VOCs
Criterion 3 passed!!

Directive 1999/13/EC (Solvent Emissions Directive), VOCs are functionally defined as organic compounds having at 293.15 K a vapour pressure of 0.01 kPa or more, or having a corresponding volatility under particular conditions of use



POINTS FOR DISCUSSION:

Proposal for rewording: **"wooden boards" by "floor covering core board" or just "floor covering"**

- Are those kinds of adhesives with **concentrations of VOCs and formaldehyde higher than 3% and 0.2% w/w respectively widely used in the wood based floor covering manufacturing?**
- Would it be necessary to introduce derogation for some specific substances? If so, which of them and why?
- Would it be better to allow the **compliance of this criterion if the product complies with criterion 6.1 "indoor climate"** where the emissions coming from the final product are verified?

C3.- Specific restricted substances



3.6 Heavy metals in paints and varnishes

Paints and varnishes used on wood and wood-based materials shall not contain additives based on cadmium, lead, chromium VI, mercury, arsenic, barium, selenium, antimony or cobalt at concentrations exceeding 0.010% w/w for each individual metal in the in-can paint or varnish formulation.

Assessment and verification

The applicant shall declare that the paint or varnish formulations do not contain the aforementioned heavy metals in concentrations $> 0.010\%$ w/w and provide the respective SDS from the suppliers of the coating substances used.



C3.- Specific restricted substances



3.7 VOC content in surface treatment (paints and varnishes)

It shall not be necessary to meet the requirements of this sub-criterion if compliance with criterion 6.1 can be demonstrated

The VOC content in the surface treatment preparations (eg. paints and varnishes) used to coat any wood and/or wood-based panels used in the wood-based floor covering product shall not exceed 5% w/w (in-can substance concentration).

However, higher VOC content coatings may be used, if it can be demonstrated that the total quantity of VOCs in the surface treatment preparation to be applied during the coating operation amount to less than 2g/m^2 of the coated surface area.

Assessment and verification

The applicant shall provide a declaration of compliance, specifying whether the compliance is achieved because the wood based floor covering product is exempt from the criterion or if it is achieved by the controlled use of VOCs in the coating operation.

In the latter case, the declaration by the applicant shall be supported by information from the surface treatment preparation supplier stating the VOC content and density of the surface treatment preparation (g/l) and a calculation of the effective percentage VOC content

If the VOC content of the surface treatment preparation is greater than 5% (in-can concentration), then the applicant shall provide calculations demonstrating that the effective quantity of VOCs applied to the coated surface area of the final wood-based floor covering product is $< 2\text{g/m}^2$, in accordance with the guidance provided in Appendix I.

POINTS FOR DISCUSSION:

- Is the **limit of total VOC content < 5% w/w (in-can preparations) appropriate?**
- Which **value of applied quantity would you suggest to ensure that the final product meets all the needed technical requirements** and at the **same time has an outstanding environmental performance?**
Would 2 g/m² limit be an appropriate benchmark?
- Is the note "**compliance with the VOC emission limits as specified in criterion 6.1**" equivalent to the previous ones or should the criterion be drafted in a different way?

C3.- Specific restricted substances



3.h) Halogens

No halogenated organic compounds may be used (e.g. as binders, flame retardants) in the manufacture of the products, including the materials used in the manufacture (wood-based materials, adhesives, coatings, etc). Paints and varnishes with long chain perfluoroalkyl sulfonates ($>C_6$) and/or perfluorocarboxylic acids ($>C_8$) shall not be used on wood and wood-based materials

Assessment and verification

The applicant shall provide a declaration of non-use of halogenated organic compounds, supported by SDS in the case of the paints and varnishes.



POINTS FOR DISCUSSION:

- Are these **types of halogens widely used** in the wood-based floor covering manufacturing?
- Is the **verification through SDS enough**?

