COMMISSION DECISION

of xxxxx

establishing the ecological criteria for the award of the EU Ecolabel for furniture products

(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 Ecolabel[1], 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) Commission Decision 2009/894/EC has established the ecological criteria and the related assessement and verification requirements for wooden furniture products.

(4) In order to better reflect the state of the art of the market for this product group and take into account the innovation that has taken place during the intervening period, it is considered appropriate to modify the scope of the product group and establish a revised set of ecological criteria.

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[1] OJ L 27, 30.1.2010, p. 1.

(5) The criteria aim, in particular, at promoting products that have a reduced environmental impact along their life cycle, which are resource efficient, which are manufactured in a more sustainable way, which use a limited amount of hazardous substances, and which limit the level of hazardous residues in the final product. Since the main environmental impacts of furniture along the life cycle are related to the use of natural resources and energy in manufacture of materials, volatile organic compound emissions from materials and the use of hazardous substances, durable and high quality products with improved performance on these aspects should be promoted. It is therefore appropriate to establish EU Ecolabel criteria for the product group 'furniture'.

(6) The revised criteria as well as the related assessment and verification requirements should be valid for four years from the date of adoption of this Decision, taking into account the innovation cycle for this product group.

(7) Decision 2009/894/EC should be therefore replaced by this Decision.

(8) A transitional period shall be allowed for the producers whose products have been awarded the EU Ecolabel for furniture products on the basis of the criteria set out in Decision 2009//894/EC, so that they have sufficient time to adapt their products to comply with the revised criteria and requirements.

(9) 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

1. The product group `furniture´ shall comprise:

   free-standing or built-in units, which are used for storing, hanging, lying, sitting, eating or working purposes both in domestic or business premises and including both indoor and outdoor furniture. Business purposes shall include all kinds of furniture whose primary function is to be used as furniture, for instance furniture for offices, schools, restaurants, hotels, libraries, theatres, cinemas, etc.

   Products whose primary function is not to be used as `furniture´, for example: streetlights, bike-parks, playground equipment, carpets, sanitary equipment and building products – such as steps, doors, window frames, floor coverings, wall panels.

2. The following products do not lie within the product group scope:

   (a) Mechanical fixtures and fittings, such as screws, nails, wheels and hinges are exempt from compliance with all criteria on materials.

   (b) Wood, wood-based materials, hard plastics and metals if they do not account for more than 3% of the total furniture product weight (excluding packaging).

Article 2

1. For the purpose of this Decision, the following definitions in accordance with ISO 14021:1999) shall apply:

   (a) `**Recycled content**' is defined as the proportion, by mass, of post-consumer and pre-consumer recycled material in a product.´

   (b) ´**Post-consumer recycled content**' is, within a product, the proportion of material recycled from an earlier product which has reached its end of life and/or of industrial waste generated after the earlier product has reached its end-users and has been discarded.´

   (c) The term '**plastics**' used in criterion 5 refers to hard plastics used as structural or functional components in the furniture product but does not apply to other polymers such as melamine-formaldehyde, polyurethane, urea-formaldehyde and soft PVC (faux leather), which are covered in separate criteria.

(d) "**Leather**" is a general term for hide or skin, with its original fibrous structure more or less intact, tanned to make it rot-proof/imputrescible, where hair or wool may or may not have been removed and which may be split into layers or segmented before or after tanning. If a surface coating is applied to leather, it shall be termed "**coated leather**" if the layer should exceed 0.15mm. Any products that involve the mechanical disintegration or tanned hides/skins into fibrous particles, small pieces or powders shall not be termed leather.

(e) For the purposes of criterion 8, textiles are considered as natural fibres (such as cotton, flax and wool), synthetic fibres (such as acrylic, elastane, polyamide, polyester and polypropylene) and man-made cellulose fibres (such as lyocell, modal and viscose). The fibres may be woven together to form fabrics used in the covering of upholstered furniture or simply be used as filling in furniture upholstery.

Article 3

In order to be awarded the EU Ecolabel under Regulation (EC) No 66/2010 a product shall fall within the product group 'furniture´as defined in Article 1 of this Decision and shall comply with the related assessment and verification requirements set out in the Annex to this Decision.

Article 4

The criteria and the related assessment and verificaiton requirements set out in the Annex, shall be valid for four years from the date of adoption of this Decision.

Article 5

For administrative purposes, the code number assigned to the product group 'furniture products' shall be "x".

Article 6

Decisions 2009/894/EC is repealed.

Article 7

1. By derogation from Article 6, applications for the EU Ecolabel for products falling within the product group furniture´ submitted before the date of adoption of this Decision shall be evaluated in accordance with the conditions laid down in Decisions 2009/894/EC.

2. Applications for the EU Ecolabel for products falling within the product group ‘furniture´ submitted within two months after the date of adoption of this

Decision may be based either on the criteria set out in Decision 2009/894/EC, or on the criteria set out in this Decision.

3. Where the Ecolabel is awarded on the basis of an application evaluated in accordance with the criteria set out in Decision 2009/894/EC, that Ecolabel may be used for 12 months from the date of adoption of this Decision.

4. Applications shall be evaluated in accordance with the criteria on which they are based

Article 8

This Decision is addressed to the Member States.

Done at Brussels, x xxx xxxx

For the Commission

Janez POTOČNIK

Member of the Commission

ANNEX

FRAMEWORK

The aims of the criteria

The criteria aim in particular at identifying products that have a lower environmental impact along their entire life cycle, with specific improvements so that they are:

- sourced from more sustainable forms of agriculture and forestry,
- manufactured using less harmful substances,
- designed and specified to be high quality and durable,
- designed for disassembly to facilitate repair or recycling at End-of-Life.

Criteria for awarding the EU Ecolabel to furniture products are split-up as follows:

1. Product description
2. Hazardous substances
3. Wood and wood-based materials
4. Surface treatments and adhesives
5. Plastics
6. Metals
7. Leather
8. Textiles
9. Padding materials / upholstery
10. Glass
11. Final Product
12. Packaging
13. Consumer information.

Appendix I contains a list of derogated hazardous substances and the conditions under which their use is permitted.

Appendix II contains lists of banned dyes and dyes which should be avoided.

Appendix III contains restricted substance lists based on groups of compounds whose intentional use is prohibited or restricted in the manufacture/ processing of furniture or its constituent materials.

Appendix IV contains a list of restricted substances allowed in the final furniture product or constituent materials used in its manufacture

Appendix V provides guidance for calculating the quantity of VOC applied to coated surfaces.

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 his supplier(s) and/or their suppliers, etc., as appropriate. Competent bodies shall preferentially recognise tests which are accredited according to ISO 17025 and verifications performed by bodies which are accredited under EN 45011 and/or ISO 17065 standards. 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. As a 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.

Changes in suppliers and production sites pertaining to licensed products shall be notified to Competent Bodies, together with supporting information to verify ongoing compliance with the license conditions.

The Competent Bodies are recommended to take into account the implementation of recognised environmental management schemes, such as EMAS or ISO 14001, or equivalent, when assessing applications and monitoring compliance with the criteria (note: implementation of such management schemes is not required).

Any furniture material that in total accounts for less than 3 % of the weight of the entire furniture product shall not be required to comply with any relevant criteria. In the case of padding material, relevant criteria shall not apply when the volume of padding material volume represents less than 3 % of the total volume of the entire furniture product.

All textile materials which have been awarded EU Ecolabel for textile as established in Commission Decision xxxx/xx/xx, are considered being automatically compliant with criterion 8.

EU ECOLABEL CRITERIA

Applicants must demonstrate the compliance with the criteria referring to the material composition of the final product, chemical formulations used, production sites and fitness for use of products they wish to carry the Ecolabel.

Criterion 1. Product description

A description of the product shall be provided (functional description, for indoor or outdoor use, product name and/or reference code). If various types of the same product are available a description of the subtypes to which the application applies should be given. Information shall be provided on the total weight of the product, the materials used in the product, including fixtures and fittings, and their respective weights.

Assessment and verification

The applicant shall provide a product description, including any relevant technical drawings, to the Competent Body in which the above-described information is included.

Criterion 2. Hazardous substances

(a) Substances of very high concern (SVHC)

According to the Article 6(6) of Regulation (EC) No. 66/2010, the EU Ecolabel may not be awarded if the product if it, or any homogenous part of it contains substances meeting the criteria for classification with the hazard statements or risk phrases specified in Table 1 (as per Regulation (EC) No. 1272/2008[2] or Directive 67/548/EC[3]). The product or homogenous product parts shall not contain substances referred to in Article 57 of Regulation (EC) No. 1907/2006, which establishes the candidate list for SVHC. The risk phrases in the table below generally refer to substances. However, if information on substances cannot be obtained, the classification rules for mixtures apply.

[2] *Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006*

[3] *Directive 67/548/EEC with adjustment to REACH according to Directive 2006/121/EC and Directive 1999/45/EC as amended*

Table 1. List of hazard statements and risk phrases

Acute toxicity	
Category 1 and 2	**Category 3**
H300 Fatal if swallowed (R28)	H301 Toxic if swallowed (R25)
H310 Fatal in contact with skin (R27)	H311 Toxic in contact with skin (R24)
H330 Fatal if inhaled (R23/26)	H331 Toxic if inhaled (R23)
H304 May be fatal if swallowed an enters airways (R65)	EUH070 Toxic by eye contact (R39/41)
H370 Causes damage to organs (R39/23/24/25/26/27/28)	H371 May cause damage to organs (R68/20/21/22)
Specific target organ toxicity	
Category 1	**Category 2**
H317: May cause allergic skin reaction (R43)	H317: May cause allergic skin reaction (R43)
H334: May cause allergy or asthma symptoms or breathing difficulties if inhaled (R42)	H334: May cause allergy or asthma symptoms or breathing difficulties if inhaled (R42)
Carcinogenic, mutagenic or toxic for reproduction	
Category 1A and 1B	**Category 2**
H340 May cause genetic defects (R46)	H341 Suspected of causing genetic defects (R68)
H350 May cause cancer (R45)	H351 Suspected of causing cancer (R49)
H350i May cause cancer by inhalation (R49)	
H360F May damage fertility (R60)	H361f Suspected of damaging fertility (R62)
H360D May damage the unborn child (R61)	H361d Suspected of damaging the unborn child (R63)
H360FD May damage fertility. May damage the unborn child (R60/61/60-61)	H361fd Suspected of damaging fertility. Suspected of damaging the unborn child (R62/63)
H360Fd May damage fertility. Suspected of damaging the unborn child (R60/63)	H362 May cause harm to breast fed children (R64)
H360Df May damage the unborn child. Suspected of damaging fertility (R61/62)	
Hazardous to the aquatic environment	
Category 1 and 2	**Category 3 and 4**
H400 Very toxic to aquatic life (R50)	H412 Harmful to aquatic life with long lasting effects (R52/53)
H410 Very toxic to aquatic life with long-lasting effects (R50/53)	H413 May cause long-lasting effects to aquatic life (R53)
H411 Toxic to aquatic life with long-lasting effects (R51/53)	
Hazardous to the ozone layer	
EUH059 Hazardous to the ozone layer (R59)	

Concentration limits for substances or mixtures which may be or have been assigned the hazard statements or risk phrases listed above, meeting the criteria for classification in the respective hazard classes, and for substances meeting the criteria set out in points (a)[4], (b)[5] or (c)[6] of Article 57 of Regulation (EC) No. 1907/2006, shall not exceed the generic or specific concentration limits determined in accordance with Article 10 of Regulation

[4] Substances meeting the criteria for classification in the hazard class carcinogenicity category 1A or 1B

[5] Substances meeting the criteria for classification in the hazard class germ cell mutagenicity category 1A or 1B

[6] Substances meeting the criteria for classification in the hazard class reproductive toxicity category 1A or 1B, adverse effects on sexual function and fertility or on development

(EC) No. 1272/2008. Where specific concentration limits are determined they shall prevail over the generic ones.

