



Revision of the EU Ecolabel Criteria for Bed Mattresses

TECHNICAL REPORT and PROPOSAL FOR CRITERIA REVISION

**Technical Report
for**

**THE REVISION OF THE EU ECOLABEL CRITERIA
FOR BED MATTRESSES**

Version 4

October 2013

Revision of the EU Ecolabel Criteria for Bed Mattresses

Technical Report

DATE: October 2013

PLACE: Sevilla

DG JRC (IPTS) 2013

DRAFT

Contents

1. Introduction	4
1.1 EU Ecolabel and Revision of the Bed Mattresses Product Group Criteria	4
1.2 Technical Description of Bed Mattresses	6
2. The Commission Decision 2009/598/EC	8
2.1 Existing EU Ecolabel Definition	8
2.2 Summary of Old Criteria	8
3. The revised criteria document	17
3.1 Product Group Definition	17
3.2 Criteria	19
3.3 Other changes applied	75
4 Overview on all the proposal discussed	77
5. Possible issues to consider in the next revision	81
Annex I: Table of Comments	83

1. Introduction

This technical report presents the proposed changes to the EU Ecolabel criteria for the bed mattress product group, as part of the on-going revision process to these criteria.

This report, produced by the Joint Research Centre's Institute for Prospective Technological Studies (JRC-IPTS) and Oakdene Hollins Research & Consulting (UK), provides a description of proposed changes, and outlines the rationale, costs-benefit analysis and necessary test procedures for these changes.

This report follows-on from earlier documents, including a stakeholder consultation document and background report which provide supporting information for the revision on bed mattress markets and discussions of potential changes.^{a,b} The background document has been revised and updated to take into account the feedback from stakeholders and further technical data. The document acts as a reference for the changes outlined in this technical report. All changes included within this document for consideration and discussion are a mixed of entirely new criteria and revisions or updates of existing requirements.

1.1 EU Ecolabel and Revision of the Bed Mattresses Product Group Criteria

The EU Ecolabel is a voluntary scheme, regulated by the European Union^c, which is used to distinguish products and services with high environmental performances. The EU Ecolabel is awarded through an application process which demonstrates that the criteria specified for a particular product group have been met. Successful applicants are then allowed to use the EU Ecolabel logo (the 'Flower') and advertise their product as having been awarded the EU Ecolabel. The environmental criteria for a particular product group are designed in a way that, theoretically, the best 10-20% products on the market in terms of environmental performances can meet them. As technology, markets and legislation change over time, the criteria need to be updated to ensure they remain relevant, as well as strict enough to capture the top 10-20% of products. This approach should also assure that the overall environmental impact of a whole product group is improved.

The existing set of EU Ecolabel criteria for bed mattresses was adopted in July 2009.^d Therefore to ensure that the EU Ecolabel product group criteria for bed mattresses meet these principles a revision processes is on-going, starting in late 2011. Other factors have also been taken into consideration in the process; such as the uptake of the scheme for this product group and changes in the legislative background.

To date, the EU Ecolabel appears to have been very limited interest and uptake within the bed mattress industry based on these old criteria, and only 3 active licences have been identified; Carpenter ApS (certified by Ecolabelling Denmark), Elite SA (certified by VKI Austria) and André Renault (certified by Afnor, France).

Industry stakeholder consultation indicated that the industry is well informed of the existence of the EU Ecolabel for this product group, and this cannot be considered the reason for the limited uptake. Various other reasons were indicated for the limited uptake of the EU Ecolabel, with the following cited explicitly;

- lack of clarity and difficulties in meeting some of the existing criteria of the Commission Decision 2009/598/EC (e.g. flame retardants)
- cost and unclear benefits of applying,

^a http://susproc.jrc.ec.europa.eu/mattresses/docs/BedMattresses_StakeholdersQuestionnaire.pdf

^b http://susproc.jrc.ec.europa.eu/mattresses/docs/BackgroundReportCriteriaRevision_DRAFT.pdf

^c Regulation (EC) No 66/2010

^d Commission Decision 2009/598/EC

- lack of purchaser awareness/demand.

In addition to this, legislative changes have been made at the EU level since the last criteria revision, which need to be reflected in the updated criteria. In particular, the following elements have to be taken into due account:

- **Article 6.1** – Aligning the criteria with the strategic objectives of the Commission on the environmental performance of products.
- **Article 6.3** – Requiring scientific basis to define criteria, specifically through lifecycle analysis methodology.
- **Article 6.6** – To restrict the use of substances which are classified as toxic, hazardous to the environment, carcinogenic, mutagenic or toxic for reproduction
- **Article 6.7** – With respect to Article 6.6, allow the derogation of substances which have no alternative available.

These factors play a key role in the revision of the existing criteria for this product group. In addition, other ecolabelling schemes have similar product groups (see Table 1) which have had more recent revisions, providing further elements to consider when updating the existing EU Ecolabel criteria. This is particularly relevant as Article 6.3.f of the EU Ecolabel Regulation specifies that the EU Ecolabel should align with other schemes to enhance synergies.

Table 1: Summary of identified ecolabels applicable to mattresses

Ecolabel name	Region	Product group	Date of adoption of the latest version	Known licences/ companies awarded
EU Ecolabel	EU	Mattresses	July 2009 ^a	3
Blue Angel	Germany	Mattresses	April 2010 ^b	4
Austrian Ecolabel	Austria	Mattresses	Jan 2011 ^c	4
Nordic Swan	Denmark, Finland, Iceland, Norway, Sweden	Furniture	March 2011 (version 4) ^d	5
Green Mark	Taiwan	Mattresses	September 2011 (version 1.0.1) ^e	14 (products)

^a Commission Decision 2009/598/EC

^b http://www.blauer-engel.de/de/produkte_marken/produktsuche/produkttyp.php?id=309, accessed 09/01/2012

^c http://www.umweltzeichen.at/cms/upload/20%20docs/richtlinien-lf/uz55_r2a-matratzen_2010.pdf, accessed 09/01/2012

^d <http://www.nordic-ecolabel.org/Templates/Pages/CriteriaPages/CriteriaGetFile.aspx?fileID=128603001>, accessed 09/01/2012

^e http://greenliving.epa.gov.tw/GreenLife/eng/E_Criteria.aspx, accessed 09/01/2012

This revision falls at an opportune time to include these factors, as well as include the revised criteria updates due to technical and market changes in the bed mattress sector.

1.1.1 The Revision Process

The revision of the EU Ecolabel criteria for the Bed Mattress product group has been on-going since late 2011, and has followed the pathway outlined below;

- Identification of potential issues, and consultation with stakeholders using a preliminary proposal document
- Generation of a preliminary background report outlining the product group definition and criteria, with issues raised based on market survey and technical information (including lifecycle analysis data), as well as feedback from the preliminary proposal document.
- Background information and proposals for scope and criteria revision were discussed intensively with stakeholders.
- The background report was revised and updated in line with the feedback and suggestions received from stakeholders, as well as additional information added, to yield a strong evidence base for proposing final changes to the scope and criteria for the bed mattress product group.

This technical report draws on the information gathered to date summarising the work done. Following this the proposed revised scope and criteria will be examined. New scope and criteria are defined, and the rationale behind changes, additions or preservation of criteria will be discussed. A cost benefit analysis of changes, and a description and costing of required test procedures is also provided. This evidence will be used as the basis for discussing on the final set of revised criteria.

1.2 Technical Description of Bed Mattresses

Broadly bed mattresses can be viewed as products that provide a surface to sleep or rest upon. At present the EU Ecolabel defines this more closely to include whole products, generally with a cloth cover that is filled with materials, and that can be placed on an existing bed structure.

Mattresses falling into this definition are generally constructed of three components, each designed to provide the desired properties of the mattress;

- The **core** is the main component of a mattress used to provide support. Mattress cores are generally made from one of three materials; steel springs, latex foam, and polyurethane foam (PUR). These materials are the most common method of categorising mattresses.
- The **shell** (or padding/wadding) forms a layer around the core to refine the overall performance of the mattress. All spring mattress and many other types of mattress have this additional padding. Typical materials include: PUR foam, latex foam, horse or camel hair, coconut fibres, polyester, cotton, wool, flax, hemp, felt, jute and sisal. These materials are held together by glue or sewing.
- The **tick** is the outer cover of a mattress which provides a comfortable and protective top layer. Common materials used for the tick include cotton, polyester, silk, wool and viscose. The tick can be fixed to the mattress or removable.

Most mattresses fall within the categories defined by the core materials (i.e. springs, PUR and latex), a further category “other” includes mattresses such as airbeds and water beds, which are not included within the scope of the EU Ecolabel.

Within the existing EU Ecolabel provision is also made for bed bases, i.e. a type of mattress with a wooden/metal frame integrated. Wooden bed bases are typically sold in Scandinavian countries.

DRAFT

2. The Commission Decision 2009/598/EC

2.1 Existing EU Ecolabel Definition

Within the existing EU Ecolabel criteria document^a, mattresses are defined using the following wording:

1. *The product group 'bed mattresses' shall comprise:*
 - a. *Bed mattresses, which are defined as products that provide a surface to sleep or rest upon for indoor use. The products consist of a cloth cover that is filled with materials, and that can be placed on an existing supporting bed structure;*
 - b. *The materials filling the bed mattresses, which may include: latex foam, polyurethane foam and springs;*
 - c. *Wooden bed bases that support the bed mattresses.*
2. *The product group shall include spring mattresses, which are defined as an upholstered bed base consisting of springs, topped with fillings, as well as mattresses fitted with removable and/or washable covers.*
3. *The product group shall not comprise inflatable mattresses and water mattresses, as well as mattresses classified under Council Directive 93/42/EEC (medical devices).*

As described above, this definition includes the most common mattress types (namely latex, PUR and spring), as well some additional product such can be considered hybrid products, between mattresses and beds.

2.2 Summary of Old Criteria

This summary provides as a guide to the existing criteria. The full criteria document (Commission Decision of 2009/598/EC of 9 July 2009) should be consulted for a complete outline. The existing criteria consist of 13 sections, categorised by material type, criteria areas, and other requirements.

^a Decision 2009/598/EC of 9 July 2009

1. *Latex Foam – Only applicable if latex is greater than 5% of mattress weight. Concentrations must be below values stated.*

Criterion number	Applicable to	Criteria	Compliance
1.1	Extractable heavy metals	Limits on concentrations of: Copper <2 ppm Chromium, Nickel <1 ppm Arsenic, Lead, Antimony, Cobalt <0.5 ppm Cadmium <0.1 ppm Mercury <0.02 ppm	Testing by atomic emission spectroscopy with inductively coupled plasma or with hydride or cold vapour technique
1.2	Formaldehyde	Extractable formaldehyde <20 ppm or <0.005 mg/m ³ (dependent on testing method)	EN ISO 14184-1 or chamber testing according to ENV 13419-1, with EN ISO 16000-3 or VDI 3484-1 for air sampling and analysis
1.3	VOCs	VOCs <0.5 mg/m ³	Chamber testing or DIN ISO 16000-6 for air sampling and analysis
1.4	Dyes, pigments, flame retardants and auxiliary chemicals	As Commission Decision 2009/567/EC of 9 July 2009 for textile products. (a) Limits on metal ion impurities in dyes (colour matter with fibre affinity). Exclusion made for metals which are integral part of the dye molecule. (b) Limits on metal ion impurities in pigments (insoluble colour matter without fibre affinity) (c) Chrome mordant dyeing is not allowed (d) Azo-dyes which may cleave any one of a selection of aromatic amines are banned (e) A list of specific dyes which are classed as carcinogens, mutagenic or toxic to reproduction. Limits are also placed on dyes or dye preparations which contain greater than 0.1% by weight of substances which have specified risk phrases associated with them. (f) Potentially sensitizing dyes (listed) are not allowed.	Declaration of non-use or compliance with relevant EU document

Criterion number	Applicable to	Criteria	Compliance
1.5	Metal complex dyes	Metal complex dyes based on copper, lead, chromium or nickel shall not be used.	Declaration of non-use
1.6	Chlorophenols	Chlorophenols (salts and esters) <0.1 ppm mono, di-chlorinated phenols (salts and esters) <1 ppm	Test through gas chromatography of an extracted sample
1.7	Butadiene	Concentration of butadiene <1 ppm	Tested through gas chromatography
1.8	Nitrosamines	Nitrosamines <0.0005 mg/m ³	Tested through chamber test

2. *Polyurethane Foam – Only applicable if PUR foam is greater than 5% of mattress weight.*

Criterion number	Applicable to	Criteria	Compliance
2.1	Extractable heavy metals	As 1.1 – Latex	As 1.1 – Latex
2.2	Formaldehyde	As 1.2 – Latex	As 1.2 – Latex
2.3	VOCs	As 1.3 – Latex	As 1.3 – Latex
2.4	Dyes, pigments, flame retardants and auxiliary chemicals	As 1.4 – Latex	As 1.4 – Latex
2.5	Metal complex dyes	As 1.5 – Latex	As 1.5 – Latex
2.6	Organic tin	Mono and di-organic, tri-organic tin compounds shall not be used.	Declaration of non-use
2.7	Blowing agents	Halogenated organic compounds shall not be used as blowing agents, or auxiliary blowing agents.	Declaration of non-use

3. *Wires and springs – Only applicable if PUR foam contributes to more than 5% of the total weight of the mattress.*

Criterion number	Applicable to	Criteria	Compliance
3.1	Degreasing	A closed system is required when degreasing wire or springs.	Self-declaration
3.2	Galvanisation	Wire and springs must not be coated with	Self-declaration

		a galvanic metallic layer	
--	--	---------------------------	--

4. *Coconut Fibres – Only applicable if coconut fibres contributes to more than 5% of the total weight of the mattress*

Criterion number	Applicable to	Criteria	Compliance
4	Coconut fibres	If rubberised, latex used must comply with criteria for latex foam	As points 1(1) to 1(8)

5. *Wooden Material*

Criterion number	Applicable to	Criteria	Compliance
5.1	Sustainable forest management	<p>Sustainable forest management:</p> <p>a) All virgin solid wood shall originate from forests which are sustainably managed (Sustainable Forest Management and UNCED Forest Principles)</p> <p>b) 60% of virgin solid wood shall originate from forests with certified third party forest certification schemes</p> <p>c) Wood not certified must not originate from</p> <ul style="list-style-type: none"> • disputed land rights or primary old growth forests • illegal harvesting • uncertified high conservation value forests. 	<p>The applicant shall indicate types, quantities and origins of the wood used</p> <p>Certified sources – control chain of custody is required as proof of source</p> <p>Non-certified sources – species, quantity and origin of timber must be provided.</p>
5.2	Formaldehyde emissions from untreated raw wood.	<p>Formaldehyde emissions from untreated raw wood-based materials.</p> <p>Particle board – emissions of formaldehyde shall not exceed 50% of the threshold value that would allow it to be classified as E1 according to EN 312-1.</p> <p>Fibreboard – emissions of formaldehyde shall not exceed 50% of the threshold value that would allow it to be classified as A1 according to EN 622-1. Class A will be accepted if fibreboards represent less than 50% of wood or wood material in</p>	<p>Evidence that wood based materials comply with EN 312-1</p> <p>Evidence that wood based materials comply with EN 13986</p>

		product.	
--	--	----------	--

6. *Textiles (fibres and fabric) – must meet following criteria for dyes and other chemical products, as well as fitness for use*

Criterion number	Applicable to	Criteria	Compliance
6.1	Biocides	Chlorophenols (their salts and esters), PCB and organo-tin compounds shall not be used during transportation or storage of mattresses and semi-manufactured mattresses	Declaration of non-use. Verification by standard test may be required
6.2	Auxiliary chemicals	Alkylphenoethoxylates (APEOs), linear alkylbenzene sulfonates (LAS), bis(hydrogenated tallow alkyl) dimethyl ammonium chloride (DTDMAC), distearyl dimethyl ammonium chloride (DSDMAC), di(hardened tallow) dimethyl ammonium chloride (DHTDMAC), ethylene diamine tetra acetate (EDTA), and diethylene triamine penta acetate (DTPA) shall not be used in any of the preparations or formulations used	Declaration of non-use
6.3	Detergents, fabric softeners and complexing agents	95% by weight of detergents, fabric softeners and complexing agents used at each wet processing site shall be "sufficiently degradable" or eliminable in wastewater treatment plants (see criterion related to auxiliaries and finishing agents for fibres and yarns). This is with the exception of surfactants in detergents at each wet processing site, which shall be "ultimately aerobically biodegradable" (see Regulation (EC) No 648/2004)	Appropriate documentation (safety data sheets, test reports and/or declarations, indicating the test methods and results)
6.4	Bleaching agents	Only for natural fibres, chlorine agents are excluded for bleaching yarns, fabrics and end products.	Declaration of non-use
6.5	Impurities in dyes	As 1.4 Latex	As 1.4 Latex
6.6	Impurities in pigments	As 1.4 Latex	As 1.4 Latex
6.7	Chrome mordant dyeing	As 1.4 Latex	As 1.4 Latex
6.8	Metal	If metal complex dyes based on copper,	Declaration of non-use or documentation and test

Criterion number	Applicable to	Criteria	Compliance
	complex dyes	<p>chromium or nickel are used:</p> <ul style="list-style-type: none"> – In case of cellulose dyeing, where metal complex dyes are part of the dye recipe, less than 20 % of each of those metal complex dyes applied (input to the process) shall be discharged to waste water treatment (whether on-site or off-site). – In case of all other dyeing processes, where metal complex dyes are part of the dye recipe, less than 7 % of each of those metal complex dyes applied (input to the process) shall be discharged to waste water treatment (whether on-site or off-site). – The emissions to water after treatment shall not exceed: Cu 75 mg/kg (fibre, yarn or fabric); Cr 50 mg/kg; Ni 75 mg/kg. 	reports using the following test methods: ISO 8288 for Cu, Ni; EN 1233 for Cr.
6.9	Azo dyes	As 1.4 Latex	As 1.4 Latex
6.10	Dyes that are carcinogenic, mutagenic or toxic to reproduction	As 1.4 Latex	As 1.4 Latex
6.11	Potentially sensing dyes	As 1.4 Latex	As 1.4 Latex
6.12	Colour fastness to perspiration (acid/alkaline)	The colour fastness to perspiration (acid/alkaline) must meet level 3-4. A level of 3 is allowable when they are dark (standard depth > 1/1), and are made of regenerated wool or more than 20% silk. This does not apply to white products, or products which are neither dyed nor printed.	Testing according to EN:ISO 105 E04
6.13	Colour fastness to wet rubbing	Colour fastness to wet rubbing shall be at least 2-3. A level of 2 is allowable for indigo dyed denim. This does not apply to white products, or products which are neither dyed nor printed.	Testing according to EN:ISO 105 X12
6.14	Colour fastness to dry rubbing	The colour fastness to dry rubbing must be at least level 4. Level 3-4 is allowable for indigo dyed denim. This does not	Testing according to EN:ISO 105 X12

Criterion number	Applicable to	Criteria	Compliance
		apply to white products, or products which are neither dyed nor printed.	