POINTS FOR DISCUSSION:

- Are **plasticizers widely used** in the wood-based floor covering manufacturing?
- Would it **be necessary to introduce a specific criterion** for these substances? If so, do you have any proposal on how the drafting should look like?
- Is there **any other substance or type of substance** to be included into the restriction list? (eg plastic foils in wood-based panels)

C4.- Production process: Energy consumption



The energy consumption shall be calculated as the process energy used for the production of the coverings. The process energy, calculated as indicated in the Appendix IIa, shall exceed the following limits (E = scoring point):

- E > 11.0 for solid wood and laminate floor,
- E > 8.0 for parquet, bamboo and cork floor coverings.

Assessment and verification

The applicant shall demonstrate that the E score has been calculated according to the Appendix IIa instructions and exceeds the limits of this criterion.

Table 4.1. Calculation of the scoring point

Formula	Maximum requirements	
	$E = \frac{A}{20} + \left(5 - \frac{B}{3}\right) + \left(5 - \frac{C}{7}\right)$	A
	B	15 kWh/m ²
	C	35 kWh/m ²

Where A is the proportion of renewable fuel (%), B is the electricity consumption (kWh/m²) and C is the fuel consumption (kWh/m²)

The applicant should state:

- Which type(s) of fuel have been used in the manufacture of the wood based floor covering over the past year, and
- Which fuels are coming from renewable sources in accordance with Renewable Energy Directive 2009/28/EC.

In addition, it should be stated how much electricity has been used and how much flooring (m²) has been produced over the past year in accordance with [the instructions](#) given in Appendix IIb.

C4.- Production process: Energy consumption



Example 2: DPL flooring EPD-MWS-20xxxx1-E

Table 4: LCI and LCA results for the production stage

Parameter	Unit per m ²	Thickness of 1m ² laminate flooring		
		7 mm	8 mm	9 mm
Primary energy, non-renewable	[MJ]	118,8	138,8	148,9
Primary energy, renewable	[MJ]	110,3	123,3	141,5

Year of calculations: **20xx**

Total production in this year (m²/year): **8000 m²/year**

but data are in 1m² of DLP flooring

Total electricity purchase (kWh/year): **99360kWh/m²**

Total fuel purchase: **2.21 kg of NG/m²**

	MJ/kg	MJ/m ²	kWh/m ²	kWh/m ²
Natural gas non-RE	47.2	104.2	28.94	23.15
Wood chips (25%mc) RE	13.8	141.5	39.22	7.89
Electricity (grid)	--	44.7	12.42	4.97
TOTAL		290.4	80.67	36.01

	Formula	Value
A	$\frac{\sum MJ_{\text{Fuels classified as RE}}}{\sum MJ}$	1.34
B	$\frac{\text{Total electricity purchase } (\frac{kWh}{year})}{\text{Total production } (\frac{m^2}{year})}$	4.97
C	Total kWh/m ² (fuels)	23.15

Additional assumptions:

Renewable energy from wood chips
Non-renewable energy coming from:

- Natural gas: 70%
 - Electricity: 30%
- Total production: 8000 m²/year

Additional assumptions:

Conversion factor primary to secondary energy:

- Natural gas: 1.25
- Electricity: 2.5
- Wood: 5

$$E = 5.72 < 11$$

Criterion 4 failed!!

It is needed:

- **Lower Econsumption**
- **Higher RE**
- **Lower electricity use**

C4.- Production process: Energy consumption



Example 3: Bamboo flooring

25% of the energy is coming from RE

Year of calculations: 20xx

Laminate bamboo flooring:

	MJ/kg	MJ/m ²	kWh/m ²
Non-RE	--		
RE	--		
Electricity (grid)	3.82	26.70	7.42
TOTAL			

	Formula	Value
A	$\frac{\sum MJ_{\text{Fuels classified as RE}}}{\sum MJ}$	0
B	$\frac{\text{Total electricity purchase } (\frac{kWh}{\text{year}})}{\text{Total production } (\frac{m^2}{\text{year}})}$	7.42
C	Total kWh/m ² (fuels)	0

E = 7,52

E < 8 for bamboo flooring
Criterion 4 failed!!