Concentration limits for substances meeting the criteria set out in points (d)[7], (e)[8] or (f)[9] of Article 57 of Regulation (EC) No. 1907/2006 shall not exceed 0.1% by weight in the final product or any homogenous part of it. The same restrictions apply to substances and mixtures used unless specifically derogated.

More stringent limits than 0.1% may apply to certain Article 57d), e) or f) substances that appear on Restricted Substances Lists (RSL's) for specific materials and/or industrial processes. Where these more stringent limits exist in RSL's, they shall take precedence over the general 0.1% limit specified here.

(b) Derogations that apply to substance groups

Substances or mixtures which change their properties through processing and thus become no longer bioavailable, or undergo chemical modification in a way that removes the previously identified hazard may be exempted from criterion 2(a).

Following the text of Article 6(7) of the Ecolabel Regulation (No. 66/2010), derogations have been granted for defined groups of substances under certain conditions. These derogations are set out in Appendix I and stipulate the hazard classification that are derogated and the conditions that apply.

However, **no derogation** for excluded substances shall be granted to substances identified as substances of very high concern and included in the candidate list provided for in Article 59(1) of Regulation (EC) No. 1907/2006[10]. This applies to their presence in the furniture product or in any homogeneous part of the furniture product in concentrations higher than 0.1% w/w. Specific concentrations limits determined in accordance with Article 10 of Regulation (EC) No. 1272/2008 shall apply in cases where the concentration is lower than 0.1%.

[7] Substances which are persistent, bioaccumulative and toxic

[8] Substances which are very persistent and very bioaccumulative

[9] Substances — such as those having endocrine disrupting properties or those having persistent, bioaccumulative and toxic properties or very persistent and very bioaccumulative properties, which do not fulfil the criteria of points (d) or (e) — for which there is scientific evidence of probable serious effects to human health or the environment which give rise to an equivalent level of concern to those of other substances listed in points (a) to (e) and which are identified on a case-by-case basis

[10] http://echa.europa.eu/chem_data/authorisation_process/candidate_list_table_en.asp

(c) Dyes and pigments

Dyes and/or pigments can be used in paints, plastics, textiles, leather and in some cases foam upholstery in furniture. Criteria 2a) shall be respected. The following specific restrictions that apply to dyes and pigments are mentioned below:

i. Pigments based on Lead, Mercury, Cadmium, Chromium and Antimony shall not be used.

ii. Chrome mordant dyes shall not be used.

iii. Dyes that are carcinogenic aromatic amines (see Table 9 in Appendix II for a list of compounds) shall not exceed 30mg/kg in final **textile and leather materials** in tests conducted according to EN 14362-1 and -3. The limit applies to individual compounds listed in Appendix II. As a guide to complying with the above limit, an indicative list of dyes that can potentially cleave to form the aforementioned carcinogenic aromatic amines, and whose use is recommended to be avoided altogether, is provided in Appendix II.

iv. Dyes that are carcinogenic, mutagenic or toxic to reproduction (CMR) or potentially sensitising shall not be used in any furniture materials (see Appendix II for a list of specific dye formulations).

v. Halogenated dyeing accelerants (carriers) shall not be used to dye synthetic fibres and fabrics or polyester-wool blends.

Assessment and verification

The applicant shall provide a declaration from suppliers stating any dyes, pigments or carriers used in furniture materials, including their hazard classification, concentration and specifying in what material they were used (e.g. textiles, leather, plastics etc.). The dyes and pigments shall correspond with the text above in points i) to v). Where a derogation is requested, the conditions must be described and correspond with those mentioned in Appendix I. Where dyes are used in textiles or leather, a test report with results of textile or leather analysis according to EN 14362 or EN ISO 17234 for the carcinogenic aromatic amines listed in Appendix II shall be provided.

(d) Biocides

Biocides shall not be permitted in indoor wooden furniture or applied to the surface of any finished material for the purposes of adding a final disinfective effect. Specifically excluded substances for biocidal purposes include; chlorophenols (their salts and esters), polychlorinated biphenyls (PCB's), compounds including Arsenic, Boron or Copper, organotin compounds (including TBT, TPhT, DBT and DOT), dimethylfumarate (DMFu) and

nanosilver. Other biocides shall only be permitted in the following furniture materials and only under the conditions described below:

i. With impregnation of outdoor wooden furniture, they shall fulfil the requirements on hazardous substances in accordance with general criterion 2(a) and contain only active substances included in Appendix IA of the Directive 98/8/EC of the European Parliament and of the Council, and approved under the Biocidal Products Regulation (EC) No. 528/2012 (for product group 8 or 18). Applicants should consult the up to date listing of authorized biocides approved by the European Commission by product type at the following link:

   http://ec.europa.eu/environment/chemicals/biocides/active-substances/approved-substances_en.htm.

   Preservatives for which a dossier has been submitted for evaluation pending a decision on authorization or non-inclusion may be used in the interim period up until the adoption of the Decision.

ii. With wood from logging activities that is stored prior to and after the saw mill stage. The active substance(s) used must comply with the same requirements as described in part i).

iii. With raw hides or semi-finished leather products for preservation during transportation or storage, only biocidal active substances shall be permitted that are approved for use under Regulation No. 528/2012 for use in leather preservation (Product group 9).

iv. With water-borne coating materials, the use of in-can preservatives in shall be permitted so long as the derogation conditions described in Appendix I are complied with.

v. With wool or other animal-based textile coving fabrics, the use of pyrethroids (Permethrin) only at final concentrations of 35-100mg/kg shall be permitted.

Assessment and verification:

The applicant shall provide a dossier supported by declarations from material suppliers, confirming that biocides have not been used or, in the situations described in i) to v) above, stating which biocidal products have been added, what active substance(s) are involved and the relevant concentrations and H classifications / R phrases.

(e) Flame retardants

Flame retardants shall not be permitted in EU Ecolabel furniture materials except for in textiles and upholstery/padding materials. Any flame retardants used shall comply with criteria 2(a) and 2(b).

Only when fire safety regulations would otherwise prevent the placing on the market of a piece of EU Ecolabel furniture, may flame retardants that possess certain hazard statements be used (see Appendix I). A non-exhaustive list of flame retardants that shall not be used is provided in Table 2.

Table 2. A non-exhaustive list of flame retardants that shall not be added intentionally to the product

Name of substance	CAS number	Acronym
Hexabromocyclododecane and all major diastereoisomers	25637-99-4	(HBCDD)
Tris(2-chloroethyl)phosphate	115-96-8	(TCEP)
Alkanes, C10-13, chloro (Short Chain Chlorinated Paraffins)	85535-84-8	(SCCP)
Bis(pentabromophenyl) ether (decabromodiphenyl ether)	1163-19-5	(decaBDE)
Octabromodiphenylether	32536-52-0	octaBDE
Pentabromodiphenylether	32534-81-9	pentaBDE
Polybrominated biphenyls	59536-65-1	PBB
Tri-(2,3-dibromopropyl)-phosphate	126-72-7	TRIS
Tris-(aziridinyl)-phosphinoxide	545-55-1	TEPA

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Assessment and verification

The applicant shall provide a dossier to the Competent Body, supported by declarations from suppliers that no flame retardants have been used in the individual furniture materials. Alternatively, in cases where flame retardants have been added, the chemicals used shall be provided along with concentrations and related H statements / R phrases and comply with the derogation conditions set in Appendix I. A statement saying that the material in question complies with the relevant fire safety standards in the country where the furniture product is to be sold shall also be provided, including results according to the standards accepted in that country.

(f) Plasticisers

In addition to criterion 2(a) on hazardous substances, the following plasticizers shall not be intentionally added to any of the furniture materials:

Table 3. Non-exhaustive list of plasticizers that shall not be added intentionally to the product

Name of substance (acrynom)	EC number	CAS number
Benzyl butyl phthalate (BBP)	201-622-7	85-68-7
Bis (2-ethylhexyl)phthalate (DEHP)	204-211-0	117-81-7
Dibutyl phthalate (DBP)	201-557-4	84-74-2
Diisobutyl phthalate (DIBP)	201-553-2	84-69-5
Dipentyl phthalate (DPP)	205-017-9	131-18-0
N-pentyl-isopentylphthalate	-	776297-69-9
Bis(2-methoxyethyl) phthalate (DMEP)	204-212-6	117-82-8
Diisopentylphthalate (DIPP)	210-088-4	605-50-5
1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich[11] (DIHP)	276-158-1	71888-89-6
Dihexyl phthalate (DHP)	201-559-5	84-75-3
1,2-Benzenedicarboxylic acid, di-C7-11-branched and linear alkyl esters (DHNUP)	271-084-6	68515-42-4
1–2 -Benzenedicarboxylic acid, dipentylester, branched and linear		84777-06-0
Diisononyl phthalate (DINP)*	249-079-5 & 271-090-9	28553-12-0 & 68515-48-0
Diisodecyl phthalate (DIDP)*	247-977-1 & 271-091-4	26761-40-0 & 68515-49-1
Di-n-octyl phthalate (DOP or DnOP)*	204-214-7	117-84-0

(*) only to be counted in furniture products children/babies <36 months of age.

The sum of the prohibited plasticizers listed above shall be lower than 0.1% by weight. For furniture intended for babies and small children, the DINP, DIDP and DnOP shall also be included in the analysis and calculation.

Assessment and verification:

The applicant shall provide to the Competent Body a declaration from the material supplier of non-use of the above compounds, supported by Safety Data Sheets (SDS) of other plasticisers that have been used in the product formulation. In the absence of such a declaration, testing may be requested according to EN ISO 14389 for textile materials...