7. *Glues*

Criterion number	Applicable to	Criteria	Compliance
7	Glues	<p>Glues containing organic solvents are not permissible.</p> <p>Glues shall not be used which at time of application which are classified as carcinogenic (R45, R49, R40), harmful to the reproductive system (R46, R40), genetically harmful (R60-R63), toxic (R23-R28). The corresponding list of Hazard Statements is also provided.</p>	Declaration that the glues used comply with this criterion, together with supporting documentation.

8. *VOCs and SVOCs on the entire mattress*

Criterion number	Applicable to	Criteria	Compliance
8	VOCs and SVOCs	VOC emissions from entire mattress shall not exceed specified limits (for formaldehyde, other aldehydes, total organic compounds). This is made in analogy with the 'health risk assessment process for emissions of volatile organic compounds (VOC) from building products' developed in 2005 by the AgBB.	Chamber testing to be performed according to EN 13419-1, EN13419-2 and ISO 16000-6 (VOCs) standards

9. *Flame retardants used in the entire mattress*

Criterion number	Applicable to	Criteria	Compliance
9	Flame retardants	<p>Only reactive flame retardants are permissible (i.e. additive flame retardants are non-permissible). If a flame retardant has any of the R-phrases specified in directive 67/548/EEC (see below), these must not apply once the flame retardant is in its applied form.</p> <p>R40 (limited evidence of a carcinogenic</p>	Declaration that no additive flame retardants are present

Criterion number	Applicable to	Criteria	Compliance
		<p>effect), R45 (may cause cancer), R46 (may cause heritable genetic damage), R49 (may cause cancer by inhalation), R50 (very toxic to aquatic organisms), R51 (toxic to aquatic organisms), R52 (harmful to aquatic organisms), R53 (may cause long-term adverse effects in the aquatic environment), R60 (may impair fertility), R61 (may cause harm to the unborn child), R62 (possible risk of impaired fertility), R63 (possible risk of harm to the unborn child), R68 (possible risk of irreversible effects)</p> <p>The corresponding list of Hazard Statements is also provided.</p>	Declaration of which reactive flame retardants have been used, and their conformity with the criterion

10. *Biocides in the final product*

Criterion number	Applicable to	Criteria	Compliance
10	Biocides in the final product	Only biocidal products containing biocidal active substances defined in relevant EU Directives are allowed.	Declaration of non-use

11. *Durability*

Criterion number	Applicable to	Criteria	Compliance
11	Durability of mattress	<p>The lifetime of a household mattress is expected to be 10 years; this will vary depending on application.</p> <p>Adult mattress – Loss of height <15%, loss of firmness <20%</p> <p>Baby mattress – Loss of height <15%, loss of firmness <20%</p>	Test report verifying these criteria are met using EN1957 (100 vs. 30 000 cycles)

12. *Packaging requirements*

Criterion number	Applicable to	Criteria	Compliance
12	Packaging	Packaging shall be made from recyclable material, with plastic type marked according to ISO 11469. Specified text	Declaration of compliance, along with sample of product packaging and

		referring to the EU Ecolabel must appear	information supplied
--	--	--	----------------------

13. *Information appearing on the Ecolabel*

Criterion number	Applicable to	Criteria	Compliance
10	Information appearing on the Ecolabel	Box 2 of the Ecolabel shall contain specific text related: <ul style="list-style-type: none"> – 'Minimises indoor air pollution' – 'Hazardous substances restricted' – 'Durable and high quality' 	Declaration of compliance, along with sample of packaging with label

DRAFT

3. The revised criteria document

This section outlines the revision of the criteria which are proposed based on data gathered during the revision process, feedback from stakeholders and insight gained through a lifecycle analysis.

3.1 Product Group Definition

Proposed text:

Article 1:

1. The product group "bed mattresses" shall comprise products providing a surface to sleep or rest upon for indoor use.
2. The products consist of a cloth cover that is filled with materials and that can be placed on an existing supporting bed structure or designed for free standing. Materials filling and covering the bed mattresses may include latex and polyurethane foam, metal parts, textile fibres and fabrics.
3. *The product group shall not comprise wooden and upholstered bed bases, inflatable mattresses and water mattresses, as well as mattresses classified under Council Directive 93/42/EEC (medical devices)^a.*

Description of the revised scope, rationale and impact

A new wording is proposed for the definition of the product group. The following changes are applied:

- Section 1c is removed to omit bed bases from the product scope. Bed bases are proposed to be moved to the furniture product group, whose revision is about to start;
- Sections 1a and 1b were rearranged with aim of clarifying and improving the definition of the product scope;
- Section 2 is removed and replaced by an updated section 3, which now specifies that wooden and upholstered bed bases are also not eligible within this product group.

The main change is related to the exclusion of bed based from the product scope. These products indeed offer the same function of a mattress but they are designed with an integrated frame. In other terms, a mattress would need a bed frame to be considered functionally equivalent to a bed base. For this reason, bed based can be considered a "hybrid" product being closely linked to pieces of furniture and they should be moved within the furniture product group. This differentiation would allow for a more accurate categorization. Moreover it should be observed that at the moment there are apparently no bed bases awarded with the EU Ecolabel.

Based on the proposed relocation of bed bases, criterion 5 of the Commission Decision 2009/598/EC ("Wooden materials") would disappear from the new set of revised criteria.

For future revisions it is proposed to move bed mattresses to the furniture product group, in second step, in analogy with the approach followed by Nordic Swan.

The proposal was discussed with Member States but there are still split views about this issue. Since divergences have not been solved, the proposal of moving bed bases to the furniture product group will be kept.

^a

OJ L 169, 12.7.1993, p. 1.

Additional definitions

The following definitions shall apply:

1. "Cot mattress" means a mattress with the length shorter than 1400 mm;
2. "Eliminable substance" means a substance that shows 80 % degradation of dissolved organic carbon within 28 days using one of the following test methods: OECD 303A/B, ISO 11733;
3. "Inherently biodegradable substance" means a substance that shows 70 % degradation of dissolved organic carbon within 28 days or 60 % of theoretical maximum oxygen depletion or carbon dioxide generation within 28 days using one of the following test methods: ISO 14593, OECD 302 A, ISO 9887, OECD 302 B, ISO 9888, OECD 302 C;
4. "Readily biodegradable substance" means a substance that shows 70 % degradation of dissolved organic carbon within 28 days or 60 % of theoretical maximum oxygen depletion or carbon dioxide generation within 28 days using one of the following test methods: 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;
5. "Semi-volatile organic compound (SVOC)" means any organic compound eluting in a gas chromatographic column between n-hexadecane (excluded) and n-docosane (included) and with a boiling point approximately higher than 287°C, where the measurement is carried out using a capillary column coated with 5 % phenyl/95 % methyl-polysiloxane;
6. "Very volatile organic compound (VVOC)" means any organic compound eluting in a gas chromatographic column before n-hexane and with a boiling point approximately lower than 68°C, where the measurement is carried out using a capillary column coated with 5 % phenyl/95 % methyl-polysiloxane;
7. "Volatile organic compound (VOC)" means any organic compound eluting in a gas chromatographic column between, and including, n-hexane and n-hexadecane with a boiling point in the range of approximately 68°C to 287°C, where the measurement is carried out using a capillary column coated with 5 % phenyl/95 % methyl-polysiloxane.

3.2 Criteria

Proposed criteria

1. Latex foam
2. Polyurethane (PUR) foam
3. Wire and springs
4. Coconut fibres
5. Textiles (fabrics and fibres used as mattress cover and/or filling materials)
6. Glues and adhesives
7. Flame retardants
8. Biocides
9. Plasticizers
10. Excluded or limited substances and mixtures
11. Emission of specified organic compounds (SVOCs, VOCs, VVOCs) from the mattress
12. Technical performance
13. Design for disassembly and recovery of materials
14. Information appearing on the EU Ecolabel
15. Additional information to consumers

Prescriptions and text proposed for each criterion are presented in the followings sections, including the rationale behind any changes applied to the previous set of criteria. A cost-benefit analysis and a description of required test procedures and associated costs are also provided, whenever possible.

Criterion 1. Latex foam

Heading

Criterion 1. Latex foam

Note: The following requirements need to be met only if latex foam contributes to more than 5% of the total weight of the mattress

Criterion 1.1

1.1 Restricted substances

The concentrations in the latex foam of the substances listed below shall not exceed the following values:

Group of substances	Substance	Limit value (ppm)	Assessment and verification conditions
Chlorophenols	mono- and di-chlorinated phenols (salts and esters)	1	A
	Other chlorophenols	0.1	A
Heavy metal	As (Arsenic)	0.5	B
	Cd (Cadmium)	0.1	B
	Co (Cobalt)	0.5	B
	Cr (Chromium), total	1	B
	Cu (Copper)	2	B
	Hg (Mercury)	0.02	B
	Ni (Nickel)	1	B
	Pb (Lead)	0.5	B
	Sb (Antimony)	0.5	B
Pesticides*	Aldrin	0.04	C
	o,p-DDE	0.04	C
	p,p-DDE	0.04	C
	o,p-DDD	0.04	C
	p,p-DDD	0.04	C

	o,p-DDT	0.04	C
	p,p-DDT	0.04	C
	Diazinone	0.04	C
	Dichlorfenthion	0.04	C
	Dichlorvos	0.04	C
	Dieldrin	0.04	C
	Endrin	0.04	C
	Heptachlor	0.04	C
	Heptachlorepoxyde	0.04	C
	Hexachlorbenzene	0.04	C
	Hexachlorcyclohexane	0.04	C
	α -Hexachlorcyclohexane	0.04	C
	β -Hexachlorcyclohexane	0.04	C
	γ -Hexachlorcyclohexane (Lindane)	0.04	C
	δ -Hexachlorcyclohexane	0.04	C
	Malathion	0.04	C
	Methoxychlor	0.04	C
	Mirex	0.04	C
	Parathion-ethyl	0.04	C
	Parathion-methyl	0.04	C
Other specific substances that are restricted	Butadiene	1	D
* Only for foams composed of natural latex for at least 20 % by weight.			

Assessment and verification:

A. For chlorophenols the applicant shall provide a report presenting the results of the following test procedure. 5 g of sample shall be milled and chlorophenols shall be extracted in the form of phenol

(PCP), sodium salt (SPP) or esters. The extracts shall be analysed by means of gas chromatography (GC). Detection shall be made with mass spectrometer or electron capture detector (ECD).

B. For heavy metals the applicant shall provide a report presenting the results of the following test procedure. 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 0.45 µm membrane filter (if necessary by pressure filtration). The solution obtained shall be examined for the content of heavy metals by inductively coupled plasma optical emission spectrometry (ICP-OES), also known as inductively coupled plasma atomic emission spectrometry (ICP-AES), or by atomic absorption spectrometry using a hydride or cold vapour process.

C. For pesticides the applicant shall provide a report presenting the results of the following test procedure: 2 g of sample is extracted in an ultrasonic bath with a hexane/dichloromethane mixture (85/15). The extract is cleaned up by acetonitrile agitation or by adsorption chromatography over florisil. Measurement and quantification are determined by gas chromatography with detection on an electron capture detector or by coupled gas chromatography/mass spectrometry. The testing on pesticides is requested for latex foams with a content of at least 20 % natural latex.

D. For butadiene the applicant shall provide a report presenting the results of the following test procedure. Following milling and weighing of the latex foam, headspace sampling shall be performed. Butadiene content shall be determined by gas chromatography with detection by flame ionisation.

Criterion 1.2

1.2 Emission of specified volatile organic compounds (SVOCs, VOCs, VVOCs)

The room concentrations of the substances reported below, calculated through the test chamber method, shall not exceed the following values after a period of 24 hours.

Substance	Limit value (mg/m ³)
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)	0.3
VOCs (total)	0.5
* 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:

The applicant shall provide a report presenting the results of the following test procedure. A test chamber analysis shall be performed in accordance with the standard ISO 16000-9. The wrapped sample shall be stored at room temperature at least for 24 hours. After this period the sample shall be unwrapped and immediately transferred into the test chamber. The sample shall be placed on a sample holder, which allows air access from all sides. The climatic factors shall be adjusted according to 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. The air sampling shall be done 24 ± 1 h after loading of the chamber during 1 hour on DNPH cartridges for the analysis of formaldehyde and other aldehydes and on Tenax TA for the analysis of other volatile organic compounds. Sampling duration for other compounds may be longer but shall be completed before 30 hours.

The analysis of formaldehyde and other aldehydes shall comply with the standard ISO 16000-3. Unless specified differently, the analysis of other volatile organic compounds shall comply with the standard ISO 16000-6.

Testing following the standard CEN/TS 16516 shall be considered equivalent to those of the ISO 16000 series of standards.

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

Criterion 1.3

1.3 Dyes

Should dyes be used, criterion 5.5 shall be respected.

Assessment and verification:

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

Description of the criterion and rationale

Article 6.3.f of the EU Ecolabel Regulation states that the EU Ecolabel should seek to align with other ecolabels in order to enhance synergies between schemes.

Criteria on latex foam from other labelling schemes have been reviewed extensively. The euroLATEX ECO-Standard^a was considered the main reference for revising most of the requirements on restricted substances and the related assessment and verification procedures.

The following changes have been proposed:

1. Introduction of a list of banned pesticides, when the natural latex content is more than 20% by weight.

2. Addition of limits on emissions of (volatile) organic compounds, specifically;

Compound	Number of C atoms	Boiling Point at atmospheric pressure (°C)	Emission limit value	Classification according to prCEN/TS 16516
Toluene	7	111	0.1 mg/m ³	VOC
Vinyl cyclohexene	8	129	0.002 mg/m ³	VOC
Styrene	8	145	0.01 mg/m ³	VOC
4-Phenylcyclohexene	12		0.02 mg/m ³	VOC?
1,1,1 – trichloroethane	2	74	0.2 mg/m ³	VOC?
Tetrachloroethylene	2	121	0.15 mg/m ³	VOC?
Trichlorethylene	2	87	0.05 mg/m ³	VOC?
Vinyl chloride	2	-13	0.1µg/m ³	VVOC
total cumulative emissions of aromatic hydrocarbons			0.3 mg/m ³	
total cumulative emissions of VOCs			0.5 mg/m ³	

3. Inclusion of formaldehyde and nitrosamines in a single prescription on emission of (volatile) organic compounds. Values provided in the old EU Ecolabel criteria have been kept because more stringent than those reported in the euroLATEX ECO-Standard. The alternative limit value for formaldehyde (20 ppm to measure according to ISO 14184-1) has been removed since this is an indirect measure taken only by some industries for routine controls and since no equivalence factor can be set with the emission value from test chamber. The assessment and verification procedure for the analysis of nitrosamines has been updated. According to Blue Angel, the name of the method ZH 1/120.23 is now BGI 505-23. The analysis of nitrosamines shall be done by means of gas chromatography in combination with a thermal energy analysis detector (GC-TEA).

4. Addition of a limit on the emissions of carbon disulphide based on the Blue Angel scheme for mattresses^b, Emissions of carbon disulphide must be less than < 0.02 mg/m. Carbon disulphide is a gas that has carries the following hazard statements:

^a <http://www.eurolatex.com/EuroLatexECOStandard.pdf>

^b http://www.blauer-engel.de/en/products_brands/vergabegrundlage.php?id=140

- 48/23 – Harmful: danger of serious damage to health by prolonged exposure through inhalation;
- R62 - Possible risk of impaired fertility;
- R63 - Possible risk of harm to the unborn child.

5. Alignment of verification procedures with the EuroLATEX ECO-Standard. Nevertheless, a more precise procedure was introduced for the assessment and verification of the emission of organic compounds since the one provided within the EuroLATEX ECO-standard was considered too vague and leaving too much flexibility. Moreover, reference standards for the assessment and verification procedure for VOC emissions have been updated:

- EN 13419-1 (test chambers) no longer exists. It is now available as ISO 16000-9. A new standard should become available in 2013, CEN/TS 16516 (2013), that could be referred to in the User Manual. Based on this, the assessment and verification procedure should be updated also for the other criteria related to VOCs, i.e. 1(b) and 2(b).
- EN 13419-2 (test cells) no longer exists; it is now available as ISO 16000-10 but this is not a test chamber and therefore it is not applicable to mattresses.
- ISO 16000-6 refers to the measurement of VOCs. A new reference to ISO 16000-3 is necessary for the measurement of formaldehyde and other aldehydes.

Some prescriptions remain from the Commission Decision 2009/598/EC:

- A limit on Antimony within Extractable heavy metals
- Requirements for dyes (in case of use), which have been aligned with those proposed for the revision of the EU Ecolabel criteria for textiles. A link to criterion 5(e) has been made. Explicit requirements on pigments have been removed because dealing with heavy metals, which is already taken into account with criterion 1(a).

Cost Benefit Analysis:

The changes made do not substantially alter the criteria, but simply update limits on emissions and substances concentrations to reflect current practice. Some additional restrictions have been introduced, however, because of their presence in other relevant labelling schemes, they should not create complications to producers of mattresses and their suppliers.

Test Procedures and Economic Burdens:

Testing procedures have been aligned as much as possible to those of the euroLATEX ECO-Standard. However, this action is not expected to increase prohibitively the economic burdens of testing. Additional declarations of non-use will be required from some suppliers and manufacturers. These should not present significant burdens on applicants assuming the information from suppliers is available.

Criterion 2. PUR foam

Heading

Criterion 2. PUR foam

Note: The following requirements need to be met only if PUR foam contributes to more than 5% of the total weight of the mattress.