High density bamboo flooring:

	MJ/kg	MJ/m ²	kWh/m ²
Non-RE			
RE	0.97	6.74	1.87
Electricity (grid)	2.89	20.21	5.61
TOTAL			

	Formula	Value
A	$\frac{\sum MJ_{\text{Fuels classified as RE}}}{\sum MJ}$	0.25
B	$\frac{\text{Total electricity purchase } (\frac{kWh}{\text{year}})}{\text{Total production } (\frac{m^2}{\text{year}})}$	5.61
C	Total kWh/m ² (fuels)	0

E = 8,14

E < 8 for bamboo flooring
Criterion 4 passed!!

C4.- Production process: Waste management



The producer shall:

- a) Sort waste at source into the fractions that arise during the production, and
- b) Draw up an appropriate waste minimization management programme stating waste fractions and describing and implemented processes to deal with and to minimise waste originated from the production process through recovery and reuse or reprocessing.
- c) Implement the waste minimization management programme for at least the year prior to the EU Ecolabel application and demonstrate its good performance

Waste from production with energy content greater than 10 MJ/kg (2.78 kWh/kg dry test) must be recovered, reused or reprocessed.

The waste management programme shall content and annually monitor and report the following information:

- Kind and quantity of waste produced.
- Breakdown of the total waste recovered to type of processes (information about the reuse of waste and secondary materials in the production of new products),
- Initiatives taken to reduce waste production and improve production efficiency,
- Initiatives taken to calculate and reduce the environmental impacts associated with the waste minimization or recovery,
- Initiatives or requirements for suppliers or contract manufactures.

Assessment and verification

The applicant shall provide appropriate documentation showing compliance with these requirements in writing and demonstrating its implementation during the year prior to the EU Ecolabel application.

The documentation should include:

- Description of the facilities to sort waste at source into fractions stating the type of fractions to be sorted out and their capacity.
- Description of the waste minimization processes and procedures implemented and monitored for at least one year prior to the EU Ecolabel application.
- Information in form of mass balance sheets or/and environmental reporting system showing the rates and detail breakdown of recovery achieved for at least one year prior to the EU Ecolabel application and the initiatives taken.

Waste management plan should be already in place:

- Making easy the verification process
- Ensuring the feasibility of this criterion

POINTS FOR DISCUSSION:

Energy consumption:

- Do you consider that the proposed limits are doable?
- Do you have any other proposal?

Waste management minimization plan:

- Is the **limit of energy content (>10 MJ/kg - 2.78 kWh/kg dry test) appropriate?** Can the materials with high energy content be easily identified and tracked along the production process?
- Is the proposed **waste management programme feasible** and **verifiable?** Would it be possible to monitor?
- Would it be **relevant to add a requirement on the energy management in the production facilities?** If so, do you have any proposal on how the drafting should look like?
- Should **organizations certified against ISO 14001 considered as complying with this criterion?**

C5.- Formaldehyde emissions from wood-based panels



This criterion refers solely to wood-based panels. A definition of wood-based panels is included in the [Article 2\(x\)](#)

Formaldehyde emissions from all supplied wood-based panels manufactured using formaldehyde-based resins or finishing agents shall either:

- have formaldehyde emissions that are lower than 50% of the threshold value allowing them to be classified as E1⁵.
- have formaldehyde emissions that are lower than 65% of the E1 threshold limit, in case of MDF (Medium Density Fibreboard) panels.
- have formaldehyde emissions that are lower than the limits set out in the CARB Phase II or 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 panels shall vary depending on the certification scheme it falls under. The verification documentation required for each scheme is described in Table 5.1.

C5.- Formaldehyde emissions from wood-based panels



Table 5.1. Assessment and verification of low formaldehyde emission panels

Certification scheme	Assessment and verification
E1 (as defined in Annex B of the EN 13986)	A declaration from the wood-based panel supplier, stating that the panel is compliant with 50% of E1 emission limits or, in the case 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
CARB- California Air Resources Board: Phase II limits	<p>A declaration from the wood-based panel supplier, supported by third party verified test results according to ASTM E1333 or ASTM D6007, demonstrating panel compliance with the formaldehyde Phase II emission limits defined in the California Composite Wood Products Regulation 93120⁶.</p> <p>Optionally, the wood-based panel may be labelled in accordance with Section 93120.3(e), 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 required if the products were made using no-added formaldehyde or certain ultra-low emitting formaldehyde-based resins).</p>
F-3 or 4 star limits	the applicant shall provide a declaration from the panel supplier 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 test data according to the JIS A 1460 desicator method.