(g) Other restricted hazardous substances

A number of other hazardous substances are restricted whose functions and purposes can vary widely. More specific information regarding their

[11] Synonyms: C6-8-(branched)-Alkyl phthalate, Diisoheptyl phthalate (DIHP)

restriction can be found in Appendix III, but a general list of the substance groups is as follows:

i. Alkylphenols and their ethoxylate derivatives (APEO's) shall not be used in textile and leather processing (see Table 12 in Appendix III).

ii. Certain organic solvents are banned from use in adhesives, coating chemicals and other substances used in any processes related to furniture manufacture (see Table 13 in Appendix).

iii. Polyfluorinated or perfluorinated treatments (PFC's) shall not be used to impart water, stain or oil repellent properties to any furniture material (see derogations in Appendix I).

iv. The use of short-chain chlorinated paraffins (SCCP C10-13) are banned and medium chain chlorinated paraffins (MCCP C14-17) is restricted (see Table 15 in Appendix III).

v. Polycyclic Aromatic Hydrocarbons (PAH's) in plastics and plastic coatings (see Table 14 in Appendix III).

Assessment and verification:

The applicant shall provide a dossier, supported by declarations of non-use from suppliers and/or the furniture manufacturer. In the absence of a declaration, testing may be requested by the Competent Body according the methods described underneath the relevant Table for each group of restricted substances in Appendix III.

Criterion 3. Wood and wood-based materials

This criterion applies to all wood and wood-based materials, including materials such as bamboo and rattan used in furniture.

(a) Origin, traceability and sustainability of wood and wood based materials

i. All wood and wood-based materials shall be traceable to their origin through chain of custody certificates issued by independent third party certification schemes.

ii. At least 70% of wood in the final furniture product (excluding packaging) shall be covered by valid sustainable forest management certificates issued by an independent third party certification scheme such as FSC, PEFC or equivalent. Recycled wood, following the definition of recycled as given in ISO 14021, shall also be considered as sustainably sourced materials.

Assessment and verification

The applicant shall provide valid, independently certified chain of custody certificates and demonstrate that wood has been grown according to Sustainable Forestry Management principles and/or are from legal and controlled sources. FSC, PEFC or equivalent schemes shall be accepted as independent third party certification. With regards to recycled wood, the geographical origin and nature (pre- or post-consumer) shall be declared and a chain of custody certificate presented.

(b) Free formaldehyde in resin formulations in the production of wood-based materials

The resin formulation (resins/adhesives plus hardeners) used for the production of wood-based panels shall not contain more than **0.2% (w/w) free formaldehyde**.

Assessment and verification

The applicant shall provide test reports in accordance with ISO 11402 that show the resin formulation to contain <0.2% (w/w) free formaldehyde. Additional information such as a MSDS regarding the hazard classification of the resin formulation to demonstrate compliance with the restrictions in criteria 2a) and b) shall also be provided.

(c) Formaldehyde emission from untreated raw wood-based materials:

Where wood-based panels that contain formaldehyde-based resins are used, formaldehyde emissions from panels prior to machining or coating shall be lower than the threshold value allowing them to be classified as E1 as per EN 13986 Appendix B or equivalent methods.

Assessment and verification:

The applicant shall provide a third party certification from an accredited laboratory stating that the wood-based materials and production process is consistent with E1 requirements. Equivalent methods must show a proven correlation between the EN 717-1 chamber test and the equivalent method (examples include EN 120, JAS MAFF 233, ASTM D 6007 and ASTM E 1333).

(d) Contaminants in recycled post-consumer wood

Post-consumer recycled wood fibres shall not exceed the limits for contaminants set out in the "*EPF Standard for delivery conditions of recycled wood*" (2002).

Assessment and verification

Test reports will provide results from the relevant analytical methods specified in the "*EPF standard conditions for delivery of recycled wood*" document showing compliance with the limit values for the contaminants listed in Table 16 of Appendix III.

(e) Genetically modified wood

The product shall not contain GMO wood.

Assessment and verification:

The applicant shall provide a declaration stating that no genetically modified wood has been used.

Criterion 4: Surface treatments and adhesives

Components and fittings that may be subject to physical wear such as hinges, screws and gas-lifts in office chairs are excluded from these requirements.

(a) Paints and varnishes

i. The hazardous substance criteria for criterion 2 shall be respected. For water borne surface coatings, an exemption for biocides exists as described in Appendix I.

ii. The VOC content of surface coating mixtures shall not exceed 5%.

iii. If the VOC content exceeds 5%, then the total content of VOC applied shall be calculated and not exceed 10g/m^2 of coated area for bedroom furniture, 30g/m^2 for other domestic furniture and 60g/m^2 for furniture used in schools, offices and other public buildings. Guidance for the calculation process is provided in Appendix IV.

Assessment and verification

The applicant shall provide documentation such as Material Safety Data Sheets stating the VOC content of any coating substance or mixture that is added directly to the product. If the VOC content is greater than 5%, then the total quantity of VOC applied to the coated surface shall be calculated and be expressed in g/m^2.

(b) Anti-corrosion coatings

General criterion 2 (a) and (b) on hazardous substances shall be respected. Appendix I provides a derogation for the surface treatment of metal for products containing Chromium, Nickel or Zinc labeled with H412 (R52/53).

Suitable components for electroplating are limited to those that are subject to heavy physical wear and not in frequent skin contact with users. Electroplated metals shall not be used in metal arm-rests or handles. Under no circumstances shall Chromium (VI) chemicals be used for any electroplating process.

Assessment and verification

The applicant shall provide a declaration from the metal component supplier regarding any coating or electroplating applied to the material.

(c) Adhesives

The VOC[12] content of adhesives used in the assembly of furniture shall not exceed 3% (w/w). It should be noted that an exemption for R40 substances is granted for isocyanate adhesives under the conditions mentioned in Appendix I.

Assessment and verification

A declaration shall be provided by the applicant indicating all adhesives used in the assembly of furniture, as well as compliance with this criterion.

Criterion 5: Plastics

(a) Marking of plastic parts

Plastic parts with a weight ≥50 g shall be visibly marked in accordance with the requirements of EN ISO 11469 so that materials can be identified to ensure they are able to be recycled, recovered or disposed of in the correct manner at end-of-life.

Assessment and verification

Documented and photographic evidence demonstrating the markings on all plastic components that are marked shall be provided by the applicant. If a component should be categorized under "other polymer type" designation, the applicant will provide data sheets from the supplier that state the nature of the polymer used in any individual plastic parts ≥50g in weight. The nature of the polymer can also be verified by testing samples directly from the final product if necessary.

(b) Hazardous substances

Virgin plastic shall comply with criterion 2 regarding hazardous substances. Any plastic components weighing 50 g or more that involve chlorine containing compounds in their manufacture shall not have a chloride content greater than 50 % by weight. Additionally, where any polyvinyl chloride (PVC) plastic components are used (i.e. in components <50 g) the residual vinyl chloride monomer content must be less than 1 mg/kg. Where any polycarbonate (PC) plastic components are used, the residual bis-phenol-A (BPA) monomer residue must be less than 100 mg/kg.

Assessment and verification

The applicant shall provide a declaration, with supporting evidence from any suppliers where relevant, that no excluded hazardous substances as mentioned in criterion 2 have been used. For any plastics manufactured with the use of chlorine/chloride, the applicant shall provide a declaration from the supplier stating the chlorine/chloride content of the compounded plastic material. In addition, for any PVC components, the final PVC material shall be tested for vinyl chloride monomer impurities according to the headspace-gas chromatography analysis procedure defined in in EN ISO 6401. Any polycarbonate (PC) plastic components should be tested for residual BPA monomer by the following or equivalent methods: the PC is dissolved completely in dichloromethane (10ml per g PC sample weight). Once dissolved, the polymer

[12] VOC shall mean any organic compound having at 293.15 K a vapour pressure of 0.01 kPa or more, or having a corresponding volatility under the particular conditions of use.

fraction is re-precipitated by adding methanol (5ml per g original PC sample weight) and refluxing for approximately 2 hours before filtration. Then after storing the filtrate in a refrigerator for at least 6 hours, it can be analysed by high performance liquid chromatography equipped with fluorescence and UV detectors.

(c) Recyclable plastics

Any plastic polymers used in components ≥50g in weight shall be inherently recyclable due to their physical and chemical properties. This can be checked against a list of known thermoplastic (and hence recyclable) polymers against the label required in criterion 5a). The furniture manufacturer should describe how and where plastic components can be returned at the end-of-life either to their own premises, that of the plastics supplier or an appropriate 3rd party that possesses suitable recycling facilities. Whichever entity permits the return of plastic components must demonstrate the in-house capability to recycle the plastic, or at least a signed agreement with a 3rd party that is capable of recycling the plastic, into new single polymer or mixed polymer products. Thermosets and composite plastics shall not be used in EU Ecolabel furniture under any circumstances if the material cannot be recycled in a similar manner to thermoplastics.

Assessment and verification

The labeling of plastic components as per criterion 5a) shall be sufficient to identify the polymer. The applicant shall provide the Competent Body with a dossier describing the contact details and address(es) of where the plastic components can be accepted for recycling in the same country as where the product was initially placed on the market and a declaration that they will accept such materials with no additional charge. These details shall also be provided in consumer information. Where any 3rd parties are involved in the recycling process and the chain of custody of plastic wastes, signed agreements between the collector of the plastic waste, and any 3rd parties up to the point at which the plastic can be recycled shall be provided.

(d) Recycled content

Additional requirements where the final furniture product (not including packaging) consists of >10% by weight plastic are:

i. Plastic materials (not including packaging) must consist of at least 30% by weight recycled materials for indoor furniture.

ii. Plastic materials (not including packaging) must consist of at least 50% by weight recycled materials for outdoor furniture.

Recycled plastic materials must be sourced either from pre-consumer off-cuts which would otherwise be disposed of as waste and that can be accompanied by a declaration from the producer stating that the off-cuts are free of the banned hazardous substances mentioned in criteria 2c) and 2e) or from post-consumer PE, PP or PET, accompanied by a declaration from the supplier with regards to their origin of collection.

Assessment and verification

The product description mentioned in criterion 1 should specify the overall plastic content (w/w) in the furniture product and whether or not it is intended for outdoor use. Where the plastic content of the furniture product is >10%, a declaration from the manufacturer or plastic supplier stating the proportion of recycled content and stating that the source of the recycled plastic is either: post-consumer polyethylene, polypropylene and polyethylene terephthalate, or pre-consumer production off-cuts that do not contain any of the substances listed in criteria 2c) and 2f).

Criterion 6: Metals

(a) Description of metal used

The type of metal used in any particular component shall be used (i.e. Aluminium, Steel, Copper etc.). Where relevant, the grade of the alloy and the main metals included in the alloy formulation shall be stated.