Criterion 2.1

2.1 Restricted substances

The concentrations in the PUR foam of the substances listed below shall not exceed the following values:

Group of substances	Substance (acronym, CAS number, element symbol)	Limit value	Assessment and verification conditions
Biocides	Substances restricted according to criterion 8(a)	Not added intentionally	A
Heavy Metals	As (Arsenic)	0.2 ppm	B
	Cd (Cadmium)	0.1 ppm	B
	Co (Cobalt)	0.5 ppm	B
	Cr (Chromium), total	1.0 ppm	B
	Cr VI (Chromium VI)	0.01 ppm	B
	Cu (Copper)	2.0 ppm	B
	Hg (Mercury)	0.02 ppm	B
	Ni (Nickel)	1.0 ppm	B
	Pb (Lead)	0.2 ppm	B
	Sb (Antimony)	0.5 ppm	B
Se (Selenium)	0.5 ppm	B	
Plasticizers	Di-iso-nonylphthalate (DINP, 28553-12-0)	0.01 % w/w (sum)	C
	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)		

	Phthalates	Not added intentionally	A
TDA and MDA	2,4 Toluenediamine (2,4 TDA, 95-80-7)	5.0 ppm	D
	4,4" Diaminodiphenylmethane (4,4" MDA, 101-77-9)	5.0 ppm	D
Tinorganic substances	Tributyltin (TBT)	50 ppb	E
	Dibutyltin (DBT)	100 ppb	E
	Monobutyltin (MBT)	100 ppb	E
	Tetrabutyltin (TeBT)	-	-
	Monooctyltin (MOT)	-	-
	Diocyltin (DOT)	-	-
	Tricyclohexyltin (TcyT)	-	-
	Triphenyltin (TPhT)	-	-
	Sum	500 ppb	E
Other specific substances that are restricted	Chlorinated or brominated dioxines or furans	Not added intentionally	A
	Chlorinated hydrocarbons (1,1,2,2-Tetrachloroethane, Pentachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethylene)	Not added intentionally	A
	Chlorinated phenols (PCP, TeCP, 87-86-5)	Not added intentionally	A
	Hexachlorocyclohexane (58-89-9)	Not added intentionally	A
	Monomethyldibromo-Diphenylmethane (99688-47-8)	Not added intentionally	A
	Monomethyldichloro-Diphenylmethane (81161-70-8)	Not added intentionally	A
	Nitrites	Not added intentionally	A
	Polybrominated Biphenyls (PBB, 59536-65-1)	Not added intentionally	A
	Pentabromodiphenyl Ether (PeBDE, 32534-81-9)	Not added intentionally	A
	Octabromodiphenyl Ether (OBDE, 32536-52-0)	Not added intentionally	A
Polychlorinated Biphenyls (PCB, 1336-36-3)	Not added intentionally	A	

	Polychlorinated Terphenyls (PCT, 61788-33-8)	Not added intentionally	A
	Tri-(2,3-dibromo-propyl)-phosphate (TRIS, 126-72-7)	Not added intentionally	A
	Trimethylphosphate (512-56-1)	Not added intentionally	A
	Tris-(aziridinyl)-phosphin oxide (TEPA, 5455-55-1)	Not added intentionally	A
	Tris(2-chloroethyl)-phosphate (TCEP, 115-96-8)	Not added intentionally	A
	Dimethyl methylphosphonate (DMMP, 756-79-6)	Not added intentionally	A

Assessment and verification:

A. For biocides, phthalates and other specific substances that are restricted the applicant shall provide a declaration supported by declarations from manufacturers of the foam confirming that the listed substances have not been added intentionally to the foam formulation.

B. For heavy metals the applicant shall provide a report presenting the results of the following test procedure. 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 0.45 µm membrane filter (if necessary by pressure filtration). The solution obtained shall be examined for the content of heavy metals by atomic emission spectrometry with inductively coupled plasma (ICP-AES or ICP-OES) or by atomic absorption spectrometry using a hydride or cold vapour process.

C. For the total amount of plasticizers the applicant shall provide a report presenting the results of the following test procedure. The sample shall be a composite of 6 pieces to be taken from beneath each samples face (to a maximum of 2 cm from the surface). Extraction shall be performed with dichloromethane using validated method and followed by analysis with gas chromatography–mass spectrometry (GC-MS) or high-performance liquid chromatography (HPLC-UV).

D. For TDA and MDA the applicant shall provide a report presenting the results of the following test procedure. The sample shall be a composite of 6 pieces to be taken from beneath each samples face (to a maximum of 2 cm from the surface). Extraction shall be performed with 1% aqueous acetic acid solution. Four repeat extractions of the same foam sample shall be performed maintaining the sample weight to volume ratio of 1:5 in each case. The extracts shall be combined, made up to a known volume, filtered and analysed by high-performance liquid chromatography (HPLC-UV) or HPLC-MS. If HPLC-UV is performed and interference is suspected, reanalysis with high performance liquid chromatography–mass spectrometry (HPLC-MS) shall be performed.

E. For tinorganic substances the applicant shall provide a report presenting the results of the following test procedure. The sample shall be a composite of 6 pieces to be taken from beneath each sample face (to a maximum of 2 cm from the surface). Extraction shall be performed for 1 hour in an ultrasonic bath at room temperature. The extracting agent shall be a mixture composed as it follows: 1750 ml methanol + 300 ml acetic acid + 250 ml buffer (pH 4.5). The buffer shall be a solution of 164

g of sodium acetate in 1200 ml of water and 165 ml acetic acid, to be diluted with water to a volume of 2000 ml. After extraction the alkyl tin species shall be derivatized by adding sodium tetraethylborate solution in tetrahydrofuran (THF). The derivative shall be extracted with n-hexane and the sample shall be submitted to a second extraction procedure. Both hexane extracts shall be combined and further used to determine the organotin compounds by gas chromatography with mass selective detection in SIM modus.

Criterion 2.2

2.2 Emission of specified volatile organic compounds (SVOCs, VOCs, VVOCs)

The room concentrations of the substances reported below, calculated through the test chamber method, shall not exceed the following values after a period of 72 hours.

Substance (CAS number)	Limit value (mg/m³)
Formaldehyde (50-00-0)	0.005
Toluene (108-88-3)	0.1
Styrene (100-42-5)	0.005
Each detectable compound classified as categories C1A or C1B according to the Regulation (EC) No 1272/2008 of the European Parliament and of the Council	0.005
Sum of all detectable compound classified as categories C1A or C1B according to the Regulation (EC) No 1272/2008	0.04
Aromatic hydrocarbons	0.5
Sum of VOCs with retention range within C6-C16	0.5

Assessment and verification:

The applicant shall provide a report presenting the results of the following test procedure. 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 L of 0.4 m²/m³ (= total exposed surface of sample in relation to chamber dimensions without sealing edges and back) in accordance with ISO 16000-9 and ISO 16000-11. Sampling shall be done 72 ± 2 h after loading of the chamber during 1 hour on Tenax TA and DNPH cartridges for respectively VOC and formaldehyde analysis. The emissions of VOC are being trapped on Tenax TA sorbent tubes and subsequently analysed by means of thermo-desorption-GC-MS in accordance to ISO 16000-6. Results are semi-quantitatively expressed as toluene equivalents. All specified individual components are reported from a concentration limit $\geq 1 \mu\text{g}/\text{m}^3$. Total VOC value is the sum of all components with a concentration $\geq 1 \mu\text{g}/\text{m}^3$ and eluting within the retention time window from n-hexane (C6) to n-hexadecane (C16), both included. The sum of all detectable compounds classified as categories C1A or C1B according to Regulation (EC) No 1272/2008 is the sum of all these substances with a concentration $\geq 1 \mu\text{g}/\text{m}^3$. In case the test results exceed the standard limits, substance specific quantification needs to be performed. Formaldehyde can be determined by collection of the sampled

air onto DNPH cartridge and subsequent analysis by HPLC/UV in accordance to ISO 16000-3.

Testing following the standard CEN/TS 16516 shall be considered equivalent to those of the ISO 16000 series of standards.

Note:

- Chamber volume shall be 0.5 or 1 m³.
- 1 sample (25 cm x 20 cm x 15 cm) shall be used in a test chamber of 0.5 m³ standing vertically on one 20 cm x 15 cm side.
- 2 samples (25 cm x 20 cm x 15 cm) shall be used in a 1 m³ test chamber standing vertically on one 20 cm x 15 cm side; in this case both samples shall be placed in the test chamber with 15 cm distance in between.

Criterion 2.3

2.3 Dyes

Should dyes be used, criterion 5.5 shall be respected.

Assessment and verification:

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

Criterion 2.4

2.4 Total chlorine content of isocyanates

Should mixed isomers of toluene diisocyanate (TDI) be used in the production of the PU 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 manufacturer of the foam or the results of the test methods carried-out in accordance with ASTM D4661-93 or equivalent.

Criterion 2.5

2.5 Blowing agents

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

Assessment and verification:

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

Description of the criterion and rationale

Article 6.3.f of the EU Ecolabel Regulation states that the EU Ecolabel should seek to align with other ecolabels to enhance synergies between schemes.

Criteria on PUR foam from other labelling schemes have been reviewed extensively. The CertiPUR label^a was considered the main reference for revising most of the requirements on restricted substances and the related assessment and verification procedures.

The following changes have been proposed:

1. Introduction of a criterion on biocides. Requirements have been aligned with criterion 8(a) on restriction on biocides in the whole mattress.
2. Reducing the allowable concentrations of Arsenic and Lead from 0.5ppm to 0.2ppm, and the addition of selenium at a maximum concentration of 0.5 ppm.
3. Introducing prescriptions on phthalate plasticizers:
 - the intentional addition of phthalates is prohibited
 - residual content of DINP, DNOP, DEHP, DIDP, BBP, DIBP < 0.01 % w/w
4. Introduction of limits on the content of precursors for TDI and MDI:
 - 4,4'-diaminodiphenylmethane (101-77-9) < 5.0ppm
 - 2,4-toluenediamine (95-80-7) < 5.0 ppm
5. Addition of Tetra-organic tin compounds to banned tin organic compounds and further alignment with the verification requirement of the CertiPUR standard.
6. Introduction of a list of banned substances:
 - Chlorinated or brominated dioxines or furans
 - Chlorinated hydrocarbons (1,1,2,2-Tetrachloroethane, Pentachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethylene)
 - Chlorinated phenols (PCP, TeCP) – 87-86-5
 - Hexachlorocyclohexane - 58-89-9
 - Monomethyldibromo – Diphenylmethane - 99688-47-8
 - Monomethyldichloro-Diphenylmethane -81161-70-8
 - Nitrites
 - Polybrominated Biphenyls (PBB) - 59536-65-1
 - Pentabromodiphenyl Ether (PeBDE)- 32534-81-9
 - Octabromodiphenyl Ether (OBDE) - 32536-52-0
 - Polychlorinated Biphenyls (PCB) - 1336-36-3
 - Polychlorinated Terphenyls (PCT) - 61788-33-8
 - Tri-(2,3-dibromo-propyl)-phosphate (TRIS) - 126-72-7
 - Trimethylphosphate- 512-56-1
 - Tris-(aziridiny)-phosphin oxide (TEPA) - 5455-55-1
 - Tris(2-chloroethyl)-phosphate (TCEP) -115-96-8
 - Dimethyl methylphosphonate (DMMP) - 756-79-6
7. Revision of limits on VOC emissions, specifically;

^a http://www.europur.com/uploads/DocumentsLibrary/documents/CertiPUR_Technical_Paper_11.05.2011.pdf

- Toluene <0.1 mg/m³ (new)
- Styrene < 0.005 mg/m³ (new)
- Each detectable compound classified as categories C1A or C1B according to the Regulation (EC) No 1272/2008 < 0.005 mg/m³ (new)
- Sum of all detectable compound classified as categories C1A or C1B according to the Regulation (EC) No 1272/2008 < 0.04mg/m³ (new)
- Aromatic hydrocarbons < 0.5 mg/m³ (new)
- Total VOCs < 0.5 mg/m³ (new)

8. Inclusion of formaldehyde in a single prescription on emission of VOCs. The value provided in the old set of EU Ecolabel criteria (0.0050 mg/m³) has been kept because more stringent than those reported in the CertiPUR Label.

9. Alignment of verification procedures with the CertiPUR Label. However, assessment and verifications for heavy metals refer to euroLATEX ECO-Standard since these are not provided within the CertiPUR Label. Reference standards for the assessment and verification procedure for VOC emissions, moreover, have been updated:

- EN 13419-1 (test chambers) no longer exists. It is now available as ISO 16000-9. A new standard should become available in 2013, CEN/TS 16516 (2013), that could be referred to in the User Manual. Based on this, the assessment and verification procedure should be updated also for the other criteria related to VOCs, i.e. 1(b) and 2(b).
- EN 13419-2 (test cells) no longer exists; it is now available as ISO 16000-10 but this is not a test chamber and therefore it is not applicable to mattresses.
- ISO 16000-6 refers to the measurement of VOCs. A new reference to ISO 16000-3 is necessary for the measurement of formaldehyde and other aldehydes.

Some prescriptions remain from the Commission Decision 2009/598/EC:

- Requirements for dyes (in case of use), which have been aligned with those proposed for the revision of the EU Ecolabel criteria for textiles. A link to criterion 5(e) has been made. Explicit requirements on pigments have been removed because dealing with heavy metals, which is already taken into account with criterion 1(a).

In accordance with the CertiPUR Label, a concentration limit has been also introduced for the total chlorine content in the isocyanates used to produce the PUR (0.7% by weight). The presence of these substances could increase the risk of smell and ASTM D4661 is a suitable test method.

Finally, no modification seems needed for the criterion on blowing agents.

Cost Benefit Analysis:

The changes made do not substantially alter the criteria, but simply update limits on emissions and substances concentrations to reflect current practice. Some additional restrictions have been introduced, however, because of their presence in other relevant labelling schemes, they should not create complications to producers of mattresses and their suppliers.

Test Procedures and Economic Burdens:

Testing procedures have been aligned as much as possible to those of the euroLATEX ECO-Standard and of the CertiPUR Label. However, this action is not expected to increase prohibitively the

economic burdens of testing. Additional declarations of non-use will be required from some suppliers and manufacturers. These should not present significant burdens on applicants assuming the information from suppliers is available.

DRAFT

Criterion 3. Wire and springs

Heading

Criterion 3. Wire and springs

Note: The following requirements need to be met only if wire and springs contribute to more than 5% of the total weight of the mattress.

Criterion 3.1

3.1 Degreasing

If degreasing and/or cleaning of wire and/or springs is carried out with organic solvents, use shall be made of a closed cleaning/degreasing system.

Assessment and verification:

The applicant shall provide a corresponding declaration from the manufacturer of wire and springs.

Criterion 3.2

3.2 Galvanisation

The surface of springs shall not be covered with a galvanic metallic layer.

Assessment and verification: The applicant shall provide a corresponding declaration from the manufacturer of wire and springs.

Description of the criterion and rationale

No modification was applied to the requirements of the Commission Decision 2009/598/EC for wire and springs.

Criterion 4. Coconut fibres

Heading and text

Criterion 4. Coconut fibres

Note: The following requirement needs to be met only if coconut fibre contribute to more than 5% of the total weight of the mattress.

Criteria for latex foam shall be considered if coconut fibre material is rubberised using latex.

Assessment and verification:

The applicant shall either provide a declaration of non-use of rubberised coconut fibres, or the test reports required in point 1 for latex foam.

Description of the criterion and rationale

Some minor modification of wording was applied to the requirements of the Commission Decision 2009/598/EC for coconut fibres.

Criterion 5. Textiles (fabrics and fibres used as mattress cover and/or filling materials)

Heading and text

Criterion 5. Textiles (fabrics and fibres used as mattress cover and/or filling materials)

Notes:

- (1) All the requirements (5.1 to 5.10) shall be respected for the mattress cover (i.e. ticking)
- (2) Filling materials (i.e. padding) shall respect requirements 5.1. Where wool is used as filling material, requirements 5.1, 5.2 and 5.7 shall be respected.
- (3) All textiles which have been awarded the EU Ecolabel, as established in the **Commission Decision XXXX**, are considered being automatically compliant with requirements 5.1, 5.2, 5.3, 5.4, 5.5, 5.6, 5.7, 5.9 and 5.10. Nevertheless, in order to allow mattresses to be awarded the EU Ecolabel, it shall be demonstrated that also criterion 5.8 is satisfied for the mattress cover.

5.1 General requirements on hazardous substances (including flame retardants, biocides and plasticizers) (Applicability: all textiles)

All textiles: Criteria 7 (flame retardants), 8 (biocides), 9 (plasticizers) and 10 (hazardous substances) shall be respected by all textiles.

Assessment and verification:

The applicant shall provide a declaration of compliance with this criterion, together with the supporting documentation required in the respective criteria (7, 8, 9, 10).

5.2 Auxiliaries used in preparations and formulations (Applicability: covers made of any fibres and filling materials made of wool)

All covers: The following substances shall not be used in any preparations or formulations used for the production of all mattress covers. Limit values for the presence of Alkylphenols and APEOs on the cover shall be respected.

Filling materials made of wool: Alkylphenols and APEOs shall not be used in any preparations or formulations used for the production of filling materials made of wool and limit values for their presence in the filling material shall be respected.

Substance (CAS number / Acronym)	Limit value (mg/kg)	Assessment and verification conditions
Alkylphenols: <ul style="list-style-type: none">• 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)	25 (sum)	A

Alkylphenoethoxylates (APEOs) and their derivatives <ul style="list-style-type: none"> • Polyoxyethylated octyl phenol (CAS: 9002-93-1) • Polyoxyethylated nonyl phenol (CAS: 9016-45-9) • Polyoxyethylated p-nonyl phenol (CAS: 26027-38-3) 		
bis(hydrogenated tallow alkyl) dimethyl ammonium chloride (DTDMAC)	Not used	B
distearyl dimethyl ammonium chloride (DSDMAC)		
di(hardened tallow) dimethyl ammonium chloride (DHTDMAC)		
ethylene diamine tetra acetate (EDTA)		
diethylene triamine penta acetate (DTPA)		
4-(1,1,3,3-tetramethylbutyl)phenol		
1-Methyl-2-pyrrolidone		
Nitrilotriacetic acid (NTA)		

Assessment and verification:

A. The applicant shall provide a report presenting the results of the final product testing which shall be performed through solvent extraction followed by liquid chromatography–mass spectrometry (LC-MS).