C5.- Formaldehyde from the wooden panel



Example 2:
DPL flooring
EPD-MWS-20xxxx1-E

4.2 Health aspects during usage

xxxxxxx laminate floor coverings fulfil the requirements according to /EN 14041/ (CE marking)

Reaction to fire: C₁-s1

Slip resistance: DS

Formaldehyde emissions: E1

Health related evaluation: approval principles of DIBt (Deutsches Institut für Bautechnik) for the Health-Related Evaluation of Construction Products are fulfilled (Z-156.606-464)

xxxxxxx GmbH laminate floorings described in this EPD are awarded by Blue Angel.



Low-Emission Floor Coverings, Panels and Doors for Interiors made of Wood and Wood-Based Materials **RAL-UZ 176**



Low-emission Composite Wood Panels **RAL-UZ 76**
[...] **Formaldehyde emission limit of 0.05 ppm.**



In general, **compliance with Blue Angel RAL-UZ 76** demonstrates that the product fulfils **< 50% E1**. As DPL flooring is made of MDF → **compliance with criterion 5**



C5.- Formaldehyde from the wooden panel

Example 3: Bamboo flooring



Reaction to fire: Class Cfl-s1 (EN 13501-1)

Formaldehyde emission: Class E0 (< 0,025 mg/m³)²⁾ Class E1 (< 0,124 mg/m³, EN 717-1)

Slip resistance: R10 (EN 15676) / R10 (HD) (DIN 51130)

²⁾ E0 Class is an unofficial formaldehyde emission class, but it is commonly used to indicate that the product has a very low emission, not detectable (n.d.) emission or is produced with No Added Formaldehyde (NAF) glues. E0 products automatically qualify for the official E1 Class according to EN 717-1.



Formaldehyde emissions < 50% E1

Compliance with criterion 5



POINTS FOR DISCUSSION:

Proposal for rewording: "**wood-based panels**" by "**wood-based, cork and bamboo panels**"

- Is the criterion appropriate?

C6.1- Finished product: Indoor emissions



The wood-based floor coverings shall not exceed the emission values listed in Table 6.1 measured in a test chamber in accordance with TS/CEN 16516 or equivalent method and ISO EN 16000-3 for the formaldehyde emission value.

Table 6.1. Emission requirements

Compound or substance	Limit Value after 28 day in mg/m ³ air
TVOC*	0.16
TSVOC**	0.016
R-value***	1
Cancerogenic substances	0.004
Formaldehyde	0.04

Reference to
TS/CEN 16516

Removal of VOC
without LCI due to
their lower
importance

* TVOC – total volatile organic compounds, defined as those compounds within the retention range of C₆ to C₁₆ (inclusive)
 ** TSVOC – total volatile organic compounds, defined as those compounds within the retention range of C₁₇ to C₂₂ (inclusive)
 ***R value: total of all quotients (C_i/LCI)_i<1 (where C_i=substance concentration in the chamber air, LCI= LCI value of the substance as defined by the latest data defined under the European Collaborative Action "urban air", indoor environment and human exposure)

Assessment and verification

The applicant shall provide a declaration of compliance, supported by a test report from chamber tests carried according to the ISO 16000 series of standards. Tests carried out according to CEN/TS 16516 shall be considered as equivalent to ISO 16000.

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

Inclusion of
limits on
carcinogenic
substances

The total VOC emissions per product unit basis shall be calculated and separately comply within each limit.

Centre



XXXXXXXXXXXXXXXXXXXX GmbH laminate floorings described in this EPD are awarded by Blue Angel.