Assessment and verification

The applicant shall, as part of the product description mentioned in criterion 1, detail the types and weights of metals used in any components in the furniture product.

(b) Hazardous substances

Metal materials used shall respect criteria 2 and criteria 4 regarding the use of hazardous substances and surface treatments respectively.

(c) Recyclable metals

Although all metals are inherently recyclable, the furniture manufacturer shall describe how and where metal components can be returned at the end-of-life, either to their own premises, that of the metal supplier or an appropriate 3rd party that possesses suitable recycling facilities. Whichever entity permits the return of metal components must then demonstrate the in-house capability to recycle the metal, or at least a signed agreement with a 3rd party that is capable of recycling the metal.

Assessment and verification

The applicant shall provide the Competent Body with a dossier describing the contact details and address(es) of where the metal components can be accepted for recycling in the same country as where the product was initially placed on the market and a declaration that they will accept such materials with no additional charge. These details shall also be provided in consumer information. Where any 3rd parties are involved in the recycling process and the chain of custody of metal wastes, signed agreements between the collector of the metal waste, and any 3rd parties up to the point at which the metal can be recycled shall be provided.

(d) Recycled content

Where the total metal content comprises ≥30% (w/w) of the total furniture product weight (not including packaging), the following additional restrictions shall apply depending on what is the type of metal in question:

i. The average recycled content of Aluminium in the furniture must be ≥50% (w/w).

ii. The average recycled content of steel in the furniture must be ≥30% (w/w). Note that different grades of steel are **not** considered as distinct metals for the purposes of this particular criterion.

iii. For any other metal that accounts for at least 3% of the furniture weight, the average declared recycled content in the furniture must be ≥20% (w/w).

Assessment and verification

The product description mentioned in criterion 1 should specify the overall metal content (w/w) in the furniture product. Where the total content of metal exceeds the 30% threshold, the applicant must provide to the Competent Body a declaration of recycled content for all the different metals used that account for at least 3% of the total furniture product weight. This shall include tracing the metal supply back to the smelter or foundry of origin via supply chain documentation. The declared recycled content shall be accepted as the average recycled content of the metal output during the most recent business or calendar year reporting period for which data is available, so long as it is within a maximum of 24 months of the date that the metal was produced.

Criterion 7: Leather

This criterion refers only to leather from animal hides/skins. Faux leather is not included from the product scope.

(a) Animal origin

Raw hides and skins must come from animals that are raised primarily for meat and/or milk production. Endangered or vulnerable species according to International Union for Conservation of Nature (IUCN) Red List of Threatened Species and hides from wild animal populations shall be explicitly excluded.

Assessment and verification

The applicant shall provide a declaration stating that no hides or skins of vulnerable or endangered species according to the IUCN classification are used. Records that demonstrate traceability of the leather back to the tannery, hide distributors and abattoir of origin, shall be presented.

(b) Final effluent discharged from tannery site

(i) The total quantity of Chromium (Cr) present in final effluent leaving the wastewater treatment system for the tannery site (or cluster of sites) must not exceed 1 mg/l.

Assessment and verification

The applicant shall provide a test report regarding the analysis of the final tannery effluent by either EN 1233 or EN ISO 11885 for total Cr and demonstrating compliance with the limit.

(ii) Where final effluent from the wastewater treatment system of a tannery site (or cluster of sites) is discharged directly to the environment, the monthly average value of Chemical Oxygen Demand (COD) of the effluent must not exceed 250 mg/l.

Assessment and verification

The applicant shall provide a test report regarding the analysis of the final tannery effluent by ISO 6060 or equivalent for COD that demonstrates compliance with the limit.

(iii) Where final effluent from the wastewater treatment systems of a tannery site (or cluster of sites) is discharged to the municipal sewerage network, the requirement in part (ii) for COD shall not apply, so long as consent has been approved by the relevant authority and that the municipal wastewater treatment plant is compliant with 91/271/EEC.

Assessment and verification

The applicant shall provide documentation showing the consent for discharge of tannery effluent to the sewerage network and showing that the municipal waste water treatment plant that accepts the effluent is 91/271/EEC compliant.

(c) Final product leather requirements

(i) The total Cr(VI) in final leather shall be below the limit of detection (3 ppm).

Assessment and verification

The applicant shall either declare that the leather was produced using a Chromium-free process or provide a test report demonstrating that no Cr(VI) was detected in the final leather product sample prepared according to EN ISO 4044 and tested according to the method described in EN ISO 17075 or equivalent.

(ii) Total extractable Cr in the final leather shall be < 200 ppm.

Assessment and verification

The applicant shall either declare that the leather was produced using a Chromium-free process or provide a test report demonstrating that extractable Cr was < 200 ppm according to ISO 17072-1 or equivalent.

(iii) The amount of free or partly hydrolysable formaldehyde in the final leather must not exceed 75 ppm.

Assessment and verification

The applicant shall provide a report following testing according to EN ISO 17226-1 or equivalent showing that the limit is complied with.

(iv) The final leather shall not contain residues above the limits (in brackets) of the following substances: chlorophenols (1mg/kg), bromophenols (1 mg/kg) and methylene bis(thiocyanate) (MBT) (5 mg/kg).

Assessment and verification

The applicant shall provide a test report with results following the methods described Appendix 1 of the RAL UZ 148 criteria document (Jan 2010 version) or equivalent methods that show compliance with the limits above.

(v) The tear strength of leather shall be at least 20 N.

Assessment and verification

The applicant shall provide a report following testing according to EN ISO 3377 or equivalent showing that the limit is complied with.

(d) Hazardous substances

The conditions set out in criterion 2 for flame retardants, biocides and dyes permitted in the leather production process shall be respected. In addition, alkylphenols or alkylphenolethoxylates (APEO), perfluorooctanoic acids (PFOA) or perfluorooctane sulphonates (PFOS) shall not be used (see Table 12 in Appendix III for APEO substances).

Assessment and verification

The applicant shall provide a declaration stating that no flame retardants, APEO, PFOS or PFOA have been used in the leather production process and that no biocide has been added to the leather for a final disinfective effect. Any preservatives used during the storage and transport of raw hides or semi-finished leather products shall be declared and comply with criterion 2d) part iii). Any dyes used shall comply with criterion 2c).

Criterion 8: Textiles (fabrics and fibres)

These criteria shall apply to all textile fibres used as coverings but not in padding material unless explicitly stated otherwise. Any textile fibres/fabrics with the EU Flower Ecolabel shall be exempt from the following requirements.

(a) Cotton

Any cotton used in textiles must meet requirements i. and iv. or requirements ii., iii. and iv.:

i. At least 10% of the cotton shall be certified as organic.

Assessment and verification

Organic content should be certified by an independent control body to have been produced in conformity with the production and inspection requirements laid down in Regulation (EC) No 834/2007 the US National Organic Programme or equivalent legal obligations set by trade partners of the EU. Verification shall be provided on an annual basis for each country of origin.

ii. At least 20% of the cotton shall be grown according to Integrated Pest Management (IPM) principles as defined by the UN Food and Agricultural Organisation (FAO) IPM programme, or Integrated Crop Management (ICM)

systems incorporating IPM principles, and shall comply with the pesticide restrictions in part iii) below.

Assessment and verification

The applicant shall provide evidence that the cotton has been grown by farmers that have participated in formal training programmes of the UN FAO or Government IPM and ICM programmes and/or that have been audited as part of third party certified IPM schemes. Verification shall either be provided on an annual basis for each country of origin or on the basis of certifications for all IPM cotton bales purchased to manufacture the product.

iii. Cotton used shall not be sourced from genetically modified plants

Assessment and verification

Non-genetically modified IPM cotton used in combination with organic cotton shall be verified in conformity with Regulation (EC) No. 1830/2003 concerning the traceability and labelling of genetically modified organisms. IPM schemes that exclude genetically modified cotton shall be accepted as proof of compliance for IPM content.

iv. Conventional and IPM cotton shall be grown without the use of the following pesticides:

Alachlor, aldicarb, aldrin, campheclor (toxaphene), captafol, chlordane, 2,4,5-T, chlordimeform, chlorobenzilate, cypermethrin, DDT, dieldrin, dinoseb and its salts, endosulfan, endrin, glyphosulfate, heptachlor, hexachlorobenzene, hexachlorocyclohexane (total isomers), methamidophos, methyl-o-dematon, methylparathion, monocrotophos, neonicotinoids (clothianidine, imidacloprid, thiametoxam), parathion, phosphamidon, pentachlorophenol, thiofanex, triafanex, triazophos .

Cotton shall not contain more than 0.5 ppm in total of the substances listed above.

Assessment and verification

Conventional of IPM cotton shall be tested for the listed substances. A test report shall be provided based on the following methods, where relevant:

US EPA 8081 B (organo-chlorine pesticides, with ultrasonic or Soxhlet extraction and apolar solvents (iso-octane or hexane));

US EPA 8151 A (chlorinated herbicides, using methanol);

US EPA 8141 B (organophosphorus compounds);

US EPA 8270 D (semi-volatile organic compounds).

(b) Elastane

Organo-tin compounds shall not be used to manufacture elastane fibres.

Assessment and verification

The applicant shall provide the Competent Body with a declaration of non-use from the fibre manufacturer(s). For clarity, organo-tin compounds are defined as compounds where a carbon-Tin bond exists in the structure.

(c) Polyamide (Nylon)

Fibres shall be manufactured using a minimum content of 20 % nylon that has been recycled from pre and/or post-consumer waste. This criterion also extends to fibres used in padding materials.

Assessment and verification

Recycled content shall be traceable back to the reprocessing of the feedstock. This shall be verified by independent certification of the chain of custody or by documentation provided by suppliers and processors.

(d) Polyester

Polyester fibres shall comply with at least one of the following requirements:

i. The level of Antimony present in the polyester fibres shall not exceed 260 ppm. Polyester fibres manufactured from recycled PET bottles are derogated from this requirement.

Assessment and verification

The applicant shall either provide a declaration of non-use or a test report using the following test methods: direct determination by Atomic Absorption Spectrometry or Inductively Coupled Plasma (ICP) Mass Spectrometry. The test shall be carried out on a composite sample of raw fibres prior to any wet processing. A declaration shall be provided for fibres manufactured from recycled PET bottles.

ii. Fibres shall be manufactured using a minimum content of 20% PET that has been recycled from pre-consumer and/or post-consumer waste.

Assessment and verification

Recycled content shall be traceable back to the reprocessing of the feedstock. This shall be verified by independent certification of the chain of custody or by documentation provided by suppliers and processors.

(e) Hazardous substances

The textile product and production process shall comply with the restrictions laid out in criterion 2 and where relevant, any derogations specified in Appendix I. In addition, alkylphenolethoxylates (APEO), perfluorooctanoic acids (PFOA) or perfluorooctane sulphonates (PFOS) shall not be used.