B. The applicant shall provide a declaration of non-use from the supplier supported by safety data sheets for all production stages.

5.3 Surfactants, softeners and complexing agents in wet processes (Applicability: covers made of any fibres)

All surfactants, softeners and complexing agents: At least 95 % by weight of surfactants, softeners and complexing agents shall comply with one of the following conditions:

- (a) they shall be readily biodegradable under aerobic conditions;
- (b) they shall be inherently biodegradable or eliminable in wastewater treatment plants.

Non-ionic and cationic surfactants: All non-ionic and cationic surfactants shall also be readily biodegradable under anaerobic conditions.

Fluorinated surfactants: Long chain perfluoroalkyl sulfonates ($\geq C5$) and perfluorocarboxylic acids ($\geq C7$) shall not be used.

The latest revision of the Detergents Ingredients Database should be used as a reference point for biodegradability:

Assessment and verification:

The applicant shall provide appropriate documentation through safety data sheets and/or declarations from suppliers.

For all surfactants, softeners and complexing agents, this shall be supported by results of appropriate OECD or ISO tests for:

- *Readily biodegradability (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)*
- *Inherently biodegradability (ISO 14593, OECD 302 A, ISO 9887, OECD 302 B, ISO 9888, OECD 302 C)*
- *Eliminability (OECD 303A/B, ISO 11733)*

For non-ionic and cationic surfactants, this shall be supported by results of appropriate OECD or ISO tests (ISO 11734, ECETOC No 28 (June 1988), OECD 311).

For fluorinated surfactants the applicant shall provide a declaration of non-use from the supplier supported by safety data sheets for all production stages.

5.4 Bleaching of pulp yarns, fabrics and end products (Applicability: covers made of any fibres)

Chlorine agents shall not be used for the bleaching of any yarns, fabrics, knitted panels or end-products with the exception of man-made cellulose fibres.

Pulp used to manufacture man-made cellulose fibres (e.g. viscose) shall be bleached without the use of elemental chlorine. The resulting total amount of chlorine and organically bound chlorine in the finished fibres (OX) shall not exceed 150 ppm or in the wastewater from pulp manufacturing (AOX) shall not exceed 0.170 kg/ADt pulp.

Assessment and verification:

The applicant shall provide a declaration of non-use of chlorinated bleaching agents from the supplier.

For man-made cellulose fibres, the applicant shall provide a test report showing compliance with either the OX or the AOX requirement, using the appropriate test method:

- *OX: ISO 11480.97 (controlled combustion and microcoulometry)*
- *AOX: ISO 9562*

5.5 Dyes (Applicability: covers made of any fibres)

The following restrictions apply to dyes.

The use of dyes in textiles shall be also compliant with criterion 10 on hazardous substances and thus the related derogation conditions shall apply. Derogation conditions relate to the handling of dyes in the dye house, the dyeing process and colour removal from wastewater from dye houses.

Group of substances	Criterion	Assessment and
---------------------	-----------	----------------

		verification																																																		
i. Halogenated carriers	Where disperse dyes are used, halogenated dyeing accelerants (carriers) shall not be used to dye polyester, acrylic or polyamide fibres and fabrics made of these fibres or polyester-wool blends (Examples of carriers include: 1,2-dichlorobenzene, 1,2,4-trichlorobenzene, chlorophenoxyethanol).	A																																																		
ii. Azo dyes	<p>Azo dyes that may cleave to aromatic amines that are known to be carcinogenic shall not be used in acrylic, cotton, polyamide and wool fibres and fabrics made of these fibres. The limit value for the content of each arylamine in the final product shall be 30 mg/kg.</p> <table border="1"> <thead> <tr> <th>Arylamine</th> <th>CAS number</th> </tr> </thead> <tbody> <tr> <td>4-aminodiphenyl</td> <td>92-67-1</td> </tr> <tr> <td>Benzidine</td> <td>92-87-5</td> </tr> <tr> <td>4-chloro-o-toluidine</td> <td>95-69-2</td> </tr> <tr> <td>2-naphtylamine</td> <td>91-59-8</td> </tr> <tr> <td>o-amino-azotoluene</td> <td>97-56-3</td> </tr> <tr> <td>2-amino-4-nitrotoluene</td> <td>99-55-8</td> </tr> <tr> <td>p-chloroaniline</td> <td>106-47-8</td> </tr> <tr> <td>2,4-diaminoanisol</td> <td>615-05-4</td> </tr> <tr> <td>4,4'-diaminodiphenylmethane</td> <td>101-77-9</td> </tr> <tr> <td>3,3'-dichlorobenzidine</td> <td>91-94-1</td> </tr> <tr> <td>3,3'-dimethoxybenzidine</td> <td>119-90-4</td> </tr> <tr> <td>3,3'-dimethylbenzidine</td> <td>119-93-7</td> </tr> <tr> <td>3,3'-dimethyl-4,4'-diaminodiphenylmethane</td> <td>838-88-0</td> </tr> <tr> <td>p-cresidine</td> <td>120-71-8</td> </tr> <tr> <td>4,4'-methylene-bis-(2-chloroaniline)</td> <td>101-14-4</td> </tr> <tr> <td>4,4'-oxydianiline</td> <td>101-80-4</td> </tr> <tr> <td>4,4'-thiodianiline</td> <td>139-65-1</td> </tr> <tr> <td>o-toluidine</td> <td>95-53-4</td> </tr> <tr> <td>2,4-diaminotoluene</td> <td>95-80-7</td> </tr> <tr> <td>2,4,5-trimethylaniline</td> <td>137-17-7</td> </tr> <tr> <td>o-anisidine (2-Methoxyanilin)</td> <td>90-04-0</td> </tr> <tr> <td>2,4-Xylidine</td> <td>95-68-1</td> </tr> <tr> <td>2,6-Xylidine</td> <td>87-62-7</td> </tr> <tr> <td>4-aminoazobenzene</td> <td>60-09-3</td> </tr> </tbody> </table>	Arylamine	CAS number	4-aminodiphenyl	92-67-1	Benzidine	92-87-5	4-chloro-o-toluidine	95-69-2	2-naphtylamine	91-59-8	o-amino-azotoluene	97-56-3	2-amino-4-nitrotoluene	99-55-8	p-chloroaniline	106-47-8	2,4-diaminoanisol	615-05-4	4,4'-diaminodiphenylmethane	101-77-9	3,3'-dichlorobenzidine	91-94-1	3,3'-dimethoxybenzidine	119-90-4	3,3'-dimethylbenzidine	119-93-7	3,3'-dimethyl-4,4'-diaminodiphenylmethane	838-88-0	p-cresidine	120-71-8	4,4'-methylene-bis-(2-chloroaniline)	101-14-4	4,4'-oxydianiline	101-80-4	4,4'-thiodianiline	139-65-1	o-toluidine	95-53-4	2,4-diaminotoluene	95-80-7	2,4,5-trimethylaniline	137-17-7	o-anisidine (2-Methoxyanilin)	90-04-0	2,4-Xylidine	95-68-1	2,6-Xylidine	87-62-7	4-aminoazobenzene	60-09-3	B
Arylamine	CAS number																																																			
4-aminodiphenyl	92-67-1																																																			
Benzidine	92-87-5																																																			
4-chloro-o-toluidine	95-69-2																																																			
2-naphtylamine	91-59-8																																																			
o-amino-azotoluene	97-56-3																																																			
2-amino-4-nitrotoluene	99-55-8																																																			
p-chloroaniline	106-47-8																																																			
2,4-diaminoanisol	615-05-4																																																			
4,4'-diaminodiphenylmethane	101-77-9																																																			
3,3'-dichlorobenzidine	91-94-1																																																			
3,3'-dimethoxybenzidine	119-90-4																																																			
3,3'-dimethylbenzidine	119-93-7																																																			
3,3'-dimethyl-4,4'-diaminodiphenylmethane	838-88-0																																																			
p-cresidine	120-71-8																																																			
4,4'-methylene-bis-(2-chloroaniline)	101-14-4																																																			
4,4'-oxydianiline	101-80-4																																																			
4,4'-thiodianiline	139-65-1																																																			
o-toluidine	95-53-4																																																			
2,4-diaminotoluene	95-80-7																																																			
2,4,5-trimethylaniline	137-17-7																																																			
o-anisidine (2-Methoxyanilin)	90-04-0																																																			
2,4-Xylidine	95-68-1																																																			
2,6-Xylidine	87-62-7																																																			
4-aminoazobenzene	60-09-3																																																			

An indicative list of azodyes that may cleave to arylamines is provided in the following.

Disperse dyes that may cleave to aromatic amines

Disperse Orange 60	Disperse Yellow 7
Disperse Orange 149	Disperse Yellow 23
Disperse Red 151	Disperse Yellow 56
Disperse Red 221	Disperse Yellow 218

Basic dyes that may cleave to aromatic amines

Basic Brown 4	Basic Red 114
Basic Red 42	Basic Yellow 82
Basic Red 76	Basic Yellow 103
Basic Red 111	

Acid dyes that may cleave to aromatic amines

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

Direct dyes that may cleave to aromatic amines

Direct Black 4	Basic Brown 4	Direct Red 13
Direct Black 29	Direct Brown 6	Direct Red 17
Direct Black 38	Direct Brown 25	Direct Red 21
Direct Black 154	Direct Brown 27	Direct Red 24
Direct Blue 1	Direct Brown 31	Direct Red 26

	<table border="1"> <tbody> <tr><td>Direct Blue 2</td><td>Direct Brown 33</td><td>Direct Red 22</td></tr> <tr><td>Direct Blue 3</td><td>Direct Brown 51</td><td>Direct Red 28</td></tr> <tr><td>Direct Blue 6</td><td>Direct Brown 59</td><td>Direct Red 37</td></tr> <tr><td>Direct Blue 8</td><td>Direct Brown 74</td><td>Direct Red 39</td></tr> <tr><td>Direct Blue 9</td><td>Direct Brown 79</td><td>Direct Red 44</td></tr> <tr><td>Direct Blue 10</td><td>Direct Brown 95</td><td>Direct Red 46</td></tr> <tr><td>Direct Blue 14</td><td>Direct Brown 101</td><td>Direct Red 62</td></tr> <tr><td>Direct Blue 15</td><td>Direct Brown 154</td><td>Direct Red 67</td></tr> <tr><td>Direct Blue 21</td><td>Direct Brown 222</td><td>Direct Red 72</td></tr> <tr><td>Direct Blue 22</td><td>Direct Brown 223</td><td>Direct Red 126</td></tr> <tr><td>Direct Blue 25</td><td>Direct Green 1</td><td>Direct Red 168</td></tr> <tr><td>Direct Blue 35</td><td>Direct Green 6</td><td>Direct Red 216</td></tr> <tr><td>Direct Blue 76</td><td>Direct Green 8</td><td>Direct Red 264</td></tr> <tr><td>Direct Blue 116</td><td>Direct Green 8.1</td><td>Direct Violet 1</td></tr> <tr><td>Direct Blue 151</td><td>Direct Green 85</td><td>Direct Violet 4</td></tr> <tr><td>Direct Blue 160</td><td>Direct Orange 1</td><td>Direct Violet 12</td></tr> <tr><td>Direct Blue 173</td><td>Direct Orange 6</td><td>Direct Violet 13</td></tr> <tr><td>Direct Blue 192</td><td>Direct Orange 7</td><td>Direct Violet 14</td></tr> <tr><td>Direct Blue 201</td><td>Direct Orange 8</td><td>Direct Violet 21</td></tr> <tr><td>Direct Blue 215</td><td>Direct Orange 10</td><td>Direct Violet 22</td></tr> <tr><td>Direct Blue 295</td><td>Direct Orange 108</td><td>Direct Yellow 1</td></tr> <tr><td>Direct Blue 306</td><td>Direct Red 1</td><td>Direct Yellow 24</td></tr> <tr><td>Direct Brown 1</td><td>Direct Red 2</td><td>Direct Yellow 48</td></tr> <tr><td>Direct Brown 1:2</td><td>Direct Red 7</td><td></td></tr> <tr><td>Direct Brown 2</td><td>Direct Red 10</td><td></td></tr> </tbody> </table>	Direct Blue 2	Direct Brown 33	Direct Red 22	Direct Blue 3	Direct Brown 51	Direct Red 28	Direct Blue 6	Direct Brown 59	Direct Red 37	Direct Blue 8	Direct Brown 74	Direct Red 39	Direct Blue 9	Direct Brown 79	Direct Red 44	Direct Blue 10	Direct Brown 95	Direct Red 46	Direct Blue 14	Direct Brown 101	Direct Red 62	Direct Blue 15	Direct Brown 154	Direct Red 67	Direct Blue 21	Direct Brown 222	Direct Red 72	Direct Blue 22	Direct Brown 223	Direct Red 126	Direct Blue 25	Direct Green 1	Direct Red 168	Direct Blue 35	Direct Green 6	Direct Red 216	Direct Blue 76	Direct Green 8	Direct Red 264	Direct Blue 116	Direct Green 8.1	Direct Violet 1	Direct Blue 151	Direct Green 85	Direct Violet 4	Direct Blue 160	Direct Orange 1	Direct Violet 12	Direct Blue 173	Direct Orange 6	Direct Violet 13	Direct Blue 192	Direct Orange 7	Direct Violet 14	Direct Blue 201	Direct Orange 8	Direct Violet 21	Direct Blue 215	Direct Orange 10	Direct Violet 22	Direct Blue 295	Direct Orange 108	Direct Yellow 1	Direct Blue 306	Direct Red 1	Direct Yellow 24	Direct Brown 1	Direct Red 2	Direct Yellow 48	Direct Brown 1:2	Direct Red 7		Direct Brown 2	Direct Red 10		
Direct Blue 2	Direct Brown 33	Direct Red 22																																																																											
Direct Blue 3	Direct Brown 51	Direct Red 28																																																																											
Direct Blue 6	Direct Brown 59	Direct Red 37																																																																											
Direct Blue 8	Direct Brown 74	Direct Red 39																																																																											
Direct Blue 9	Direct Brown 79	Direct Red 44																																																																											
Direct Blue 10	Direct Brown 95	Direct Red 46																																																																											
Direct Blue 14	Direct Brown 101	Direct Red 62																																																																											
Direct Blue 15	Direct Brown 154	Direct Red 67																																																																											
Direct Blue 21	Direct Brown 222	Direct Red 72																																																																											
Direct Blue 22	Direct Brown 223	Direct Red 126																																																																											
Direct Blue 25	Direct Green 1	Direct Red 168																																																																											
Direct Blue 35	Direct Green 6	Direct Red 216																																																																											
Direct Blue 76	Direct Green 8	Direct Red 264																																																																											
Direct Blue 116	Direct Green 8.1	Direct Violet 1																																																																											
Direct Blue 151	Direct Green 85	Direct Violet 4																																																																											
Direct Blue 160	Direct Orange 1	Direct Violet 12																																																																											
Direct Blue 173	Direct Orange 6	Direct Violet 13																																																																											
Direct Blue 192	Direct Orange 7	Direct Violet 14																																																																											
Direct Blue 201	Direct Orange 8	Direct Violet 21																																																																											
Direct Blue 215	Direct Orange 10	Direct Violet 22																																																																											
Direct Blue 295	Direct Orange 108	Direct Yellow 1																																																																											
Direct Blue 306	Direct Red 1	Direct Yellow 24																																																																											
Direct Brown 1	Direct Red 2	Direct Yellow 48																																																																											
Direct Brown 1:2	Direct Red 7																																																																												
Direct Brown 2	Direct Red 10																																																																												
iii. CMR dyes	<p>Dyes that are carcinogenic, mutagenic or toxic to reproduction shall not be used in all fibres and fabrics.</p> <table border="1"> <thead> <tr> <th>Dyes that are carcinogenic, mutagenic or toxic to reproduction</th> <th>CAS number</th> </tr> </thead> <tbody> <tr> <td>C.I. Acid Red 26</td> <td>3761-53-3</td> </tr> <tr> <td>C.I. Basic Red 9</td> <td>569-61-9</td> </tr> <tr> <td>C.I. Basic Violet 14</td> <td>632-99-5</td> </tr> <tr> <td>C. I. Direct Black 38</td> <td>1937-37-7</td> </tr> <tr> <td>C. I. Direct Blue 6</td> <td>2602-46-2</td> </tr> </tbody> </table>	Dyes that are carcinogenic, mutagenic or toxic to reproduction	CAS number	C.I. Acid Red 26	3761-53-3	C.I. Basic Red 9	569-61-9	C.I. Basic Violet 14	632-99-5	C. I. Direct Black 38	1937-37-7	C. I. Direct Blue 6	2602-46-2	A																																																															
Dyes that are carcinogenic, mutagenic or toxic to reproduction	CAS number																																																																												
C.I. Acid Red 26	3761-53-3																																																																												
C.I. Basic Red 9	569-61-9																																																																												
C.I. Basic Violet 14	632-99-5																																																																												
C. I. Direct Black 38	1937-37-7																																																																												
C. I. Direct Blue 6	2602-46-2																																																																												