Low-Emission Floor Coverings, Panels and Doors for Interiors made of Wood and Wood-Based Materials **RAL-UZ 176**

Table 2: Emission Requirements

Compound or Substance	3 rd Day	Final Value ^d (28 th day)
Total organic compounds within the retention range of C ₆ to C ₁₆ (TVOC)	≤ 3 mg/m ³	≤ 0.3 mg/m ³
Total organic compounds within the retention range of > C ₁₆ to C ₂₂ (TSVOC)	-	≤ 0.1 mg/m ³
Carcinogenic substances ^a	≤ 10 µg/m ³ total	≤ 1 µg/m ³ per single value
Total VOC without LCI ¹⁰	-	≤ 0.1 mg/m ³
R value ¹¹	-	≤ 1
Formaldehyde	-	≤ 0.05 ppm
Ammonia ¹²	-	0.1 mg/m ³

Centre

Assessment:

- a) If the requirements of Blue Angel scheme are just fulfilled, **the DLP flooring does not comply with criterion 6.1**
- b) Number of tests required by Blue Angel are large and include those required by EU Ecolabel → **no additional testing cost**

POINTS FOR DISCUSSION:

- Is it **necessary to test all these proposed kinds of VOCs** (TVOCs, TSVOCs and R-value) and formaldehyde from the finished products to demonstrate that emissions are below the benchmarks?
- **Should any other type of emissions be tested** (eg. and VOC without LCI, etc.)? If so, which are the advisable limits/thresholds?

C6.2- Finished product: Fitness of use



Wooden floor coverings shall achieve at least:

- Class 32 for floor coverings for private use,
- Class 33 for floor coverings for commercial use,

in accordance with standard EN 685 or EN ISO 10874.

Assessment and verification:

The applicant shall provide third party verified test results in accordance with the appropriated standard that demonstrates that the requirement is fulfilled. The test method should be performed in accordance with:

- EN 13329 and EN 12104 (cork tiles) or equivalent for laminate flooring,
- EN 14354 (veneer wood flooring) or EN 438-2 or equivalent for wood flooring including solid wood flooring, factory lacquer wood flooring and parquet flooring,
- EN 687 or equivalent for bamboo flooring.



C6.- Finished product: Fitness for use



Example 2:
DPL flooring
EPD-MWS-20xxxx1-E

The laminate floor coverings described in this EPD meet the requirements of the following use classes according to /EN 13329/.

Thickness of the product	Domestic level of use	Commercial level of use
7mm		
8mm		
9mm		

Assessment:

- a) **Only DLP flooring of 9mm fulfils the EU Ecolabel requirements for Fitness for Use**
- b) Testing performed by the producers → **no additional testing cost**





- Resistance to Indentation - Brinell Hardness: $\geq 4 \text{ kg/mm}^2$ (SP/PP), $> 9,5 \text{ kg/mm}^2$ (HD) (EN 1534)
- Reaction to fire: Class Cfl-s1 (EN 13501-1)
- Formaldehyde emission: Class E0 ($< 0,025 \text{ mg/m}^3$)²⁾ Class E1 ($< 0,124 \text{ mg/m}^3$, EN 717-1)
- Slip resistance¹⁾: USRV 26 (HD) (CEN/TS 15676) / R 10 (HD) (DIN 51130)
- Thermal conductivity: 0,17 W/mK (SP/PP), 0,21 W/mK (HD) (EN 12667)
- Thermal resistance: 0,0588 m²K/W (SP/PP), 0,0471 m²K/W (HD) (EN 12667)
- Use Class: Class 1 (EN 335)
- Critical radiant flux: Class 1 (SP/PP), Class 1 (HD) (ASTM E 648)

Assessment:

- **Resistance to indentation** → ??
- **use class 1:** situation in which the wood or wood-based product is under cover, fully protected from the weather and not exposed to wetting



POINTS FOR DISCUSSION:

- Would it be better **to set up a minimum fitness for use performance on class 32 independently of the use?**
- Do you have any other proposal/comment?