Assessment and verification

The applicant shall provide a written declaration, supported by declarations from suppliers, stating compliance with criterion 2, mentioning any specific chemicals and relevant

conditions where a derogation was used and stating that APEO, PFOA and PFOS compounds have not been used.

(f) Final product testing

i. Extractable formaldehyde and heavy metals from the textile fabric by an artificial sweat solution shall not exceed the following limits:

Table 4. Limits for extractable substances in furniture textile fabrics

Compound – limit	
Formaldehyde (75 mg/kg)	Cobalt (1.0* or 4.0 mg/kg)
Antimony (30 mg/kg)	Copper (25* or 50 mg/kg)
Arsenic (0.2* or 1.0 mg/kg)	Lead (0.2* or 1.0 mg/kg)
Cadmium (0.1 mg/kg)	Nickel (1.0* or 4.0** mg/kg)
Chromium (1.0 or 2.0** mg/kg)	Mercury (0.02 mg/kg)

* applies to textiles used furniture designed for small children (<36 months of age)

**the lowest value and the highest limit applies to normal textiles or cases where metal complex dyes have been used.

Assessment and verification

The applicant shall provide results from tests where 5g of material is immersed in 100g of an artificial sweat solution as defined in EN ISO 105-E04:2013 in a water bath at 40°C for 1 hour. The solution is then filtered and analysed by ICP-OES or ICP-MS for the heavy metals listed above. In the case of formaldehyde, testing according to EN ISO 14184-1 shall only be required for textiles where an "easy care finish" has been applied. Otherwise the formaldehyde test is not required and shall be replaced by a declaration of non-use of such substances.

Criterion 9: Padding materials (upholstery)

The criteria below for padding/upholstery foams are aligned with those developed for EU Ecolabel bed mattresses (Decision 2013/xxx/EC). Any padding foam already certified for use in EU Ecolabel bed mattresses shall be exempt from the following criteria. Where textile fibres are used in padding materials, they shall comply with the criteria for textiles mentioned in criterion 8.

(a) Latex foam requirements

i. Where latex foam constitutes at least 5% of padding material used, the limits for restricted substances listed in Table 17 in Appendix III shall be respected.

Assessment and verification

Test reports by the latex foam supplier shall demonstrate that the material complies with the above limits using the appropriate method described below (A-D). These methods are also appropriate for random quality control testing in final furniture products.

For chlorophenols, (Method A): 5g of sample shall be milled and chlorophenols extracted in phenol form (PCP), sodium salt form (SPP) or as esters. The extracts shall be analysed by means of Gas Chromatography using a mass spectrometer or electron capture detector.

For heavy metals, (Method B): A known weight of milled sample material is eluted in accordance with DIN 38414-S4 or equivalent in a ratio of 1:10. The resultant filtrate shall be passed through a 0.45µm membrane filter (if necessary by pressure filtration). The solution obtained shall be examined for the content of heavy metals by an inductively coupled plasma instrument coupled with (optical emission/atomic emission spectrometry or mass spectrometry detectors) or by atomic absorption spectrometry using a hydride or cold vapour process.

For pesticides, Method C: This method is only required where the latex foam is composed of at least 20% natural latex by weight. A 2g sample is extracted in an ultrasonic bath with a hexane/ dichloromethane mixture (85/15). The extract is cleaned up by agitation in acetonitrile or by adsorption chromatography over florisil. Measurement and quantification are determined by gas chromatography with a mass spectrometry or electron capture detector.

For Butadiene, (Method D): A known weight of milled latex foam is placed in a headspace analyser and the gas analysed by gas chromatography with a flame ionisation detector.

ii. Emission of specified volatile organic compounds (semi-volatile organic compounds - SVOC, volatile organic compounds – VOC, and very volatile organic compounds VVOC). Where latex foam is used as padding material, the limits for the compounds listed in Table 5 shall be respected.

Table 5. List of VOC emission limits for latex foams.

SUBSTANCE	**LIMIT VALUE (mg/m³)**
1,1,1 – trichloroethane	0.2
4-Phenylcyclohexene	0.02
Carbon Disulphide	0.02
Formaldehyde*	0.005
Nitrosamines**	0.0005
Styrene	0.01
Tetrachloroethylene	0.15
Toluene	0.1
Trichlorethylene	0.05
Vinyl chloride	0.0001
Vinyl cyclohexene	0.002
Aromatic hydrocarbons (total)	0.30
VOCs (total)	0.5
* Alternatively, the concentration of formaldehyde shall not exceed 20 ppm as measured with EN ISO 14184-1.	
** n-nitrosodimethylamine (NDMA), n-nitrosodiethylamine (NDEA), n-nitrosomethylethylamine (NMEA), n-nitrosodi- i-propylamine (NDIPA), n-nitrosodi- n- propylamine (NDPA), n-nitrosodi- n-butylamine (NDBA), n-nitrosopyrrolidinone (NPYR), n-nitrosopiperidine (NPIP), n-nitrosomorpholine (NMOR)	

Assessment and verification

Test reports by the latex foam supplier shall demonstrate that the material complies with the limits in Table 5 using a test chamber method in accordance with ISO 16000-9 and analytical techniques as described below.

A sample of latex foam shall be wrapped for a period of at least 24 hours prior to being unwrapped and immediately transferred to a test chamber where it is placed on a sample holder that facilitates air access from all sides. The climatic factors of the chamber shall be adjusted as per ISO 16000-9. For comparison of test results, the area specific ventilation rate (q=n/l) shall be 1. The ventilation rate shall be between 0.5 and 1. Air sampling shall be carried out 24 +/-1 hour after loading the sample in the chamber. Air samples will be passed across DNPH cartridges for 1 hour for subsequent analysis of formaldehyde and other aldehydes and for 1 hour on Tenax TA cartridges for the analysis of other volatile organic compounds. Sampling durations may be longer for other compounds but shall in all cases be completed before 30 hours have elapsed in the test.

Analysis of formaldehyde and other aldehydes shall comply with ISO 16000-3. Unless otherwise specified, analysis of other volatile organic compounds shall comply with ISO 16000-6. Tests that follow CEN/TS 16516 methods shall be considered as equivalent to those of the ISO 16000 series.

The analysis of nitrosamines shall be done by means of gas chromatography in combination with a thermal energy analysis detector in accordance with the BGI 505-23 method (formerly ZH 1/120.23) or equivalent.

iii. Dyes shall not be used in the latex foam except where required to distinguish different qualities of foam in the same type of padding material. When dyes are used, they shall comply with the requirements of Criterion 2c) and not include any of the dyes listed in Appendix II.

Assessment and verification

The applicant shall provide a declaration of non-use of dyes from the foam manufacturer or, in case of use, a declaration of compliance with this criterion together with supporting documentation.

(b) Polyurethane (PU) foam

i. Where polyurethane (PU) foam is used as padding material, the limits for the restricted substances as listed in Table 18 of Appendix III shall be respected.

Assessment and verification

The applicant shall provide test reports demonstrating that the foam material complies with the limits stated above using the appropriate method described below (A-E). These methods are also appropriate for random quality control testing in final furniture products.

For biocides, phthalates and other specified substances in Table 18 of Appendix III, the applicant shall provide a declaration from the foam manufacturer confirming that the listed substances have not been intentionally added to the PUR foam material.

For the heavy metals listed in Table 18 of Appendix III, the method consists of eluting a sample of milled PUR foam in accordance with the DIN 38414-S4 procedure or equivalent where the solid:liquid ratio is 1:10. The resultant filtrate shall be passed through a 0.45µm membrane filter (if necessary by pressure filtration). The solution obtained shall be examined for the content of heavy metals by an inductively coupled plasma instrument coupled with (optical emission/atomic emission spectrometry or mass spectrometry detectors) or by atomic absorption spectrometry using a hydride or cold vapour process.

For the total amount of plasticisers, a composite sample of 6 pieces to be taken from beneath each sample face (up to a maximum of 2cm from each face surface) is analysed. Extraction shall be performed with dichloromethane using a validated method and followed by analysis with gas chromatography with a mass spectrometry detector or by high performance liquid chromatography with an ultraviolet detector.

For TDA (2,4-Toluenediamine) and MDA (4,4-Diaminodiphenylmethane) a composite sample of 6 pieces to be taken from beneath each sample face (up to a maximum of 2cm from each face surface) is analysed. Extraction is carried out with 1% aqueous acetic acid solution at sample weight to liquid volume ratio of 1:5 and repeated three further times. The four extracts are then combined and diluted to a known volume, filtered and analysed by high performance liquid chromatography with an ultraviolet detector or mass spectrometry detector.

For Organo-tin substances, a composite sample of 6 pieces to be taken from beneath each sample face (up to a maximum of 2cm from each face surface) is analysed. Extraction shall be performed for 1 hour in an ultrasonic bath at room temperature. The extracting agent shall be a mixture composed as follows: 1750ml methanol + 300ml acetic acid + 250ml buffer (pH 4.5). The buffer shall be a solution of 164g of sodium acetate in 1200ml of water and 165ml acetic acid, to be diluted with water to a volume of 2000ml. After extraction, the alkyl-tin species shall be derivatized by adding sodium tetraethylborate solution in tetrahydrofuran. The derivative shall be extracted with n-hexane and the sample shall be submitted to a second extraction procedure. Both hexane extracts shall combined and further used to determine the organotin compounds by gas chromatography with mass selective detection in SIM modus.

ii. Emission of specified volatile organic compounds (SVOV, VOC, VVOC). Where latex foam is used as padding material, the limits for the compounds listed below shall be respected.

Table 6. Limits for VOC emissions from PU foam samples

SUBSTANCE (CAS NUMBER)	**LIMIT VALUE (µg/m³)**
Formaldehyde (50-00-0)	5
Toluene (108-88-3)	100
Styrene (100-42-5)	50
Each detectable compound classified as categories C1A or C1B according to the Regulation (EC) No 1272/2008	5
Sum of all detectable compound classified as categories C1A or C1B according to the Regulation (EC) No 1272/2008	40
Aromatic hydrocarbons	500
VOCs (total)	500

Assessment and verification

Test reports by the polyurethane foam supplier shall demonstrate that the material complies with the limits in Table 6 using the following procedure or equivalent.

The foam sample is placed on the bottom of an emission test chamber and is conditioned for 3 days at 23°C and 50% relative humidity, applying an air exchange rate (n) of 0.5 per hour and a chamber loading rate (L) of $0.4 m^2/m^3$ (i.e. the total exposed sample surface area divided by the chamber volume in accordance with ISO 16000-9 and 16000-11. Sampling shall be done 72 +/- 2 hours after loading of the chamber and samples collected during a period of 1 hour on Tenax TA and DNPH cartridges for VOC and formaldehyde analysis respectively.