	<table border="1"> <tbody> <tr> <td>C. I. Direct Red 28</td> <td>573-58-0</td> </tr> <tr> <td>C.I. Disperse Blue 1</td> <td>2475-45-8</td> </tr> <tr> <td>C.I. Disperse Orange 11</td> <td>82-28-0</td> </tr> <tr> <td>C. I. Disperse Yellow 3</td> <td>2832-40-8</td> </tr> </tbody> </table>	C. I. Direct Red 28	573-58-0	C.I. Disperse Blue 1	2475-45-8	C.I. Disperse Orange 11	82-28-0	C. I. Disperse Yellow 3	2832-40-8																																					
C. I. Direct Red 28	573-58-0																																													
C.I. Disperse Blue 1	2475-45-8																																													
C.I. Disperse Orange 11	82-28-0																																													
C. I. Disperse Yellow 3	2832-40-8																																													
iv. Potentially sensitising dyes	<p>Dyes that are potentially sensitising shall not be used in acrylic, polyamide and polyester fibres and fabrics made of these fibres.</p> <table border="1"> <thead> <tr> <th>Disperse dyes that are potentially sensitising</th> <th>CAS number</th> </tr> </thead> <tbody> <tr><td>C.I. Disperse Blue 1</td><td>2475-45-8</td></tr> <tr><td>C.I. Disperse Blue 3</td><td>2475-46-9</td></tr> <tr><td>C.I. Disperse Blue 7</td><td>3179-90-6</td></tr> <tr><td>C.I. Disperse Blue 26</td><td>3860-63-7</td></tr> <tr><td>C.I. Disperse Blue 35</td><td>12222-75-2</td></tr> <tr><td>C.I. Disperse Blue 102</td><td>12222-97-8</td></tr> <tr><td>C.I. Disperse Blue 106</td><td>12223-01-7</td></tr> <tr><td>C.I. Disperse Blue 124</td><td>61951-51-7</td></tr> <tr><td>C.I. Disperse Brown 1</td><td>23355-64-8</td></tr> <tr><td>C.I. Disperse Orange 1</td><td>2581-69-3</td></tr> <tr><td>C.I. Disperse Orange 3</td><td>730-40-5</td></tr> <tr><td>C.I. Disperse Orange 37</td><td>12223-33-5</td></tr> <tr><td>C.I. Disperse Orange 76</td><td>13301-61-6</td></tr> <tr><td>C.I. Disperse Red 1</td><td>2872-52-8</td></tr> <tr><td>C.I. Disperse Red 11</td><td>2872-48-2</td></tr> <tr><td>C.I. Disperse Red 17</td><td>3179-89-3</td></tr> <tr><td>C.I. Disperse Yellow 1</td><td>119-15-3</td></tr> <tr><td>C.I. Disperse Yellow 3</td><td>2832-40-8</td></tr> <tr><td>C.I. Disperse Yellow 9</td><td>6373-73-5</td></tr> <tr><td>C.I. Disperse Yellow 39</td><td>12236-29-2</td></tr> <tr><td>C.I. Disperse Yellow 49</td><td>54824-37-2</td></tr> </tbody> </table>	Disperse dyes that are potentially sensitising	CAS number	C.I. Disperse Blue 1	2475-45-8	C.I. Disperse Blue 3	2475-46-9	C.I. Disperse Blue 7	3179-90-6	C.I. Disperse Blue 26	3860-63-7	C.I. Disperse Blue 35	12222-75-2	C.I. Disperse Blue 102	12222-97-8	C.I. Disperse Blue 106	12223-01-7	C.I. Disperse Blue 124	61951-51-7	C.I. Disperse Brown 1	23355-64-8	C.I. Disperse Orange 1	2581-69-3	C.I. Disperse Orange 3	730-40-5	C.I. Disperse Orange 37	12223-33-5	C.I. Disperse Orange 76	13301-61-6	C.I. Disperse Red 1	2872-52-8	C.I. Disperse Red 11	2872-48-2	C.I. Disperse Red 17	3179-89-3	C.I. Disperse Yellow 1	119-15-3	C.I. Disperse Yellow 3	2832-40-8	C.I. Disperse Yellow 9	6373-73-5	C.I. Disperse Yellow 39	12236-29-2	C.I. Disperse Yellow 49	54824-37-2	A
Disperse dyes that are potentially sensitising	CAS number																																													
C.I. Disperse Blue 1	2475-45-8																																													
C.I. Disperse Blue 3	2475-46-9																																													
C.I. Disperse Blue 7	3179-90-6																																													
C.I. Disperse Blue 26	3860-63-7																																													
C.I. Disperse Blue 35	12222-75-2																																													
C.I. Disperse Blue 102	12222-97-8																																													
C.I. Disperse Blue 106	12223-01-7																																													
C.I. Disperse Blue 124	61951-51-7																																													
C.I. Disperse Brown 1	23355-64-8																																													
C.I. Disperse Orange 1	2581-69-3																																													
C.I. Disperse Orange 3	730-40-5																																													
C.I. Disperse Orange 37	12223-33-5																																													
C.I. Disperse Orange 76	13301-61-6																																													
C.I. Disperse Red 1	2872-52-8																																													
C.I. Disperse Red 11	2872-48-2																																													
C.I. Disperse Red 17	3179-89-3																																													
C.I. Disperse Yellow 1	119-15-3																																													
C.I. Disperse Yellow 3	2832-40-8																																													
C.I. Disperse Yellow 9	6373-73-5																																													
C.I. Disperse Yellow 39	12236-29-2																																													
C.I. Disperse Yellow 49	54824-37-2																																													
v. Chrome mordant dyes	<p>Chrome mordant dyes shall not be used in polyamide and wool fibres and and fabrics made of these fibres.</p>	A																																												
vi. Metal complex dyes	<p>Metal complex dyes based on copper, chromium and nickel shall only be permitted for dyeing wool, polyamide or blends of these fibres with man-made cellulose fibres (e.g. viscose).</p>	A																																												

Assessment and verification:

A. The applicant shall provide a declaration of non-use from the supplier supported by safety data sheets.

B. The applicant shall provide a report presenting the results of the final product testing. Content of azo dyes in the final product shall be tested according to EN 14362-1 and 14362-3. Limit value is 30 mg/kg for each arylamine. (Note: false positives may be possible with respect to the presence of 4-aminoazobenzene, and confirmation is therefore recommended)

5.6 Extractable metals (Applicability: covers made of any fibres)

The following limit values shall apply:

Metal	Limit values (mg/kg)	
	Covers for cot mattresses	All other products
Antimony (Sb)	30.0	30.0
Arsenic (As)	0.2	1.0
Cadmium (Cd)	0.1	0.1
Chromium (Cr):		
- Textiles dyed with metal complex dyes	1.0	2.0
- All other textiles	0.5	1.0
Cobalt (Co)		
- Textiles dyed with metal complex dyes	1.0	4.0
- All other textiles	1.0	1.0
Copper (Cu)	25.0	50.0
Lead (Pb)	0.2	1.0
Nickel (Ni):		
- Textiles dyed with metal complex dyes	1.0	1.0
- All other textiles	0.5	1.0
Mercury (Hg)	0.02	0.02

Assessment and verification:

The applicant shall provide a report presenting the results of the final product testing as verification for the limit values. The tests shall be: extraction according to ISO 105-E04 (acid sweat solution) and detection with inductively coupled plasma mass spectrometry (ICP-MS) or inductively coupled plasma optical emission spectrometry (ICP-OES, also referred to as ICP-AES).

5.7 Wastewater discharges from wet processing (Applicability: covers made of any fibres and filling materials made of wool)

Wastewater discharges to the environment shall not exceed 20 g COD / kg textile processing. This requirement shall apply to weaving, dyeing, printing and finishing processes used to manufacture the product(s). The requirement shall be measured downstream of on-site wastewater treatment plant and/or off-site wastewater treatment plant receiving wastewater from those processing sites.

If the effluent is treated on site and discharged directly to surface waters, it shall also meet the following requirements:

- (i) pH between 6 and 9 (unless the pH of the receiving water is outside this range)
- (ii) Temperature of less than 35°C (unless the temperature of the receiving water is above this value)

If colour removal is required by a derogation condition in criterion 10.1 then the following spectral absorption coefficients shall be met:

- (i) 7 m-1 at 436 nm (yellow sector)
- (ii) 5 m-1 at 525 nm (red sector)
- (iii) 3 m-1 at 620 nm (blue sector).

Assessment and verification:

The applicant shall provide detailed documentation and test reports, using ISO 6060 for determination of COD and ISO 7887 for determination of colour, and showing compliance with this criterion on the basis of monthly averages for the six months preceding the application, together with a declaration of compliance. The data shall demonstrate compliance by the production site or, if the effluent is treated off-site, by the wastewater treatment operator.

5.8 Mechanical resistance (Applicability: covers made of any fibre)

Mattress cover shall achieve satisfactory mechanical properties, which are defined by the following testing standards:

Property	Requirement	Test method
Tear strength	Woven fabrics ≥ 15 N Nonwoven fabrics ≥ 20 N Knitted fabrics: not applicable	ISO 13937-2 (woven fabrics) ISO 9073-4 (nonwoven)
Seam slippage	Woven fabrics ≥ 16 picks: maximum 6 mm Woven fabrics < 16 picks: maximum 10 mm Knitted fabrics and nonwovens: not applicable	ISO 13936-2 (under a load of 60 N for all woven fabrics)
Tensile strength	Woven fabrics ≥ 350 N Knitted fabrics and nonwovens: not applicable	ISO 13934-1

Assessment and verification:

The applicant shall provide reports describing the results of the tests performed according to ISO 13937-2 or ISO 9073-4 for tear strength, ISO 13936-2 (under a load of 60 N) for seam slippage and ISO 13934-1 for tensile strength.

5.9 Durability of flame retardant function (Applicability: covers made of any fibre)

Removable and washable covers shall retain their functionality after 50 wash and tumble dry cycles at a minimum of 75°C. Covers not intended being removable and washable shall retain their functionality after a soak test.

Assessment and verification:

The applicant shall provide reports from tests carried out according to the following standards, as appropriate:

- *ISO 6330 in combination with ISO 12138 for domestic wash cycles and ISO 10528 for industrial laundry cycles in case of removable and washable covers.*
- *BS 5651 or equivalent in case the cover is not intended being removable and washable.*

5.10 Dimensional change (Applicability: removable covers made of any fibres)

For mattress covers that are removable and washable, the dimensional changes after washing and drying at either domestic or industrial washing temperatures and conditions shall not exceed:

- Woven fabrics: +/- 3%
- Nonwoven fabrics: +/- 5%

This criterion does not apply to fabrics that are not promoted as "washable."

Assessment and verification:

The applicant shall provide test reports referring to appropriate standards. ISO 6330 in combination with EN 25077 shall be used as test method. Unless the cover states otherwise, the default conditions shall be washing 3A (60°C), drying C (flat drying) and ironing according the composition of the fabric.

Description of the criterion and rationale

Textiles appear to be a significant source of impacts for mattress systems. However, considering the limited uptake of the criteria by industry, it is generally considered that too strict prescriptions would pose additional burdens to manufacturers and that could ultimately prevent them from applying for the EU Ecolabel. It would be moreover difficult to understand if these would reflect the performance of the best 10-20% of products on the market in terms of environmental performance.

The proposed revision of requirements on textiles was thus based on the following elements:

- The need of simplifying criteria for textiles (an apparent bottleneck according to some industry stakeholder);
- The need of making a clearer differentiation between padding and ticking materials (i.e. filling and cover, respectively);
- The need to specify criteria relevant for the product, in particular with respect to the fitness-for-use;

- The need to align with the ongoing revision of the EU Ecolabel criteria for textiles so that fulfillment of those requirements would also imply respecting EU Ecolabel criteria, as far as possible.
- The will to harmonize with other labels, such as the Nordic Swan and Oeko-tex 100, when possible (as outlined in part of Article 6.3.f of the EU Ecolabel).

A simple set of criteria was drafted which takes into account the current revision of the EU Ecolabel criteria for textiles and elements of relevance from the Nordic Swan for furniture^a. Requirements mainly focus on hazardous substances. Elements of secondary importance for bed mattresses (e.g. colour fastness, printing) have been excluded from the criteria proposal.

The following rearrangement and additions are proposed. Some of the criteria refer to both filling materials (padding) and cover (ticking) of the mattresses, while others apply only to the cover.

Requirement	Comments/Recommendations	Identified scope
(a) General requirements on hazardous substances (including flame retardants, biocides and plasticizers)	<p>This is one of the issues of relevance for textiles in the Nordic Swan for furniture.</p> <p>An introductory criterion on "general requirement on hazardous substances" refer to specific prescriptions on hazardous substances (including flame retardants, biocides and plasticizers).</p> <p>Alignment with the EU Ecolabel for textiles is achieved so that textiles fulfilling EU Ecolabel criteria for textiles can automatically fulfil requirements for bed mattresses.</p>	<p>All covers;</p> <p>All filling materials</p>
(b) Auxiliaries used in preparations and formulations	<p>This is one of the issues of relevance for textiles in the Nordic Swan for furniture.</p> <p>In accordance with the current revision of the EU Ecolabel criteria for textiles, restrictions are set for the use of Alkylophenols, APEOs and other specific substances in all covers.</p> <p>Alkylophenols and APEOs are the main issue in wool scouring. For this reason, restrictions on these two groups of substances only are proposed also for filling materials made of wool. Restrictions in the EU Ecolabel criteria for textiles are extended to other specific substances but here it was considered appropriate to focus only on the main issues.</p> <p>Fulfilling EU Ecolabel criteria for textiles automatically implies fulfilling requirements for bed mattresses.</p>	<p>All covers;</p> <p>Filling materials made of wool</p>
(c) Surfactants, softeners and complexing agents in wet processes	<p>This is considered a relevant issue for all covers.</p> <p>In accordance with the current revision of the EU Ecolabel criteria for textiles, restrictions on non-</p>	<p>All covers</p>

^a <http://www.svanen.se/en/Svanenmarka/Kriterier/?p=2>

Requirement	Comments/Recommendations	Identified scope
	biodegradable surfactants are set.	
(d) Bleaching of pulp, yarns, fabrics and end products	This is considered a relevant issue for all covers. In accordance with the current revision of the EU Ecolabel criteria for textiles, the use of chlorine agents for bleaching and is restricted and limit values on OX and AOX are set.	All covers
(e) Dyes	This is considered a relevant issue for all covers, as it is also within Nordic Swan for Furniture. Criteria on dyeing have been aligned with the current revision of the EU Ecolabel criteria for textiles. These include: Halogenated carriers; Azo dyes; CMR dyes; Potentially sensitising dyes; Chrome mordant dyes; Metal complex dyes.	All covers
(f) Extractable metals	In accordance with the current revision of the EU Ecolabel criteria for textiles, restrictions on metals are set (formerly this was part of dyes and pigments). This is considered a relevant issue for all covers.	All covers
(g) Wastewater discharges from wet processing	This is one of the issues of relevance for textiles in the Nordic Swan for furniture. A new criterion is added which limits COD emissions from wet-processing. This has been aligned with the requirements from the current revision of the EU Ecolabel criteria for textiles. This is considered a relevant issue for all covers and for filling materials made of wool.	All covers; Filling materials made of wool
(h) Mechanical resistance	Resistance to abrasion is prescribed within the current Nordic Swan criteria for furniture. It was considered appropriate to include requirements on mechanical resistance as outlined in the existing technical standard EN 14976 "Textiles – Mattress ticking – Specifications and test methods". These prescriptions are specific for upholstery textiles and not included at the moment in the revised set of EU Ecolabel criteria for textiles. This is considered a relevant issue for all covers.	All covers
(i) Durability of flame retardant function	Resistance to abrasion is prescribed within the current Nordic Swan criteria for furniture. It was suggested to introduce a new criterion on the durability of functional treatments (such as flame retardants) in line with the EU Ecolabel criteria for	All covers

Requirement	Comments/Recommendations	Identified scope
	<p>textiles.</p> <p>This is considered a relevant issue for all covers.</p>	
(j) Dimensional change	<p>A new criterion 5(i) on dimensional changes during washing and drying has been added for removable and washable covers, in analogy to the Nordic Swan criteria for furniture and the EU Ecolabel criteria for textiles.</p> <p>The proposed criterion satisfies both the existing technical standard EN 14976 "Textiles – Mattress ticking – Specifications and test methods" and prescriptions set with the revision of the EU Ecolabel criteria for textiles. The testing procedure proposed is aligned with the EN 14976 standard (as it is the case for mattress ticking in the requirements for textiles).</p>	Removable and washable covers
Colour fastness to perspiration (acid, alkaline)	Not considered an issue of relevance here. This requirement has been removed.	Cover
Colour fastness to web rubbing	Not considered an issue of relevance here. This requirement has been removed.	Cover
Colour fastness to dry rubbing	Not considered an issue of relevance here. This requirement has been removed.	Cover

Criteria mainly focus on hazardous substances. Elements of secondary importance for bed mattresses (e.g. colour fastness) have not been considered within this revision.

Thresholds for performance criteria (durability and dimensional change) have been referred to the standard EN 14976 "Textiles – Mattress ticking – Specifications and test methods".

In accordance with the work done for the revision of the EU Ecolabel criteria for textiles, other issues of potential relevance for future consideration could be:

1. Sourcing of cotton and other cellulosic seed fibres in order to avoid the use and presence of pesticides;
2. Scouring of wool and keratin fibres;
3. Sustainable certified sourcing of man-made cellulose fibres and emission limits for the production process;
4. Sourcing of recycled polyester (which seems feasible for mattress systems^{a,b,c,d}), VOCs emissions during the production process and antimony content;
5. Prescriptions on the production of polypropylene;
6. Resistance to abrasion.

^a <http://bedtimesmagazine.com/recycling-mattress-components/>

^b <http://www.indratech-us.com/mattresses.html>

^c <http://www.socialstudentmattress.com/pages/sleep-school-10>

^d <http://steplight.com.au/2012/08/15/mattress-recycling-and-low-cost-beds-mattresses/>

However, these issues are not proposed here because considered to create undesired complications for a product group which should attract the interest of producers in order to ideally target the top 10-20% products on the market in terms of environmental performance.

Cost Benefit Analysis:

The costs associated with these change appears marginal and are related to align the criterion with the requirements of other labels.

Test Procedures and Economic Burdens:

Assessment and verification procedures have been identified within the changes outlined above. In comparison with the current revision of the EU Ecolabel criteria for textiles, a simpler approach is presented here in some cases. This is to avoid to pose additional burdens to manufacturers which could prevent them from applying.

DRAFT

Criterion 6. Glues and adhesives

Heading and text

Criterion 6. Glues and adhesives

Glues containing organic solvents shall not be used. Glues and adhesives used for assembling the product shall be also compliant with criterion 10 on hazardous substances.

Assessment and verification:

The applicant shall provide a declaration of non-use or a declaration from suppliers together with supporting documentation and compliance with criterion 10 shall be demonstrated accordingly.

Description of the criterion and rationale

The Commission Decision 2009/598/EC contains a prescription of glues which prohibit the use of glues based on organic solvents and carrying the following hazard statements: H351, H350, H340, H350i, H360F, H360D, H361f, H361d, H360FD, H361fd, H360Fd, H360Df, H331, H330, H311, H301, H310, H300, H370, H372. The new criterion 10 will restrict hazardous substances based on their classification with hazard statements / risk phrases. In order to maintain the same restriction on glues, derogations for glues and adhesives must be included in criterion 10.

Cost Benefit Analysis:

There should be no additional costs associated with this requirement since the only modification concerns the design of the criterion.

Test Procedures and Economic Burdens:

There should be no additional costs associated with this requirement since the only modification concerns the design of the criterion.