C6.2- Finished product: Maintenance



Maintenance of the products shall be possible without organic based solvents.

Assessment and verification:

The applicant shall provide the maintenance instructions of the product fulfilling the requirement



The common cleaning method for laminate floor coverings is damp mopping. Loose dirt should be removed by means of a dry mop or a vacuum cleaner.

To model the environmental impact of the use stage within the scope of sustainable buildings, the cleaning methods and frequencies described in table 3 are considered:

Table 3: Cleaning instructions

Level of use	Cleaning process	Cleaning frequency (times)	Consumption
domestic	Damp mopping	1 per week	water, surfactants
domestic	Vacuum cleaning	2 per month	electricity
commercial	Damp mopping	4 per week	water, surfactants
commercial	Vacuum cleaning	4 per month	electricity

Assessment:

- a) Only water and surfactants are required for cleaning:
no need for volatile organic compounds

C7.- Information: User information



Criterion 7.1 User information

The product shall be sold with relevant user information on the packaging and/or on documentation accompanying the product, which provides advice on the product's proper installation, use and maintenance and indications to minimize waste at the end of its lifespan. These instructions should be legible or include graphical representation or icons and include information on:

- c) Recommendations for the installation. This information should include all relevant instructions referring to the best environmental installation alternatives. **As appropriate, reference should be made to the necessary preparation of the underlying surface and the auxiliary materials needed, for example, the plastic underlayers or the adhesives and glues that can be used for its installation. In the case that adhesives is to be applied to the complete surface, it must be possible to use an adhesive certified with a Type I Ecolabel or at least a low emission adhesive complying with EMICODE EC1 or equivalent.**
- d) Recommendations for the use and maintenance of the product. This information should highlight all relevant instructions particularly referring to the maintenance and use of products. As appropriate, reference should be made to the features of the product's use under difficult conditions, for example, water absorption, stain resistance, resistance to chemicals, necessary preparation of the underlying surface, cleaning instructions and recommended types of cleaning agents and cleaning intervals. The information should also include any possible indication on the product's potential life expectancy in technical terms, either as an average or as a range value.
- d) An indication of the route of recycling or disposal (explanation in order to give the consumer information about the high possible performance of such a product);

Assessment and verification:

The applicant shall provide a sample of the packaging and/or texts enclosed.

Centre

C7.- Information: Information appearing in the EU Ecolabel



The logo should be visible and legible. The use of the EU Ecolabel is protected in primary EU law. The EU Ecolabel registration/licence number must appear on the product, it must be legible and clearly visible.

The optional label with text box shall contain the following text:

- Certified sustainable wood and wood-based materials,
- Limited hazardous substances used,
- Ultra low emitting product, emissions of formaldehyde lower than 50% E1

Assessment and verification:

The applicant shall provide a sample of the packaging.

Rewording proposal: wood, wood-based materials, cork and bamboo

Most added-value properties of the scheme are the amount of certified sustainable plant materials and the ultra low emitting properties.



POINTS FOR DISCUSSION:

- Should users be given with **information on the product's installation, use and maintenance**? Are all of them relevant for a proper environmental use of this product (and **ensure a long lasting life and outstanding performance**)?
- Shall the **glues used in the installation of the flooring be considered**? Shall the **click system, that avoids the use of chemicals during the installation, be promoted**?
- Is **information on the end-of-life of the product also relevant**?
- Do you miss information on any other point?

- Are **these three aspects the most relevant ones** for this product group? If not, which other aspect do you consider is relevant?

Conclusion, next steps and closure of the AHWG meeting



Next steps? **Following on from this 2nd AHWG meeting**

- **Draft minutes** will be circulated
 - - Please check them for accuracy, we will give a deadline

- Deadlines for **written comments**:
 - **30th JUNE 2015**

- June 2015: EUEB progress report
- Technical Report v3.0~ October 2015





Thanks for your attention



Contact: Alicia Boyano Larriba
Tel. +34 954 48 83 63
e-mail alicia.boyano-larriba@ec.europa.eu

2nd October 2014

Joint
Research
Centre

74