Determination of formaldehyde concentrations shall be determined as per ISO 16000-3. The determination of VOC emissions trapped in the Tenax TA cartridge shall in accordance with ISO 16000-6. Results are semi-quantitatively expressed as toluene equivalents. All results above the limit of 0.001 mg/m^3 shall be reported.

Total VOC content shall be the sum of all individual VOC values with results greater than 0.001 mg/m^3 that elute within the retention time window from n-hexane (C6) to n-hexadecane (C16) inclusive.

The sum of all detectable compounds classified as catergories C1A or C1B according to EC Regulation No. 1272/2008 shall be the sum of all such substances with a concentration $>0.001 mg/m^3$. In case the test results exceed the standard limits, substance specific quantification needs to be reported. CEN/TS tests shall be considered as equivalent to the ISO 16000 series.

iii. Dyes. Dyes shall not be used in the polyurethane foam except where required to distinguish different qualities of foam in the same type of padding material. When dyes are used, they shall comply with the requirements of Criterion 2b) and not include any of the dyes listed in Appendix II.

Assessment and verification

The applicant shall provide a declaration of non-use of dyes from the foam manufacturer or, in case of use, a declaration of compliance with this criterion together with supporting documentation.

iv. Total chlorine content of isocyanates

Should mixed isomers of toluene diisocyanate be used in the production of the PUR foam, the total chlorine content of these isocyanates shall not exceed 0.07% by weight.

Assessment and verification

The applicant shall provide either a declaration of non-use from the foam manufacturer or the results of test methods carried out in accordance with ASTM D4661-93 or equivalent.

v. Blowing agents

Halogenated organic compounds shall not be used as blowing agents or as auxillary blowing agents.

Assessment and verification

The applicant shall provide a declaration of non-use from the foam manufacturer.

Criterion 10: Glass

(a) Recyclability of glass

Although all glass is inherently recyclable, different formulations are not compatible and may melt at different temperatures, ruining entire batches. For this reason, the definition of glass recycling shall extend to the reuse of crushed/milled glass as aggregate in cement based materials, even though this is technically downcycling rather than recycling. The furniture manufacturer shall describe how and where glass components can be returned at the end-of-life, either to their own premises, that of the glass supplier or an appropriate 3rd party that possesses suitable recycling facilities. Whichever entity permits the return of glass components must then demonstrate the in-house capability to recycle the glass, or at least a signed agreement with a 3rd party that is capable of recycling the metal.

Assessment and verification

The applicant shall provide the Competent Body with a dossier describing the contact details and address(es) of where the glass components can be accepted for recycling in the same country as where the product was initially placed on the market and a declaration that they will accept such materials with no additional charge. These details shall also be provided in consumer information. Where any 3rd parties are involved in the recycling process and the chain of custody of glass wastes, signed agreements between the collector of the glass waste, and any 3rd parties up to the point at which the glass can be recycled shall be provided.

(b) Hazardous substances.

All glass shall respect criterion 2a) regarding hazardous substances. Lead glazing and crystal glass are specifically excluded and mirror glass is only permitted up to 10% of the total furniture product weight.

Assessment and verification

The applicant shall provide a declaration from the supplier stating that no hazardous substances have been intentionally used in the manufacture of the glass. In the case of mirror glass, any metals and coating compounds used in the back coating shall be stated.

(c) Recycled content

In furniture items where glass accounts for more than 10% of the total product weight, the average recycled content of glass cullet shall be at least 20%. Recycled cullet is defined as pre-consumer glass that could not be reused within the same process that generated it or post-consumer glass, both of which would otherwise have been discarded as waste.

Assessment and verification

The applicant shall provide a declaration from the supplier stating the recycled cullet content of any glass used in furniture where glass constitutes more than 10% of the product weight. The average recycled glass content shall be at least 20%.

Criterion 11: Final product

(a) Product performance (Durability, safety, strength etc.)

All furniture products shall meet any relevant EN standards establishing requirements for durability, strength, safety, stability, ergonomics, fitness for use and dimensions of furniture and components when relevant. In cases where no applicable EN standards exist, the Competent Body involved shall seek the advice of CEN/TC 207 to determine whether any specific evaluation procedure exists and whether such a procedure should be incorporated into national norms.

Assessment and Verification

Applicants shall provide appropriate test reports by accredited laboratories with ISO 17025 to demonstrate compliance with the corresponding standards".

(b) Design for Reparability/Refurbishment/Re-use

For furniture consisting of multiple components and fittings, the manufacturer shall guarantee the possibility of acquiring spare parts upon request throughout the actual period that the product is manufactured and for an extended period of 5 years after production of the relevant product is stopped.

Reversible assembly methods shall be used in order to allow disassembly and re-use /remanufacturing. The same information shall be included with the product and also be made available online. Assembly and disassembly shall be possible with basic DIY tools and not require special training.

Assessment and Verification

The applicant and/or his supplier shall provide a paper copy with product assembly-disassembly instructions and contact details of how to acquire spare parts. The only exemptions permitted to reversible assembly techniques shall be gluing of wood-based panels or upholstery or other situations where normal fixtures and fittings are not technically

feasible. Nonetheless, at End-of-Life, these components should be inherently separable from the rest of the furniture during disassembly (i.e. when no reassembly is foreseen).

(c) End of Life guidance

Following on from the disassembly instructions described above, the product must also provide information regarding the best practical end-of-life disposal option for each of the furniture components. For certain materials such as PU foam upholstery, this may simply be energy recovery. For other materials, recycling will be more advantageous.

Assessment and verification

For glass, plastic and metals, the applicant can provide the same information as required in criteria 10a), 5c) and 6c) respectively. For textiles, upholstery, solid wood, wood-based panels and leather the applicant shall need to provide rationale for the best practicable environmental disposal option at end-of-life. This should follow the same waste hierarchy principles as described in Article 4 of Regulation No. 2008/98/EC, and take into account the technical options available in the country where the product is to be marketed and sold.

(d) VOC emissions

For any furniture products containing components where volatile organic compound containing paints, varnishes or finishing agents have been used and/or where VOC's applied to certain surfaces exceed 30g/m^2, the VOC emissions from those components or the entire furniture product shall be assessed according to a chamber test and comply with the following limits:

Table 7. Limits for final product VOC testing

Product	**Emissions limits (µg/m³)**	
	3 days	**28 days**
TVOC's	10,000	1,500
SVOC's	-	100
Formaldehyde	-	60
Carcinogens (CMR) - trichloroethylene, - benzene - DEHP - DBP	10 - sum total of the four substances	1 – per individual substance

Assessment and verification

The applicant shall provide a declaration of the chamber test results according to CEN/TS 16516 or EN ISO 16000-9 or equivalent procedures provided from an accredited laboratory. The measurements can be made using larger chambers for the entire assembled product or using smaller chambers which may be more widely available for individual furniture components. In the latter case, the final result shall simply be the sum of all VOC emissions from the individual components tested.

(e) Low energy light bulbs

Any light bulbs that are fitted to EU Ecolabel furniture must be classified as energy class A, in accordance with Regulation No. 874/2012, supplementing Directive

2010/30/EU. A derogation for Mercury in compact fluorescent light bulbs shall apply so long as the bulbs are energy class A.

Assessment and verification

Where the furniture product is supplied with light bulbs, the applicant shall provide product information from the light bulb manufacturer/supplier that states compliance with energy class A as per Regulation No. 874/2012. The applicant must also provide information to both the Competent Body and consumer regarding the correct disposal of light bulbs.

Criterion 12: Packaging

(a) Cardboard / paper

Where cardboard or paper is used for the final packaging, they shall be made of at least 80 % recycled material and shall not have been bleached with Chlorine gas.

(b) Plastic and plastic bags

Where plastic bags are used for the final packaging, they shall be made of at least 75 % of recycled material or they shall be biodegradable or compostable, in agreement with the definitions provided by the EN 13432 or equivalent. All plastics will be easily separable from other materials for recycling purposes.

(c) Other materials

Any other packaging materials must either be:

- recyclable material according to current EU post-consumer schemes
- made of materials sourced from renewable resources
- made of materials with at least 50% recycled content

Assessment and verification:

The applicant shall declare compliance with these requirements and copies of material specifications from packaging material suppliers, shall also be provided to the awarding competent body. Only primary packaging, as defined in European Parliament and Council Directive 94/62/EC is subject to the criterion.

Criterion 13: Consumer Information

The following information shall be made available to customers in documentation that comes with the product.

(a) Documentation supplied with the product

- Product description as per criterion 1.
- Assembly and disassembly instructions

- A list of spare parts with any relevant codes
- Contact details, including at least one email address for technical support and stating where electronic copies of the same product consumer information can be found online.
- Compliance of the final furniture product with any relevant technical standard(s).
- Guidance for cleaning and care of the final product.
- A statement that the use of hazardous substances is restricted in the product
- A declaration of non-use of biocides or, where relevant, which components have been treated.
- A declaration of non-use of flame retardants or, where relevant, which components have been treated.
- The species and origin of any solid wood used.
- The % sustainable certified and % recycled wood contents.
- The type of metal used and where appropriate, it's recycled metal content.
- The type of plastic(s) used and where appropriate, their recycled content.
- The species from which the raw hide for any leather used was sourced.
- The type of textile(s) used and where appropriate, their recycled or organic content.
- The type of upholstery material used.
- The type of glass used and where appropriate, the recycled content.
- Certified organic cotton content of textiles (where appropriate)
- Recycled polyester content of textiles or upholstery (where appropriate)
- End of Life instructions for the best practical environmental disposal route for each furniture component that can be disassembled.
- A statement that that the product can be considered as low VOC emission furniture.

(b) Information on the packaging

The following text shall appear on the packaging:

"For more information as to why this product has been awarded the Flower, please visit the website: http://www.ecolabel.eu

The following text (or equivalent text) shall also appear on the packaging and in the user manual:

"For more information visit the European Eco-label website. Additional information can be obtained at: name/address of the consumer department of the applicant".

(c) Information appearing on the eco-label

- Wood from sustainably managed forests.
- Restricted hazardous substances.

- Promoting renewable, recycled and recyclable materials.
- Design for disassembly and refurbishment/remanufacturing
- Low VOC emission furniture.

Appendix I: List of derogated hazardous substances under certain conditions

The following substances are specifically exempted from the obligation in Article 6(6) of Regulation (EC) No 66/2010 following application of Article 6(7) of the same Regulation.