Criterion 7. Flame retardants

Heading and text

Criterion 7. Flame retardants

The following flame retardants shall not be added intentionally to the product, any article of it and any homogeneous part of it:

Name	CAS number	Acronym
Decabromodiphenylether	1163-19-5	decaBDE
Hexabromocyclododecane	25637-99-4	HBCD/HBCDD ^a
Octabromodiphenylether	32536-52-0	octaBDE
Pentabromodiphenylether	32534-81-9	pentaBDE
Polybrominated biphenyls	59536-65-1	PBB
Short chain chlorinated paraffins (C10-C13)	85535-84-8	SCCP
Tri-(2,3-dibromopropyl)-phosphate	126-72-7	TRIS
Tris(2-chloroethyl)phosphate	115-96-8	TCEP
Tris-(aziridinyl)-phosphin oxide	545-55-1	TEPA

The use of any flame retardant shall be compliant with criterion 10 on hazardous substances.

Assessment and verification:

The applicant shall provide and shall make suppliers to provide a declaration of non-use confirming that the listed flame retardants have not been included in the product, any article of it and any homogeneous part of it. A list of substances added to enhance the flame retarding properties shall be also provided, including concentrations and related H statements / R phrases, and compliance with criterion 10 shall be demonstrated accordingly.

Description of the criterion and rationale

Two main factors influence the update of this criterion. Firstly it was necessary to remove the differentiation between additive and non-additive flames retardants as this was impeding manufacturers from applying. Secondly, the horizontal criteria for hazardous substances extend the list of risk phrases which were included in the existing criterion. In addition, specific exclusion of substances was required because flame retardants are substances for which there is general concern over. The list of banned substances mirror that used by the Oeko-Tex 100 scheme which adopts this approach.^b This should include all flame retardants substances which are listed in the Candidate List of SVHC and in the List of substance restricted according to the REACH Regulation. Gathering further information on the flame retardants used in the mattresses could provide evidence for further revision in the future.

The existing criteria for flame retardants will be replaced with a list of specifically restricted flame retardant substances. In addition, the criterion on hazardous substances will place overarching restrictions on substances based on their inherent hazard properties. Where substances are added

^a <http://www.epa.gov/dfe/pubs/projects/hbcd/hbcd-and-alternatives-for-dfe.pdf>

^b http://www.oeko-tex.com/OekoTex100_PUBLIC/content1.asp?area=hauptmenue&site=grenzwerte&cls=02#10

to improve the flame retarding properties of the mattress, they should be declared together with the hazard statements associated.

Cost Benefit Analysis:

These substances are already banned, indirectly, through the new criteria on hazardous substances. However, the concerns over flame retardants, biocides and plasticizers led to include them in separate criteria. There should be no additional costs associated with this criterion over those incurred already through the new horizontal ban. Declaring the hazardous substances included in the product requires gathering data from suppliers. This information should be readily available from suppliers.

Test Procedures and Economic Burdens:

No test procedures are foreseen as suppliers should be aware of (or can identify) which substances are included in their materials (e.g. foams, padding, fabrics). Limiting the use of these substances should not have an impact on costs for manufacturers being these listed in the Candidate List of SVHC or restricted according to the REACH Regulation.

Criterion 8. Biocides

Heading and text

Criterion 8. Biocides

8.1 Production

The use of any biocidal active substance in the product shall have to be authorised under Directive 98/8/EC of the European Parliament and of the Council^a and Regulation (EC) No 528/2012 of the European Parliament and of the Council^b (list available at: http://ec.europa.eu/environment/biocides/annexi_and_ia.htm) and shall be compliant with criterion 10 on hazardous substances.

Assessment and verification:

The applicant shall provide either declarations of non-use or evidence that the use of biocides is authorised under the Biocides Directive 98/8/EC and the Biocides Regulation (EC) No 528/2012. A list of biocidal products added to the product shall be also provided, including concentrations and related H statements / R phrases, and compliance with criterion 10 shall be demonstrated accordingly.

(b) Transportation

Chlorophenols (their salts and esters), polychlorinated biphenyl (PCB), organo-tin compounds (including TBT, TPhT, DBT and DOT) and diemthyl fumarate (DMFu) shall not be used during the transportation or storage of the product, any article of it and any homogeneous part of it.

Assessment and verification:

The applicant shall provide and shall make suppliers to provide a declaration of non-use together with declarations of non-use from suppliers, as appropriate, confirming that the listed substances have not been used during the transportation or storage of the product, any article and any homogeneous part of it. A list of biocidal products added to the product shall be also provided, including concentrations and related H statements / R phrases, and compliance with criterion 10 shall be demonstrated accordingly.

Description of the criterion and rationale

Biocides are substances for which there is wide concern over, and explicit restriction of substances has been considered appropriate. Biocides will be also restricted through criterion 10, on the basis of their hazard properties. In general, it is considered that the use of a substance should be allowed if this has no adverse effect on people or the environment, also considering that this could be used for specific functions or categories of population (e.g. people allergic to mites and bed bugs).

^a Directive 98/8/EC of the European Parliament and of the Council of 16 February 1998 concerning the placing of biocidal products on the market (OJ L 123, 24.4.1998, p. 1).

^b Regulation (EU) No 528/2012 of the European Parliament and of the Council of 22 May 2012 concerning the making available on the market and use of biocidal products (OJ L 167, 27.6.2012, p. 1).

Criteria 6.1 and 10 of the Commission Decision 2009/598/EC have been merged into one single prescription. Reference to an update piece of legislation is also needed since the Biocides Directive 98/8/EC has been replaced by the Biocides Regulation (EC) No 528/2012.

The passage from a "white list" approach to a "black list approach" (based on the example of Oekotex 100^a) was originally considered for the revision. However, it was considered more appropriate to maintain a reference to the existing prescriptions on biocides, extended to all the components of the mattress.

Biocides in the final product will be allowed only if in line with current legislation and with criterion 10, which restrict the use of substances based on their hazard properties, thus representing stringent requirements.

For transport, an additional ban for DMFu was included in order to reflect Commission Regulation (EC) No 412/2012 and to be better aligned with the current revision of the EU Ecolabel for textiles. The requirement has been extended to all the product.

Cost Benefit Analysis:

These substances are already banned, indirectly, through the new criteria on hazardous substances. However, the concerns over flame retardants, biocides and plasticizers led to include them in separate criteria. There should be no additional costs associated with this criterion over those incurred already through the new horizontal ban. Declaring the hazardous substances included in the product requires gathering data from suppliers. This information should be readily available from suppliers.

Test Procedures and Economic Burdens:

No test procedures are foreseen as suppliers should be aware of (or can identify) which substances are included in their materials (e.g. foams, padding, fabrics). Limiting the use of certain substances may impact on costs to manufacturers.

^a http://www.oeko-tex.com/OekoTex100_PUBLIC/content1.asp?area=hauptmenue&site=grenzwerte&cls=02#10

Criterion 9. Plasticizers

Heading and text

Criterion 9. Plasticizers

The following plasticizers shall not be added intentionally to the product, to any article or to any homogeneous part of it:

Name	CAS number	Acronym
Di-iso-nonylphthalate (*)	28553-12-0; 68515-48-0 ^a	DINP
Di-n-octylphthalate	117-84-0	DNOP
Di(2-ethylhexyl)-phthalate	117-81-7	DEHP
Diisodecylphthalate (*)	26761-40-0; 68515-49-1 ^b	DIDP
Butylbenzylphthalate	85-68-7	BBP
Dibutylphthalate	84-74-2	DBP
Di-iso-butylphthalate	84-69-5	DIBP
Di-C6-8-branched alkylphthalates	71888-89-6	DIHP
Di-C7-11-branched alkylphthalates	68515-42-4	DHNUP
Di-n-hexylphthalate	84-75-3	DHP
Di-(2-methoxyethyl)-phthalate	117-82-8	DMEP

(*) only for cot mattresses

The sum of the prohibited plasticizers shall be lower than 0.10% by weight. The use of any plasticizer shall be compliant with criterion 10 on hazardous substances.

Assessment and verification:

The applicant shall provide and shall make suppliers to provide a declaration of non-use confirming that the listed substances have not been used in the product, any article of it and any homogeneous part of it. Safety data sheets for the formulation of polymers may be requested to confirm that the listed substances have not been included in the product. A list of plasticizers added to the product shall be provided, including concentrations and related H statements / R phrases, and compliance with criterion 10 shall be demonstrated accordingly. Additional verification for the total content of phthalates may be required in accordance with ISO 14389 when quality of information is considered insufficient.

Description of the criterion and rationale

Phthalates are a family of substances divided into two groups: high molecular weight (HMW) phthalates and low molecular weight (LMW) phthalates.

High molecular weight phthalates (HMW) such as DINP, DIDP and DPHP are registered under the REACH regulation, and are non-classified for any health and environmental hazard. These HMW

^a <http://echa.europa.eu/documents/10162/8fa0a07f-ec2a-4da6-bbe8-5b5e071b5c16>

^b http://echa.europa.eu/documents/10162/13641/didp_echa_review_report_2010_6_en.pdf

phthalates are not on the Candidate List of substances of very high concern. However, a ban is proposed for:

1. The use of DINP and DIDP in baby mattresses, since these are prohibited in toys and sex toys;
2. DNOP, since information about the risks posed by this substance appears less clear and more uncertain.

Low molecular weight phthalates (LMW) such as DBP, BBP, DIBP and DEHP are recognised as substances of very high concern by the REACH regulation because of their effects on reproduction in animal studies.

Criterion 10 will restrict substances based on their hazard properties. However, specific exclusion are required because of the concern associated with some phthalates. The list of banned substances mirror that used by the Oeko-Tex 100 scheme which adopts this approach.^a In addition this criterion set limits based on total concentration of low molecular phthalates.

Cost Benefit Analysis:

The substances highlighted are already indirectly banned through the new criteria on hazardous substances. However, the concerns over flame retardants, biocides and phthalates led to include them in separate criteria. There should be no additional costs associated with this criterion over those incurred already through the new horizontal ban. Declaring the hazardous substances included in the product requires gathering data from suppliers. This information should be readily available from suppliers.

Test Procedures and Economic Burdens:

No test procedures are foreseen as suppliers should be aware of (or can identify) which substances are included in their materials (e.g. foams, padding, fabrics). Limiting the use of certain substances may impact on costs to manufacturers, however further feedback is required to quantify the extent of this.

^a http://www.oeko-tex.com/OekoTex100_PUBL³ <http://apps.echa.europa.eu/registered/data/dossiers/DISS->^a Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC (OJ L 396, 30.12.2006, p. 1).

Criterion 10. Hazardous substances and mixtures

Heading and text:

Criterion 10. Excluded or limited substances and mixtures

10.1 Hazardous substances and mixtures

The EU Ecolabel may not be awarded if the product or any article of it, as defined in Article 3(3) of Regulation (EC) No 1907/2006 of the European Parliament and of the Council^a, or any homogenous part of it contains a substance or mixture meeting the criteria for classification with the hazard statements or risk phrases specified in the table below, in accordance with Regulation (EC) No 1272/2008 or Council Directive 67/548/EC^a, or contains a substance or mixture referred to in Article 57 of Regulation (EC) No 1907/2006, unless a specific derogation has been granted.

The most recent classification rules adopted by the Union shall take precedence over the listed hazard classifications and risk phrases. Applicants shall therefore ensure that any classifications are based on the most recent classification rules.

The hazard statements and 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.

The use of substances or mixtures which change their properties upon processing (e.g. become no longer bioavailable or undergo chemical modification) so that the identified hazards no longer apply are exempted from the above requirements. This shall include for instance modified polymers and monomers or additives which become covalently bonded within plastic coatings.

Hazard Statement ¹	Risk Phrase ²
H300 Fatal if swallowed	R28
H301 Toxic if swallowed	R25
H304 May be fatal if swallowed and enters airways	R65
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

^a Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC (OJ L 396, 30.12.2006, p. 1).

^a Council Directive 67/548/EEC of 27 June 1967 on the approximation of laws, regulations and administrative provisions relating to the classification, packaging and labelling of dangerous substances (OJ 196, 16.8.1967, p. 1).

H340 May cause genetic defects	R46
H341 Suspected of causing genetic defects	R68
H350 May cause cancer	R45
H350i May cause cancer by inhalation	R49
H351 Suspected of causing cancer	R40
H360F May damage fertility	R60
H360D May damage the unborn child	R61
H360FD May damage fertility. May damage the unborn child	R60/61/60-61
H360Fd May damage fertility. Suspected of damaging the unborn child	R60/63
H360Df May damage the unborn child. Suspected of damaging fertility	R61/62
H361f Suspected of damaging fertility	R62
H361d Suspected of damaging the unborn child	R63
H361fd Suspected of damaging fertility. Suspected of damaging the unborn child.	R62-63
H362 May cause harm to breast fed children	R64
H370 Causes damage to organs	R39/23/24/25/26/27/28
H371 May cause damage to organs	R68/20/21/22
H372 Causes damage to organs	R48/25/24/23
H373 May cause damage to organs	R48/20/21/22
H400 Very toxic to aquatic life	R50
H410 Very toxic to aquatic life with long-lasting effects	R50-53
H411 Toxic to aquatic life with long-lasting effects	R51-53
H412 Harmful to aquatic life with long-lasting effects	R52-53
H413 May cause long-lasting effects to aquatic life	R53
EUH059 Hazardous to the ozone layer	R59

EUH029 Contact with water liberates toxic gas	R29
EUH031 Contact with acids liberates toxic gas	R31
EUH032 Contact with acids liberates very toxic gas	R32
EUH070 Toxic by eye contact	R39-41
H317 (Sub-category 1A): May cause allergic skin reaction (trigger concentration $\geq 0.1\%$ w/w) ³	R43
H317 (Sub-category 1B): May cause allergic skin reaction (trigger concentration $\geq 1.0\%$ w/w) ³	
H334: May cause allergy or asthma symptoms or breathing difficulties if inhaled	R42

Notes

¹According to 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

²According to Directive 67/548/EEC and the REACH Directive 2006/121/EC and Directive 1999/45/EC as amended

³According to Commission Regulation (EU) No 286/2011 of 10 March 2011 amending, for the purposes of its adaptation to technical and scientific progress, Regulation (EC) No 1272/2008 of the European Parliament and of the Council on classification, labelling and packaging of substances and mixtures.

In accordance with Article 6(7) of Regulation (EC) No 66/2010 the following substances are specifically derogated from the requirements set out in criterion 10.1 and in accordance with the derogation conditions set out below. For each substance all derogation conditions shall be met for the specified hazard classifications.

Substances / Groups of substances	Derogated classification	Derogation conditions
Antimony Trioxide - ATO	H351	ATO shall be used as catalyst in polyester or as flame retardant synergist in textiles made of acrylic, cotton and polyester. Emissions to air in the workplace where ATO is applied shall meet an eight hour occupational exposure limit value of 0.5 mg/m^3 .
Nickel	H317, H351, H372	Nickel shall be contained in stainless steel.
Dyestuff for dyeing and	H301, H311, H331, H317,	Dust free dye formulations and/or

<p>non-pigment printing in textiles</p>	<p>H334</p> <p>H411, H412, H413</p>	<p>automatic dosing and dispensing of dyes shall be used by dye houses and printers to minimise worker exposure.</p> <p>The use of reactive, direct, vat, sulphur dyes with these classifications shall meet at least one of the following conditions:</p> <ul style="list-style-type: none"> - High affinity dyes are used; - Colour matching instrumentation is used; - Standard Operating Procedures for the dyeing process are used; - Colour removal is used in wastewater treatment (see criterion 5.7). <p>Solution dyeing processes are used;</p> <ul style="list-style-type: none"> - Digital inkjet printing processes are used; <p>The use of solution dyeing and/or digital printing are exempted from these conditions.</p>
<p>Flame retardants used in textiles</p>	<p>H317 (1B), H373, H411, H412, H413</p>	<p>The product shall be designed in order to meet fire protection requirements in ISO, EN, Member State or public sector procurement standards and regulations.</p> <p>The product shall meet the requirements for durability of function (see Criterion 5.9)</p>
<p>Optical brighteners</p>	<p>H411, H412, H413</p>	<p>Optical brighteners shall only be applied as additives during the production of acrylic, polyamide and polyester fibres.</p>
<p>Water, dirt and stain repellents</p>	<p>H411, H412, H413</p>	<p>The repellent and its degradation products shall be readily biodegradable and non-bioaccumulative in the aquatic environment, including aquatic sediment.</p>
<p>Auxiliaries used in textiles (comprising: Carriers, Levelling agents, Dispersing agents, Surfactants,</p>	<p>H301, H371, H373, H334, H411, H412, H413, EUH070</p>	<p>Recipes shall be formulated using automatic dosing systems and processes shall follow Standard Operating Procedures.</p>

Thickeners, Binders)	H311, H331, H317 (1B)	Residual auxiliaries classified accordingly shall not be present at concentrations of greater than 1.0% w/w on the final product.
Glues and adhesives	H304, H341, H362, H371, H373, H400, H410, H411, H412, H413, EUH059, EUH029, EUH031, EUH032, EUH070, H317, H334	Glue and adhesives shall respect conditions set in criterion 6.

Assessment and verification:

The applicant shall provide the bill of materials of the product, including a list with all articles and homogeneous part of it.

The applicant shall screen the presence of substances and mixtures that may be classified with the hazard statements or risk phrases reported above in the criterion. The applicant shall provide a declaration of compliance with requirement 10.1 for the product, any article of it or any homogenous part of it.

Applicants shall select the appropriate forms of verification. The main forms of verification are foreseen as follows:

- Articles manufactured according to a specific chemical formulation (e.g. latex and PUR foams): Safety Data Sheets shall be provided for the final article or for the substances and mixtures composing the final article above a cut-off limit of 0.10 % w/w.*
- Homogenous parts and any associated treatments or impurities (e.g. plastic and metal parts): Safety Data Sheets shall be provided for the materials composing that part of the product and for substances and mixtures used in the formulation and treatment of the materials remaining in the final part above a cut-off limit of 0.10 % w/w.*
- Chemical recipes used to impart a specific function to the product or to textile components of the product (e.g. glues and adhesives, flame retardants, biocides, plasticizers, dyes): Safety Data Sheets shall be provided for substances and mixtures used in the assembly of the final product or substances and mixtures applied to textile components during production, dyeing, printing and finishing processes and remaining in the textile components.*

The declaration shall include related documentation, such as declarations of compliance signed by the suppliers, on the non-classification of the substances, mixtures or materials with any of the hazard classes associated to the hazard statements or risk phrases referred in the list above in accordance with Regulation (EC) No 1272/2008, as far as this can be determined, as a minimum, from the information meeting the requirements listed in Annex VII to Regulation (EC) No 1907/2006.

The information provided shall relate to the forms or physical states of the substances or mixtures as used in the final product.

The following technical information shall be provided to support the declaration of classification or non-classification for each substance and mixture:

- (i) For substances that have not been registered under Regulation (EC) No 1907/2006 or which do not yet have a harmonised CLP classification: information meeting the requirements listed in Annex VII to that Regulation;
- (ii) For substances that have been registered under Regulation (EC) No 1907/2006 and which do not meet the requirements for CLP classification: information based on the REACH registration dossier confirming the non-classified status of the substance;
- (iii) For substances that have a harmonised classification or are self-classified: Safety Data Sheets where available. If these are not available or the substance is self-classified then information shall be provided relevant to the substances hazard classification according to Annex II to Regulation (EC) No 1907/2006;
- (iv) In the case of mixtures: Safety Data Sheets where available. If these are not available then calculation of the mixture classification shall be provided according to the rules under Regulation (EC) No 1272/2008 together with information relevant to the mixtures hazard classification according to Annex II to Regulation (EC) No 1907/2006.

Safety Data Sheets (SDS) shall be completed in accordance with the guidance in Section 10, 11 and 12 of Annex II to Regulation (EC) 1907/2006 (Requirements for the Compilation of Safety Data Sheets). Incomplete SDS shall require supplementing with information from declarations by chemical suppliers.

Information on intrinsic properties of substances may be generated by means other than tests, for instance through the use of alternative methods such as in vitro methods, by quantitative structure activity models or by the use of grouping or read-across in accordance with Annex XI to Regulation (EC) No 1907/2006. The sharing of relevant data across the supply chain is strongly encouraged.

Where substances used are derogated according to their hazard classification then the declaration shall specifically identify those derogated substances and provide supporting evidence showing how the derogation conditions are met.

10.2 Substances listed in accordance with Article 59(1) of Regulation (EC) No 1907/2006

No derogation from the exclusion in Article 6(6) of Regulation (EC) No 66/2010 shall be given concerning substances identified as substances of very high concern and included in the list provided for in Article 59(1) of Regulation (EC) No 1907/2006^a, present in mixtures, in an article or in any homogeneous part of the product in concentrations > 0.10% by weight.

Assessment and verification:

Reference to the latest list of substances of very high concern shall be made on the date of application. The applicant shall provide a declaration of compliance with requirement 10.2, together with related documentation, including declarations of compliance signed by the material suppliers and copies of relevant Safety Data Sheets for substances or mixtures in accordance with Annex II to Regulation (EC) No 1907/2006. Concentration limits shall be specified in the safety data sheets in

9eb02d6b-39b7-666e-e044-00144f67d031/AGGR-79ef4347-6b30-427f-b8d6-e061caa8fad5_DISS-9eb02d6b-39b7-666e-e044-00144f67d031.html#L-a32752a0-6813-4bb3-9263-14d976a82166

accordance with Article 31 of Regulation (EC) No 1907/2006 for substances and mixtures.

Description of the criterion and rationale

Recent changes to the EU Ecolabel legislation (EC/66/2010) have placed further restrictions on the use of hazardous materials and substances. These changes are addressed in Article 6(6): "The EU Ecolabel may not be awarded to goods containing substances or preparations/mixtures meeting the criteria for classification as toxic, hazardous to the environment, carcinogenic, mutagenic or toxic for reproduction (CMR), in accordance with Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures nor to goods containing substances referred to in Article 57 of Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency". Derogations of specific substances are allowable in exceptional circumstances where inclusion would prevent take up of the EU Ecolabel or shift the environmental burden to other life cycle phases or impacts (Article 6(7) of the EU Ecolabel regulation).

This will require the introduction of a new criterion to specifically handle these requirements. Restrictions are well defined and, for consistency, the technical wording used as base for discussion in other product groups (e.g. sanitary tapware) was taken as reference and adapted here. This was modified based on recent discussion with EUEB and stakeholders for this product group and on the outcomes from the revision of the EU Ecolabel criteria for textiles. The overall aim of the new criteria is to install a horizontal ban of substances based on their hazard properties, with derogations made under exception circumstances. Hazardous substances can be classified through hazard statements / risk phrases. A standard list of hazard statements reflecting the prescription set with Article 6(6) of the EU Ecolabel legislation (EC/66/2010) have been drawn by the Commission. Hazardous substances of concern must not be contained in the final product or in any part of it, if present above a certain concentration threshold.

The main features of the approach followed in the case of bed mattresses are reported as follows:

- Risk phases R42 (May cause allergy or asthma symptoms or breathing difficulties if inhaled) and R43 (May cause allergic skin reaction) have been included to the list of restricted hazard properties, as already done for other product groups, because considered appropriate for this product group.
- The concentration limit for SVHC is set to 0.1% by weight, in alignment with other EU Ecolabel product groups and as requested by industry stakeholders.
- Prescriptions on substances listed in accordance with article 59(1) of Regulation (EC) No 1907/2006 have been included as paragraph of the criterion (and not as separate criterion).

Moreover, it was suggested to make reference, whenever possible, to the list of registered substances under the REACH regulation scheme, available at: <http://echa.europa.eu/information-on-chemicals/registered-substances>.

The need of applying or some derogation was discussed along the revision process. A derogation is proposed for:

- The use of Antimony Trioxide as catalyst in polyester or as flame retardant synergist in textiles. The REACH dossier for ATO^d classifies this substance as H351 - suspected of causing cancer.

^a <http://apps.echa.europa.eu/registered/data/dossiers/DISS-> ^a Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC (OJ L 396, 30.12.2006, p. 1).

Hazards seems primarily associated to inhalation exposure during manufacture. Referencing to recently peer-reviewed scientific research^a industry reported that the use of ATO in mattresses is safe for both the environment and human health. Moreover, workplace safety is guaranteed by complying with the Occupational Exposure Limits (currently 0.5 mg/m³).

- The use of nickel in stainless steel. Nickel may be used to produce the stainless steel which composed springs. When it is present as an alloy, the associated hazard statements do not apply.
- Some risk phrases for glues and adhesives, in order to align with the existing criterion number 7 of the EU Ecolabel for bed mattresses (Commission Decision 2009/598/EC).
- Specific groups of substances used in textiles, as required with the revision of the EU Ecolabel criteria for textiles. A less stringent approach was however required for some derogations (Dyestuff for dyeing and non-pigment printing in textiles; Optical brighteners; Water, dirt and stain repellents) in order to keep requirements on textiles simpler. Fulfilling requirements in textiles should automatically mean fulfilling those in bed mattresses.

During the project, the need of derogations was even explored for acid boric and natural latex. However, these are not necessary because:

- Acid boric does not seem being used in Europe for applications related to mattresses.
- Natural latex is the main feedstock material with which natural latex foams are produced. While natural latex can cause allergic skin reactions in its natural form. foams do not carry any risk phrases.

Cost Benefit Analysis:

One of the requirements of the revision process is to align the new criteria with the EU Ecolabel regulation. Within the revision process no concerns have been raised about the inclusion of this criterion and the impact this might have on mattresses or materials used in mattresses, provided trace concentrations are acceptable and derogations are made for a small number of materials. The benefit of this is clear as it reduces potential exposure to hazardous substances through a blanket criterion based of hazard statements rather than identifying substances individually.

Test Procedures and Economic Burdens:

Verification is achieved through declarations and safety data sheets, therefore no testing should be needed. Reference should be made to the list of registered substances under the REACH regulation scheme, available at: <http://echa.europa.eu/information-on-chemicals/registered-substances>. Gathering this data is likely to require applicants to contact suppliers to outline the composition of materials used and identify from any substances which are added during processing.

^a The European Union Risk Assessment Report for DIANTIMONY TRIOXIDE http://esis.jrc.ec.europa.eu/doc/risk_assessment/REPORT/datreport415.pdf

Criterion 11. Emission of specified volatile organic compounds (SVOCs, VOCs, VVOCs) from the mattress

Heading and text:

Criterion 11. Emission of Volatile Organic Compounds (VOCs) from the mattress

The contribution of mattresses to the VOC content of the indoor air shall not exceed the final values reported below, for a period of 7 days or, alternatively, 28 days.

Values are calculated with the emission test chamber method and with reference to the European Reference Room, by analogy with the procedure specified in the 'Health-related Evaluation Procedure for Volatile Organic Compounds Emissions from Building Products' developed by the AgBB (2012 version available at http://www.umweltbundesamt.de/sites/default/files/medien/377/dokumente/agbb_evaluation_scheme_2012.pdf).

Substance	Final value 7th day	Final value 28th day
Formaldehyde	< 0.06 mg/m ³	< 0.06 mg/m ³
Other aldehydes	< 0.06 mg/m ³	< 0.06 mg/m ³
VOCs (total)	< 0.5 mg/m ³	< 0.2 mg/m ³
SVOCs (total)	< 0.1 mg/m ³	< 0.04 mg/m ³
Each detectable compound classified as categories C1A or C1B according to the Regulation (EC) No 1272/2008	< 0.001 mg/m ³	< 0.001 mg/m ³

Assessment and verification:

The applicant shall perform a test chamber analysis in accordance with the standard EN ISO 16000-9. The analysis of formaldehyde and other aldehydes shall comply with the standard ISO 16000-3; the analysis of VOCs and SVOCs shall comply with the standard ISO 16000-6. Testing following the standard CEN/TS 16516 shall be considered equivalent to those of the ISO 16000 series of standards.

Test results shall be calculated for an area specific ventilation rate "q" = 0.5 m³/m²h, corresponding to a loading factor "L" of 1 m²/m³ and an air change rate "n" of 0.5 per hour. In all these cases, the total surface of all surfaces (upside, downside and edges) of the mattress determine the area used for calculation of the loading factor. The test shall be performed on an entire mattress. Should this not be possible for any reason, any of the following alternative procedures of testing may be applied:

- Performing the test on a representative sample of the mattress (i.e. one half, one quarter or one eighth); cut edges shall be closed airtight by appropriate means. In order to provide a conservative estimation of the concentration values expected from the entire mattress, concentrations registered with the sample shall be scaled-up by volume (i.e. emissions shall be multiplied by a factor 2, 4 or 8);*

2. *Performing the test for each separate element forming part of the mattress. In order to provide a conservative estimation of the concentration values expected from the entire mattress, contributions registered with single components shall be combined using this formula $C_M = \sum \omega_i \cdot C_i$; where:*

- *" C_M " ($\mu\text{g} \cdot \text{m}^{-3}$) is the overall contribution from the entire mattress;*
- *" C_i " ($\mu\text{g} \cdot \text{m}^{-3} \cdot \text{kg}_i^{-1}$) is the contribution per unit of mass given by each–element " i " forming part of the mattress;*
- *" ω_i " (kg_i) is the weight of the element " i " in the entire mattress.*

The emissions of all elements of the mattress shall be summed up without taking into account any adsorption or barrier effects (worst-case approach).

Description of the criterion and rationale

Industry stated that it is difficult to test VOCs in the entire mattress. This is especially true for SMEs because the test can cost roughly EUR 50 000/mattress. Other tests or verifications should be proposed.

A manufacturer stated that they only perform this type of test on a risk basis, e.g. where high content of recycled material is used. It was suggested to reduce the scale of test to a sample of the product. However, there is the risk that this would be not representative because of boundary effects. An alternative approach could be the measurement of VOC emission from each single parts of the mattress.

Apart from this, it was reported that testing procedures need to be updated:

- EN 13419-1 (test chambers) no longer exists. It is now available as ISO 16000-9. A new standard should become available in 2013, CEN/TS 16516 (2013), that could be referred to in the User Manual. This new standard will incorporate standards ISO 16000-3, -6 and -9. Based on this, the assessment and verification procedure should be updated also for the other criteria related to VOCs, i.e. 1(b) and 2(b).
- EN 13419-2 (test cells) no longer exists; it is now available as ISO 16000-10 but this is not a test chamber and therefore it is not applicable to mattresses.
- ISO 16000-6 refers to the measurement of VOCs. A new reference to ISO 16000-3 is necessary for the measurement of formaldehyde and other aldehydes.
- The latest version of AgBB now is of 2012, not 2005.
- Time reference must be always provided.

The criterion on VOC emissions from the entire mattress has been revised based on the information gathered along the project. References to standards and testing methods have been updated and three assessment options are proposed:

A. Test performed on the whole mattress (criterion as usual and reference);

B. Test performed on a sample of mattress and estimation of overall emissions (1st potential alternative);

C. Test performed on different materials and recombination of single results to estimate the overall emissions (2nd potential alternative).

Options B and C should provide conservative estimations.

Limit values for carcinogenic compounds have been also added in accordance with the Blue Angel for mattresses^a.

DRAFT

^a http://www.blauer-engel.de/en/products_brands/vergabegrundlage.php?id=140

Criterion 12. Technical performance

Criterion 12.1

12.1 Quality

The mattress shall be designed in a way that a quality product meeting the needs of the consumer is placed on the market.

Assessment and verification:

The applicants shall provide a report describing the approach followed and the actions taken in order to ensure the quality of the product, the fulfillment of specific functional characteristics and the respect of thermo-hygrometric wellness requirements. The following aspects should be taken into consideration: research and development, selection of materials, internal testing and verification procedures for demonstrating the fulfillment of functional characteristics and the respect of thermo-hygrometric wellness requirements.

Description of the criterion and rationale

Including evidence about the quality of the product should ensure that mattresses continue to be fit for purpose over several years. Consequently, this will provide confidence to the consumer, and help to prevent premature replacements (thus limiting the impacts associated with new mattress purchase).

The possibility of requiring manufacturer to conduct the performance LGA test was removed from the criterion proposal because this test is apparently performed only by TUV in Germany and does not form part of any standards. No other test seems relevant for inclusion at the moment.

Cost Benefit Analysis:

The determination of the costs associated with these criteria is uncertain. However, such prescriptions are supposed to increase the attention towards quality aspects which should ultimately increase the appeal of the EU Ecolabel for producers of bed mattresses.

Test Procedures and Economic Burdens:

No test procedures are required for the quality assurance declaration as this will involve the generation of a report based on internal information.

Criterion 12.2

12.2 Durability

Mattresses shall present the following functional characteristics:

- Loss of height < 15%
- Loss of firmness < 20%

Assessment and verification:

The applicant shall provide a test report describing the results obtained following the test method EN 1957. The losses of height and firmness refer to the difference between the measurements made initially (at 100 cycles) and after the completion (30 000 cycles) of the durability test

Description of the criterion and rationale

Apart from some minor wording changes, no major modification was applied to the requirements of the Commission Decision 2009/598/EC.

Criterion 12.3

12.3 Warranty

A list of recommendations on how to use, maintain and dispose the mattress shall be reported in the warranty documentation. The warranty for the mattress shall be valid for a period of at least 10 years. This prescription shall not be required for baby mattresses.

Assessment and verification:

The applicant shall provide documentation attesting the implementation of the warranty scheme.

Description of the criterion and rationale

The technical lifespan of a mattress can be 7-10 years and more. However, the real lifespan of a mattress can be even longer, up to 25 years and more. According to an industry-financed study, a mattress should not be used after 7 years because of hygienic reasons^a. By implementing an extended warranty period, manufacturers will seek to ensure the performance of the mattress is guaranteed for an appropriate period of time. Consequently, this will provide confidence to the consumer and will ultimately help to prevent premature replacements (thus limiting the impacts associated with new mattress purchase). Based on stakeholders consultation, it is proposed to extend the warranty period to 10 years.

Cost Benefit Analysis:

It is difficult to quantify the costs associated with implementing this requirement. Costs for mattress construction and for mattress replacement are both likely to increase. The benefit that implementing this change will have is to ensure the durability of the mattress for an appropriate length of time. The consumer will have confidence that quality of the product is ensured by fulfilling the EU Ecolabel criteria for bed mattresses. The quality of materials is supposed to be increased.

^a Bain, D. (2006) A review of the bio-hazards presented by dust mites in older mattresses. Report from EBIA

This is likely to increase the environmental impact of the mattress but impacts are off-set by ensuring an extended lifespan of the product.

Test Procedures and Economic Burdens:

The testing requirements are relatively simple as only declaration and documented evidence is required; the cost of this will be minimal. The greater economic burdens will be associated with maintaining the extended warranty period.

DRAFT

Criterion 13. Design for disassembly and recovery of materials

Heading and text:

Criterion 13. Design for disassembly and recovery of materials

The manufacturer shall demonstrate that the mattress can be dismantled for the following purposes:

- undertaking repairs and replacements of worn-out parts,
- upgrading older or obsolete parts,
- separating parts and materials for the potential recycle of them.

Assessment and verification:

A report shall be submitted with the application detailing the dismantling of the mattress and the possible disposal of each part. For instance, the following actions could facilitate the dismantling of the mattress: preferring sewing to the application of glue; using removable covers; using single and recyclable materials for each homogeneous part.

Description of the criterion and rationale

Attention on re-use and re-manufacture is increasing significantly within the industry. Mattresses can be more or less difficult to disassemble and repair depending on their design. The design of the mattress could be improved to enhance disassembling and material recovery. Guidelines on how to draft such a prescription can be found, for instance, on article 4 of the Commission Decision 2009/300/EC (EU Ecolabel criteria for televisions).

Cost Benefit Analysis:

Little cost is expected to be associated with this action as this information should be available to the manufacturer. This may provide some benefit for the disassembly and materials recovery market as it will provide a clearer idea of the composition and materials used in the mattress. However, it is possible that this will only form a small proportion of the mattress market. This information may also benefit repair markets if the mattress is damaged, helping to encourage repair rather than disposal.

Test Procedures and Economic Burdens:

The information required is in the form of annotated drawings and descriptions and short document outlining design considerations. These documents will be relatively straightforward, and should not present significant burdens on the applicant.