Table 8. List of derogated hazardous substances and relevant conditions

SUBSTANCE / FUNCTION	DEROGATION CONDITIONS
Flame retardants (H317(1B), H373, H411, H412, H413). **Antimony Trioxide - ATO** (H351)	Applies to **textile fabrics and upholstery foams/filling materials**. The product must be designed in order to meet ISO, EN, Member State or public sector procurement standards and regulations. Any ATO used must be as a catalyst in polyester or as flame retardant synergist in textiles fibres used either in fabrics or filling/upholstery
Optical brightners (H411, H412, H413)	Optical brighteners may only be used in **textile covering fabrics** and specifically for white coloured printing but also when used with polyamide or polyester batches that contain recycled fibres.
Organotin compounds	Only when used as catalysts in the manufacture of **PU foam** and when the concentration limits of organotin residues comply with those set out in Table 18 in Appendix III.
Dyestuff for dyeing and non-pigment printing (H301, H311, H331, H317, H334) H411, H412, H413	Dust free dye formulations and/or automatic dosing and dispensing of dyes shall be used to minimise worker exposure. For reactive, direct, vat and sulphur dyes: Dye houses using these dyes must meet one of the following requirements: - Use of high affinity dyes - Achievement of a reject rate of less than 3.0%. - Use of colour matching instrumentation - Use of standard Operating Procedures for dyeing
Metal complex dyes	Metal complex dyes based on Copper, chrome and Nickel shall only be permitted in the dyeing of: **wool fibres, polyamide fibres or blends of wool and/or polyamide with man-made cellulose-based fibres**.
Water, dirt and stain repellents (H413)	Fluorinated compounds (including PFOA and PFOS) shall not be used as water, stain and oil repellent treatments for furniture materials. Non-fluorinated alternatives shall be readily or inherently biodegradable or eliminable according to relevant standard tests (see footnotes).
Auxillary compounds (e.g. carriers, levelling agents, dispersing agents, surfactants, thickeners and binders). **(**H301, H311, H331, H371, H373,	Applies to **textile fibres** and only when recipes are formulated using automated dosing systems in processes that follow standard operating procedures. Substances classified as H311, H331 or H317(1B) shall not be present in the

H317(1B), H334, H411, H412, H43, EUH070.	final textile covering product at concentrations greater than 1.0% (w/w). At least 95% by weight of any softeners, complexing agents and surfactants shall be readily biodegradable[13], inherently biodegradable[14] or eliminable[15] in wastewater treatment plants according to the relevant OECD or ISO standards. (see footnotes).
N,N-Dimethylacetamide (127-19-5)	Only permitted as residue in textiles containing **elastane and acrylic**. In these cases a maximum residual content of 0.005% (w/w) in the final textile product is permitted and should be verified by testing by solvent extraction followed by gas or liquid chromatography with a mass spectrometer detector.
Metals Nickel (H317, H351, H372) Chromium, Zinc (H412) Mercury (H330,H360,H372,H400, H410)	The substance must be contained in stainless steel. For furniture components likely to come into skin contact with users, the stainless steel must not be Nickel-plated or a resulphurised steel (S content >0.15%). Only when used in anti-corrosive coatings for Iron or steel. Only when used in Compact fluorescent light bulbs and when total concentration represents less than 0.1% of the light bulb.
Glues and adhesives (H351**)** (H304, H317, H334, H341, H362. H371, H373, H400, H410, H411, H412, H413, EUH059, EUH029, EUH031, EUH032, EUH070)	The restriction for H351 substance applies only to isocyanate-based adhesives. All adhesives used shall also comply with criterion 4c).
In-can preservatives in paints and varnishes H331(R23), H400(R50), H410(R50/53), H411(R51/53), H412(R52/53), H317(R43). Limits for specific individual in-can preservatives	In-can preservatives classified with these derogated classifications must also meet the following derogation conditions: • The sum total concentration shall not exceed **<u>0.060% w/w</u>**. • Substances classified with H400 (R50) and/or H410 (R50/53) shall be non-bioaccumulative. Non-bioaccumulative substances shall have a Log Kow ≤ 3.2 or a Bioconcentration Factor (BCF) ≤ 100. • Evidence shall be provided that Authorisation conditions under Directive 98/8/EC and Regulation (EC) N° 528/2012 are respected for the product. Isothiazolinone compounds: • Sum total Isothiazolinone compounds in any product (0.050% w/w) • 1,2-Benzisothiazol-3(2H)-one (BIT): H301(R25)(0.050% w/w) • 2-Octyl-2H-Isothiazol-3-one (OIT): H311(R24)(0.050%w/w) • 5-chloro-2-methyl-4-isothiazolin-3-one (CMIT) / 2-methyl-4-isothiazolin-3-one (MIT): H301(R24), H311(R25)(0.0015 w/w)

[13] Readily biodegradable: (OECD 301 A, ISO 7827, OECD 301 B, ISO 9439, OECD 301 C, OECD 301 D, ISO 10708, OECD 301 E, OECD 301 F, ISO 9408)

[14] Inherently biodegradability: (ISO 14593, OECD 302 A, ISO 9887, OECD 302 B, ISO 9888, OECD 302 C)

[15] Eliminability: (OECD 303A/B, ISO 11733)

Appendix II: Restricted substances list for dyes

Table 9 - Carcinogenic aromatic amine dyes to be tested for by EN 14362-1 and -3

Aryl amine	CAS Number	Aryl amine	CAS Number
4-aminodiphenyl	92-67-1	4,4′-oxydianiline	101-80-4
Benzidine	92-87-5	4,4′-thiodianiline	139-65-1
4-chloro-o-toluidine	95-69-2	o-toluidine	95-53-4
2-naphtylamine	91-59-8	2,4-diaminotoluene	95-80-7
o-amino-azotoluene	97-56-3	2,4,5-trimethylaniline	137-17-7
2-amino-4-nitrotoluene	99-55-8	4-aminoazobenzene	60-09-3
4-chloroaniline	106-47-8	o-anisidine	90-04-0
2,4-diaminoanisol	615-05-4	2,4-Xylidine	95-68-1
4,4′-diaminodiphenylmethane	101-77-9	2,6-Xylidine	87-62-7
3,3′-dichlorobenzidine	91-94-1	p-cresidine	120-71-8
3,3′-dimethoxybenzidine	119-90-4	3,3′-dimethylbenzidine	119-93-7
3,3′-dimethyl-4,4′-diaminodiphenylmethane	838-88-0	4,4′-methylene-bis-(2-chloro-aniline)	101-14-4

Table 10. Indicative list of dyes that may cleave to carcinogenic aromatic amines.

Disperse dyes		Basic dyes	
Disperse Orange 60	Disperse Yellow 7	Basic Brown 4	Basic Red 114
Disperse Orange 149	Disperse Yellow 23	Basic Red 42	Basic Yellow 82
Disperse Red 151	Disperse Yellow 56	Basic Red 76	Basic Yellow 103
Disperse Red 221	Disperse Yellow 218	Basic Red 111	

Acid dyes			
CI Acid Black 29	CI Acid Red 4	CI Acid Red 85	CI Acid Red 148
CI Acid Black 94	CI Acid Red 5	CI Acid Red 104	CI Acid Red 150
CI Acid Black 131	CI Acid Red 8	CI Acid Red 114	CI Acid Red 158
CI Acid Black 132	CI Acid Red 24	CI Acid Red 115	CI Acid Red 167
CI Acid Black 209	CI Acid Red 26	CI Acid Red 116	CI Acid Red 170
CI Acid Black 232	CI Acid Red 26:1	CI Acid Red 119:1	CI Acid Red 264
CI Acid Brown 415	CI Acid Red 26:2	CI Acid Red 128	CI Acid Red 265
CI Acid Orange 17	CI Acid Red 35	CI Acid Red 115	CI Acid Red 420
CI Acid Orange 24	CI Acid Red 48	CI Acid Red 128	CI Acid Violet 12
CI Acid Orange 45	CI Acid Red 73	CI Acid Red 135	

Direct dyes			
Direct Black 4	Direct Blue 192	Direct Brown 223	Direct Red 28
Direct Black 29	Direct Blue 201	Direct Green 1	Direct Red 37
Direct Black 38	Direct Blue 215	Direct Green 6	Direct Red 39
Direct Black 154	Direct Blue 295	Direct Green 8	Direct Red 44
Direct Blue 1	Direct Blue 306	Direct Green 8.1	Direct Red 46
Direct Blue 2	Direct Brown 1	Direct Green 85	Direct Red 62
Direct Blue 3	Direct Brown 1:2	Direct Orange 1	Direct Red 67
Direct Blue 6	Direct Brown 2	Direct Orange 6	Direct Red 72
Direct Blue 8	Basic Brown 4	Direct Orange 7	Direct Red 126
Direct Blue 9	Direct Brown 6	Direct Orange 8	Direct Red 168
Direct Blue 10	Direct Brown 25	Direct Orange 10	Direct Red 216
Direct Blue 14	Direct Brown 27	Direct Orange 108	Direct Red 264
Direct Blue 15	Direct Brown 31	Direct Red 1	Direct Violet 1
Direct Blue 21	Direct Brown 33	Direct Red 2	Direct Violet 4
Direct Blue 22	Direct Brown 51	Direct Red 7	Direct Violet 12
Direct Blue 25	Direct Brown 59	Direct Red 10	Direct Violet 13
Direct Blue 35	Direct Brown 74	Direct Red 13	Direct Violet 14
Direct Blue 76	Direct Brown 79	Direct Red 17	Direct Violet 21

Direct Blue 116	Direct Brown 95	Direct Red 21	Direct Violet 22
Direct Blue 151	Direct Brown 101	Direct Red 24	Direct Yellow 1
Direct Blue 160	Direct Brown 154	Direct Red 26	Direct Yellow 24
Direct Blue 173	Direct Brown 222	Direct Red 22	Direct Yellow 48

Table 11. List of dyes that are CMR or potentially sensitising

Dyes that are CMR (carcinogenic, mutagenic or toxic to reproduction)		
C.I. Acid Red 26	C. I. Direct Black 38	C.I. Disperse Blue 1
C.I. Basic Red 9	C. I. Direct Blue 6	C.I. Disperse Orange 11
C.I. Basic Violet 14	C. I. Direct Red 28	C. I. Disperse Yellow 3
Disperse dyes that are potentially sensitising		
C.I. Disperse Blue 1	C.I. Disperse Blue 124	C.I. Disperse Red 11
C.I. Disperse Blue 3	C.I. Disperse Brown 1	C.I. Disperse Red 17
C.I. Disperse Blue 7	C.I. Disperse Orange 1	C.I. Disperse Yellow 1
C.I. Disperse Blue 26	C.I. Disperse Orange 3	C.I. Disperse Yellow 3
C.I. Disperse Blue 35	C.I. Disperse Orange 37	C.I. Disperse Yellow 9
C.I. Disperse Blue 102	C.I. Disperse Orange 76	C.I. Disperse Yellow 39
C.I. Disperse Blue 106	C.I. Disperse Red 1	C.I. Disperse Yellow 49

Appendix III: Restricted substances lists

Table 12. Restricted substance list for alkylphenols/ethoxylates in leather/textile processes.

Alkylphenol	CAS
Nonylphenol, mixed isomers	25154-52-3
4-Nonylphenol	104-40-5
4-Nonylphenol, branched	84852-15-3
Octylphenol	27193-28-8
4-Octylphenol	1806-26-4
4-tert-Octylphenol	140-66-9
Alkylphenolethoxylates (APEOs)	
Polyoxyethylated octyl phenol	9002-93-1
Polyoxyethylated nonyl phenol	9016-45-9
Polyoxyethylated p-nonyl phenol	26027-38-3

Assessment and verification

A declaration of non-use shall be provided by the applicant and any relevant textile/leather suppliers. In the absence of a declaration, testing may be required according to ISO/DIS 18218-1 (Direct method), ISO 18218-2 (Indirect method) or equivalent.

Table 13. Restricted substance list for organic solvents used in any processes.

Chemical name	CAS	Chemical name	CAS
2-Methoxyethanol	109-86-4	N,N-dimethylformamide	68-12-2
Bis(2-methoxyethyl) ether	111-96-6	4,4'- Diaminodiphenylmethane	101-77-9
1,2,3-trichloropropane	96-18-4	1,2-Dichloroethane; ethylene dichloride	107-06-2
- 2-Ethoxyethanol	110-80-5	Benzene-1,4-diamine dihydochloride	
- Formamide	75-12-7	N,N-dimethylacetamide (DMAC)	127-19-5
N-methyl-2-pyrrolidone; 1-methyl-2-pyrrolidone	872-50-4	Trichloroethylene	79-01-6

Assessment and verification

The applicant shall provide a declaration of non-use, supported by declarations by suppliers.

Table 14. Restricted substance list for Polycyclic Aromatic Hydrocarbons in plastics.

Chemical name	CAS	Chemical name	CAS
Naphthalene	91-20-3	Benzo[a]anthracene	56-55-3
Acenaphthylene	208-96-8	Benzo[b]fluoranthene	205-99-2
Acenaphthene	83-32-9	Benzo[k]fluoranthene	207-08-9
Fluorene	86-73-7	Benzo[a]pyrene*	50-32-8
Phenanthrene	85-1-8	Dibenzo[a,h]anthrancene	53-70-3
Anthracene	120-12-7	Indeno[1,2,3-c,d]pyrene	193-39-5
Fluoranthene	206-44-0	Benzo[g,h,i]perylene)	191-24-2
Pyrene	129-00-0	Benzo[j]fluoranthen	205-82-3
Chrysene	218-01-9	Benzo[e]pyren	192-97-2

Assessment and Verification

The total limit of the combined concentrations of the PAH's listed above shall not exceed 10mg/kg following analysis according to ZEK 01.2-08. The limit of benzo(a)pyrene alone shall not exceed 1mg/kg according to the same method.

Table 15. Restricted chlorinated paraffin compounds in textile/leather manufacture

Substance	Limit
Short chain chlorinated paraffins (C10-13)	Not to be used at all
Medium chain chlorinated paraffins (C14-17)	1000 mg/kg (0.1%) in material

Assessment and verification

The applicant shall provide a declaration of non-use and provide test results in accordance with EN ISO DIS 18219 or equivalent tests.

Table 16. Restricted substances in recycled wood (EPF* standard limits)

Chemical contaminant	Limit value (mg/kg recycled wood)
Arsenic (As)	25
Cadmium (Cd)	50
Chromium (Cr)	25
Copper (Cu)	40
Lead (Pb)	90
Mercury (Hg)	25
Fluorine (F)	100
Chlorine (Cl)	1000
Pentachlorophenol (PCP)	5
Creosote (Benzo(a)pyrene)	0.5

*European Panel Federation "Standard for delivery conditions of recycled wood (2002)".

Assessment and verification

The applicant shall provide appropriate test reports from accredited laboratories using methods defined in the 2002 "EPF Standard conditions for the delivery of recycled wood" that demonstrate compliance of the recycled wood samples with the above limits.

Table 17. Restricted substance criteria for latex foams.

GROUP OF SUBSTANCES	SUBSTANCE	LIMIT VALUE (ppm)
Chlorophenols	mono- and di-chlorinated phenols (salts and esters)	1
	Other chlorophenols	0.1
Heavy metal	As (Arsenic)	0.5
	Cd (Cadmium)	0.1
	Co (Cobalt)	0.5
	Cr (Chromium), total	1
	Cu (Copper)	2
	Hg (Mercury)	0.02
	Ni (Nickel)	1
	Pb (Lead)	0.5
	Sb (Antimony)	0.5
Pesticides* (only applies when natural latex constitutes at least 20% of the foam).	Aldrin	0.04
	o,p-DDE	0.04
	p,p-DDE	0.04
	o,p-DDD	0.04
	p,p-DDD	0.04
	o,p-DDT	0.04
	p,p-DDT	0.04
	Diazinone	0.04
	Dichlorfenthion	0.04
	Dichlorvos	0.04
	Dieldrin	0.04
	Endrin	0.04
	Heptachlor	0.04
	Heptachlorepoxide	0.04
	Hexachlorbenzene	0.04
	Hexachlorcyclohexane	0.04
	Lindane	0.04
	Malathion	0.04
	Methoxichlor	0.04
	Mirex	0.04
	Parathion-ethyl	0.04
	Parathion-methyl	0.04
Others	Butadiene	1

Table 18. List of restricted substances in PU foam in Ecolabel furniture.

	SUBSTANCE (ACRONYM, CAS No., ELEMENT NAME)	LIMIT VALUE
Biocides	Criterion 2 (a), (b) and 2 (c) (ii) on hazardous substances shall be respected.	Not added intentionally
Heavy Metals	As (Arsenic)	0.2 ppm
	Cd (Cadmium)	0.1 ppm
	Co (Cobalt)	0.5 ppm

	Cr (Chromium), total	1 ppm
	Cr VI (Chromium VI)	0.01 ppm
	Cu (Copper)	2 ppm
	Hg (Mercury)	0.02 ppm
	Ni (Nickel)	1 ppm
	Pb (Lead)	0.2 ppm
	Sb (Antimony)	0.5 ppm
	Se (Selenium)	0.5 ppm
Plasticizers	Di-iso-nonylphthalate (DINP, 28553-12-0)	-
	Di-n-octylphthalate (DNOP, 117-84-0)	-
	Di (2-ethylhexyl)-phthalate (DEHP, 117-81-7)	-
	Di-iso-decylphthalate (DIDP, 26761-40-0)	-
	Butylbenzylphthalate (BBP, 85-68-7)	-
	Dibutylphthalate (DIBP, 84-74-2)	-
	Sum	0.01 % w/w
Phthalate plasticizers	Not added intentionally	
TDA and MDA	2,4 Toluenediamine (2,4 TDA, 95-80-7)	5.0 ppm
	4,4‟ Diaminodiphenylmethane (4,4‟ MDA, 101-77-9)	5.0 ppm
Organic tin substances	Tributyltin (TBT)	50 ppb
	Dibutyltin (DBT)	100 ppb
	Monobutyltin (MBT)	100 ppb
	Tetrabutyltin (TeBT)	-
	Monooctyltin (MOT)	-
	Dioctyltin (DOT)	-
	Tricyclohexyltin (TcyT)	-
	Triphenyltin (TPhT)	-
	Sum	500 ppb
Others	Chlorinated or brominated dioxines or furans	Not added intentionally
	Chlorinated hydrocarbons (1,1,2,2-Tetrachloroethane, Pentachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethylene)	Not added intentionally
	Chlorinated phenols (PCP, TeCP, 87-86-5)	Not added intentionally
	Hexachlorocyclohexane (58-89-9)	Not added intentionally
	Monomethyldibromo–Diphenylmethane (99688-47-8)	Not added intentionally
	Monomethyldichloro-Diphenylmethane (81161-70-8)	Not added intentionally
	Nitrites	Not added intentionally
	Polybrominated Biphenyls (PBB, 59536-65-1)	Not added intentionally
	Pentabromodiphenyl Ether (PeBDE, 32534-81-9)	Not added intentionally
	Octabromodiphenyl Ether (OBDE, 32536-52-0)	Not added intentionally
	Polychlorinated Biphenyls (PCB, 1336-36-3)	Not added intentionally
	Polychlorinated Terphenyls (PCT, 61788-33-8)	Not added intentionally
	Tri-(2,3-dibromo-propyl)-phosphate (TRIS, 126-72-7)	Not added intentionally
	Trimethylphosphate (512-56-1)	Not added intentionally
	Tris-(aziridinyl)-phosphinoxide (TEPA, 5455-55-1)	Not added intentionally
	Tris(2-chloroethyl)-phosphate (TCEP, 115-96-8)	Not added intentionally
	Dimethyl methylphosphonate (DMMP, 756-79-6)	Not added intentionally

Appendix IV: Guidance for calculating grams VOC used in surface coatings

The calculation method requires the following information:

- The surface area to be coated per unit.
- The VOC content of the coating compound (in g/L).
- The volume of coating compound present before the coating operation.
- The number of identical units processed during the coating operation.
- The volume of coating compound remaining after the coating operation.
- The efficiency of the coating technique used (see Table 19 below).

Table 19. Efficiency factors* for coating techniques:

Coating technique	Effectiveness	Efficiency factor
Spraying device without recycling	50%	0.5
Spraying device with recycling	70%	0.7
Electrostatic spraying	65%	0.65
Spraying bell/disk	80%	0.8
Roller varnishing	95%	0.95
Blanket varnishing	95%	0.95
Vacuum varnishing	95%	0.95
Dipping	95%	0.95
Rinsing	95%	0.95

*these factors are standard values but other degrees of effectiveness may be used if they can be proven.

An example calculation is as follows:

- The surface area to be coated per unit = **1.5m^2**.
- The VOC content of the coating compound (in g/L) = **120g/L**.
- The volume* of coating compound present before coating operation = **18.5L**.
- The number of identical units processed during the coating operation = **4**.
- The volume* of coating compound remaining after coating operation = **12.5L**
- The efficiency of the **electrostatic spraying** technique used = **0.65.**

Total area coated = 4 x 1.5m^2 = **6m^2**.
Total volume of coating compound used = 18.5 – 12.5 = **6L**.
Total volume* of coating compound on surface = 6L x 0.65 = **3.9L**.
Total VOC applied to surface = 3.9L x 120g/L = **468g**
Total VOC applied per m^2 = 468g/6m^2 = **78g/m^2**.

*note that weight measurements can be used instead of volume so long as the density of the coating compound is known and accounted for in the calculation.

Where more than one coating compound is applied, such as primers or finishing coats, the volumetric consumption and VOC contents should also be calculated and added together.