Criterion 14. Information appearing on the EU Ecolabel

Heading and text:

Criterion 14. Information appearing on the EU Ecolabel

The EU Ecolabel can be applied both on the packaging and on the product. Box 2 of the EU Ecolabel shall contain the following text:

- 'Durable and high quality product'
- 'It restricts hazardous substances and minimises indoor air pollution'
- 'Environmental issues taken into account in the design stage'

The following text shall moreover appear:

'For more information on why this product has been awarded the EU Ecolabel, please visit <http://ec.europa.eu/environment/ecolabel/>

Assessment and verification:

The applicant shall provide a declaration of compliance and visual evidence.

Description of the criterion and rationale

Minor alterations to the wording of the Ecolabel box were needed to reflect better the content of the criteria. These are the new proposed sentences:

1. "Durable and high quality" statement moved at the top of the list.
2. Air pollution and hazardous substances could be merged into one point indicating impacts on human health are minimised.
3. A third point could state that environmental issues are taken into due account in the design of the product.

Criterion 15. Additional information to consumers

Heading and text:

Criterion 15. Additional information to consumers

The applicant shall provide consumers in written or audiovisual form with a list of recommendations on how to use, maintain and dispose the mattress.

Assessment and verification:

The applicant shall provide a declaration of compliance and visual evidence.

Description of the criterion and rationale

The direct education of consumers could help prolonging the life of a mattress and disposing appropriately the product after its use. Producers could for instance provide (in their websites or as written documentation) a list of actions to follow in order to ensure the mattress is used and maintained correctly for its technical lifetime.

For instance, these are the "care and cleaning" instructions provided by IKEA in one of their mattresses:

- *Complement the mattress with a mattress protector or a mattress pad. It makes it more hygienic, as it is easy to remove and clean.*
- *Some mattresses and pads have a washable cover. Read the tag inside the cover for more information. Make sure that the zipper is closed when washing the mattress cover. Vacuuming the mattress helps to remove dust and mites. Use upholstery cleaner to remove stains.*
- *If your mattress is turnable you should turn it about every three months. Turning a mattress ensures more even wear and helps to prolong its comfort.*
- *Don't fold the mattress. It can damage the springs and materials inside.*
- *Even the best mattresses become less comfortable with age, and all mattresses accumulate dust and mites over the years. So even if the SULTAN mattresses have a 25-year guarantee, we still recommend that you change your mattress every 8–10 years.*

Guidelines have been provided even by the UK's National Bed Federation:

Proper care will keep your bed in good condition. Always read and retain manufacturers care instructions and ask your retailer for advice, too. Otherwise, the following tips will help you to get the best out of your bed during its natural life.

1. *Use a washable, protective cover to protect the mattress (and pillows) from stains. Barrier fabrics for allergy sufferers are also available.*
2. *In the mornings, throw back the bed clothes and leave the bed to air for 20 minutes to allow body moisture to evaporate.*
3. *Turning your mattress over from side and side and end to end every few months (every week for the first three months) helps upholstery fillings to settle down more evenly. Some more luxurious mattresses, with much thicker layers of fillings designed to mould themselves to the contours of your body, may retain signs of these impressions, despite turning. Even non-turn mattresses need to be rotated every few months.*
4. *Don't make a habit of sitting on the edge of the bed and don't let the kids bounce on it.*

5. *Don't roll up or squash a mattress to store or transport it - this can cause permanent damage.*
6. *Handles are designed to help you position a mattress on its base - do not use them to support the full weight of the mattress - they may pull out and damage the fabric.*
7. *Don't leave polythene wrappings on a new mattress - dampness, mildew and rotting could all result from a build-up of condensation.*
8. *Vacuum your mattress and base from time to time to remove fluff and dust. This should be carefully done so as not to dislodge fillings or damage tufts. Open windows while vacuuming - especially if there is an asthma sufferer in the house.*
9. *When tackling stains, use mild detergent and warm or cold water. Never over soak a mattress or base.*
10. *Putting a new mattress on a base for which it was not intended, a new mattress on an old base or a board between the mattress and base can impede comfort and reduce the useful life of the mattress - as well as affecting any guarantees or warranties.*

Cost Benefit Analysis:

Cost associated with this criterion should be negligible, compared to the benefits related to the correct use and disposal of the product.

Test Procedures and Economic Burdens:

No test procedures are required.

3.3 Other changes applied

Change 1

Removing criterion 5 on wooden materials from the final set of criteria revising the Commission Decision 2009/598/EC

Description of the change and rationale

Removal of all criteria for wood is needed if wooden bases and similar items are removed from the scope. If these products remain within scope, the criteria should be aligned with the recently revised criteria for Copying and Graphic Paper Criteria.

Cost Benefit Analysis:

There is no impact if the requirement is removed. The existing criteria prescribes that 60% of wood is sourced from sustainable sources, whereas the new criteria specifies that all wood should be from certified or recycled sources. FSC certified lumber commands a price premium of between 15-25% over no FSC lumber.^a This could have an effect on products containing wood. The benefits of adopting this criterion would be that it provides scope for the use of recycled material or, where virgin material is used, the criterion would ensure that:

- Wood sources are managed in an environmentally, socially, appropriate and economically viable manner.
- Forests are managed with respect to some basic criteria, if the origin of the virgin wood is not third party certified. However this can only comprise 50% of virgin wood. This would help exclude from the following sources:
 - Illegally harvested forests;
 - Wood harvested in violation of traditional and civil rights;
 - Wood harvested in forests in which High Conservation Values (areas particularly worth of protection) are threatened through management activities;
 - Wood harvested from conversion of natural forests;
 - Wood harvested from areas where genetically modified trees are planted.

Test Procedures and Economic Burdens:

No specific test procedures are associated with the implementing change in criteria. However, relevant certificates and declarations will be needed to demonstrate the authenticity of certified or recycled wood, indicating types, quantities and origin. Documentation indicating that this is used in the Ecolabelled product will also be provided.

Some economic burden is associated with procurement of certified wood, which could increase the cost of the product. In addition, an extra burden will be placed on the manufacturing process, as procedures will be required to ensure that the correct wood is used in the EU Ecolabelled product, wood may thus need to be stored and processed separately.

^a <http://www.fsc-uk.org/?p=3569>

Change 2

Removing criterion 13 on packaging from the final set of criteria revising the Commission Decision 2009/598/EC

Description of the change and rationale

The impacts of packaging are found to be small when compared to the rest of the mattresses lifecycle. Therefore, prescribing requirements for the use of recycled materials in packaging would place a disproportionate burden on applicants.

Cost Benefit Analysis:

There is little cost associated with this change, some reduction in cost maybe associated with the change in packaging requirement.

Test Procedures and Economic Burdens:

There is little cost associated with this change, some reduction in cost maybe associated with the change in packaging requirement.

4 Overview on all the proposal discussed

The issues listed in the table below were raised during the criteria revision process; they would represent either revisions to existing criteria or addition of new criteria. After the analysis summarised in the Preliminary Report (available at <http://susproc.jrc.ec.europa.eu/mattresses/>), it has been decided which changes to propose for inclusion in the current revision of the criteria (see last column of the table). For further information on the proposal withdrawn it is recommendable to refer to Section 5 of the Preliminary Report.

Criteria area	Issue	Revision/ New Element	Comment
1. Materials	Consumption of materials		
	a. Formulation of the mattress	New	<ul style="list-style-type: none"> Proposal on eco-design of mattresses withdrawn after the 1st AHWG meeting
	Sourcing of materials		
	b. Use of renewable-based materials	New	<ul style="list-style-type: none"> Proposal on promotion of renewable materials withdrawn after the 1st AHWG meeting
	c. Use of organic materials	New	<ul style="list-style-type: none"> Proposal on promotion of organic materials withdrawn after the 1st AHWG meeting
	d. Use of recycled materials	New	<ul style="list-style-type: none"> Proposal on promotion of recycled materials withdrawn after the 1st AHWG meeting
	e. Use of certified and sustainable materials	Revision for wood/ New for others	<ul style="list-style-type: none"> Revised criterion necessary for wood only if wooden bed bases are of relevance (See Section 3.3 in the Technical Report) Proposal on sourcing sustainable-certified natural latex for the production of natural latex foams withdrawn after the 2nd AHWG meeting Proposal on sourcing sustainable-certified vegetable oils for the production of PUR foams withdrawn after the 2nd AHWG meeting
	f. Energy and LCA requirements	New	<ul style="list-style-type: none"> Proposal of screening materials based on energy or other LCA benchmarks withdrawn after the 1st AHWG meeting

Criteria area	Issue	Revision/ New Element	Comment
	Production of materials		
	g. Latex and PUR foams	New	<ul style="list-style-type: none"> • Proposal of setting water emission limits for latex production withdrawn after the 2nd AHWG meeting • Proposal of avoiding the use of TDI in PUR foam production withdrawn after the 2nd AHWG meeting • Proposal of setting emission limits for the production of diisocyanates (precursors of PUR foams) withdrawn after the 2nd AHWG meeting
	h. Springs	New	<ul style="list-style-type: none"> • Proposal of avoiding the use of stainless steel withdrawn after the 2nd AHWG meeting • Proposal of sourcing steel in accordance with updated BAT withdrawn after the 2nd AHWG meeting
	i. Textiles	New	<ul style="list-style-type: none"> • New proposal presented for the Nov 2013 EUEB meeting (See Section 3.2 in the Technical Report)
2. Manufacture and storage	a. Energy performance	New	<ul style="list-style-type: none"> • Proposal on requiring energy data for future benchmarking withdrawn after the 1st AHWG meeting
	b. Best industrial practices	New	<ul style="list-style-type: none"> • Proposal on requiring the implementation of measure for storage and distribution of the product withdrawn after the 2nd AHWG meeting
	c. EMS / CSR criteria for the industrial site	New	<ul style="list-style-type: none"> • Proposal on requiring the implementation of EMS/CSR schemes withdrawn after the 1st AHWG meeting
3. Substances	a. Use of materials and substances of concern		

Criteria area	Issue	Revision/ New Element	Comment
	- Horizontal approach	New	<ul style="list-style-type: none"> New proposal presented for the Nov 2013 EUEB meeting (See Section 3.2 in the Technical Report)
	- Materials	Revision	<ul style="list-style-type: none"> Proposal for the Nov 2013 EUEB meeting with some corrections to limit values and assessment and verification procedures for Latex and PUR foams (See Section 3.2 in the Technical Report)
	- Flame retardants	Revision	<ul style="list-style-type: none"> No significant modifications to the proposal for the Nov 2013 EUEB meeting (See Section 3.2 in the Technical Report)
	- Biocides	Revision	<ul style="list-style-type: none"> Black list removed from the proposal for the Nov 2013 EUEB meeting (See Section 3.2 in the Technical Report)
	- Plasticizers	New	<ul style="list-style-type: none"> No significant modifications to the proposal for the Nov 2013 EUEB meeting (See Section 3.2 in the Technical Report)
4. Fitness for use	a. Quality of the product		
	- Extended warranty	New	<ul style="list-style-type: none"> Proposal for the Nov 2013 meeting unchanged (See Section 3.2 in the Technical Report)
	- Additional requirements on the technical performance	New	<ul style="list-style-type: none"> Proposal for the Nov 2013 meeting unchanged (See Section 3.2 in the Technical Report)
5. Packaging	a. Significance of the criterion on packaging	Revision	<ul style="list-style-type: none"> Removing prescription on packaging kept in the proposal for the Nov 2013 meeting (See Section 3.3 in the Technical Report)
6. End of life	a. Diversion from landfill through a collection system	New	<ul style="list-style-type: none"> Proposal of diverting from landfill through a collection system withdrawn after the 2nd AHWG meeting
	b. Design for disassembling and recovery of	New	<ul style="list-style-type: none"> Proposal for the Nov 2013 meeting unchanged (See section 3.3 in the Technical Report)

Criteria area	Issue	Revision/ New Element	Comment
	materials		
7. Environmental performance	a. Energy and Life cycle performance of the product	New	<ul style="list-style-type: none"> Proposal on requiring a LCA study for future benchmarking withdrawn after the 1st AHWG meeting
8. Others	a. Consistency of the criteria	New	<ul style="list-style-type: none"> Proposal for the Nov 2013 meeting unchanged (See Section 3.3 in the Technical Report)
	b. Information of consumers and on the box 2 of the label	Revision/New	<ul style="list-style-type: none"> Proposals for the Nov 2013 meeting on box 2 (revision) and on information to consumers (new) unchanged (See Section 3.2 in the Technical Report)
	c. VOCs emissions from the entire mattress	Revision	<ul style="list-style-type: none"> Minor changes to limit values and assessment and verification procedures in the proposal for the Nov 2013 EUEB meeting (See Section 3.2 in the Technical Report)

5. Possible issues to consider in the next revision

Within the revision process several issues and actions have been outlined which have not been taken into consideration within the current revision. Aspects of interest for the next revision could for instance:

A. Materials

- Sustainable sourcing and production of latex and PUR foams
- Emission limits for latex and PUR foams production
- Criteria on metals and plastic springs
- Additional criteria on sourcing and production of textiles for cover and filling
- Consideration of nanomaterials

B. Manufacture

- Energy consumption limits for production and storage sites
- Requirement for storage and distribution

C. Use

- Additional quantitative requirement on thermo-hygrometric wellness, comfort and quality

D. End of Life

- Promotion of disposal practices aimed at diverting from landfill

D. Environmental performance

- Implementation of lifecycle requirements (e.g. for GHG emissions)
- Implementation of eco-design principles (aimed at finding a optimal balance between life of the mattress and environmental impacts)

Annex I: Table of Comments

Highlighted in yellow: comments received after the June 2013 EUEB meeting.

Thematic area	Summary of comments received (new comments, received between 12 March 2013 and 5 July 2013, are highlighted with yellow)	Response and action
Format of the criteria document	The separation of criteria into 4 areas (A, B, C and D) generates confusion, especially considering that some criteria refer to other ones.	Criteria areas have been removed from the criteria document
Criteria validity	Four years is a too short revision period for this product group and it is demanding too much time and resources without evidence of an increased take-up by the market and of a positive impact on the environment. Because of the growing number of product groups, the revision period of 4 years will lead to an unsustainable workload in the coming years. The revision time should be doubled for this product group.	<p>The reason why there is a relatively limited penetration of the EU Ecolabel for this product group have been analysed at the beginning of the revision process and handled as far as possible during the revision. These included: strictness of the criteria for flame retardants, complexity of the criteria for textiles, ensuring the quality of the mattress and the credibility (assessment and verification) of the criteria. It has moreover to be understood that considering the ratio between number of licences and market of the product group, bed mattresses does not perform worse than other successful product groups like, for instance, textiles.</p> <p>Discussion on the appropriate revision time for this and other product groups should be held at the level of EUEB. Usually the validity period is never longer than 4 years.</p>
Definitions	The definition of VOC is not consistent with the specifications of the tests used to assess the emissions of VOCs. Reference to CEN/TS 16516 (2013) should be made.	Possibilities to make reference to the updated standard will be explored before the expected vote of the criteria document.
Scope	Wooden and upholstered bed base should be included in the product group “wooden furniture”.	This supports the Commission's proposal of moving wooden bed bases (i.e. Scandinavian mattresses) to the furniture product group.
Criterion 1. Latex foam	<i>SFC latex</i>	

<p>It is proposed to withdraw the proposal requiring that 10% of natural latex has to be sourced from FSC certified sources. Indeed, it is difficult to obtain FSC certified natural latex in economically high volumes. Moreover, the list of reported organizations seems to certify only dry rubber (used for instance for the production of gloves) and not the liquid latex used for foam production.</p>	<p>The proposal has been withdrawn from the set of criteria. This could be an issue to consider in the next criteria revision and thus it could be included in the Commission statement.</p>
<p><i>Water emission limits</i></p> <p>1. Reference to emission factors would be appreciate (i.e. pollutants emitted with respect to the total production).</p> <p>2(a). Differentiation between municipal and industrial wastewater treatment plant should be made.</p> <p>2(b). Since municipal wastewater plants mostly treat domestic wastewater or pre-treated industrial wastewater from production plants, prescriptions on emission limits into water should be valid for all the production plants. Assessment and verification should take place every 12 months.</p> <p>3. Values reported in the Blue Angel for footwear refer to rubber production in Germany. Rubber is formed from dry natural latex with almost no wastewater. The production of latex foam is instead based on liquid feedstock and results in larger amount of wastewater. Values could be very ambitious for other countries. Emission range across Europe vary between:</p> <ul style="list-style-type: none"> • 150-3000 mg/L for COD emissions; • 0-15 mg/L for nitrogen emissions; 	<p>1. Common industry practice is to monitor emissions as concentrations and to respect limit values expressed as concentration in the water effluents. Converting concentration limits to emission factors would require a set of information which is not available.</p> <p>2. Limit values for zinc, lead, AOX and benzene and derivatives could be applied to all plants. Limit values for COD, N, total phosphorous and toxicity to fish eggs are relevant for plants discharging into a water body only.</p> <p>3. Criteria should refer to latex foam production and be acceptable in all Europe without generating excessive economic burdens, especially considering the small uptake of the Ecolabel for this product group.</p> <p>Based on the collected elements, the proposal has been withdrawn and it will be one of the issues included in the Commission statement to consider in the next criteria revision.</p>

- 0.1-5 mg/L for zinc emissions.

However, setting ambitious emission levels would lead to high waste water treatment investments which would be perceived by industry as an unnecessary burden for this label so that it is suggested to postpone this issue to the next revision.

Emission of VOCs

1. Some minor modifications are necessary to be coherent with the Euro Latex ECO Standard:

- vinyl cyclohexane has to be changed to vinylcyclohexene
- 4-phenyl cyclohexane has to be changed to 4-phenylcyclohexene
- The limit for pentachlorophenol is 0.1 ppm.
- The limit for butadiene is 1 ppm

2. Emission of Formaldehyde should be 0.0050 mg/m³ as in the previous set of EU Ecolabel criteria (0.010 mg/m³ is set in the Euro Latex ECO Standard).

3. An alternative limit value is set for formaldehyde, i.e. 20 ppm, when the presence of this substance is measured according to ISO 14184-1. This standard is used to measure the content of formaldehyde in the material. ISO 16000 is instead used to measure the emissions of formaldehyde after ventilated storage. How can be demonstrated that 20 ppm measured according to ISO 14184-1 corresponds to 0.0050 mg/m³ according to ISO 16000? ISO 14184-1 is used only by some industries for daily routine controls, but not everywhere. This is an indirect determination and there is no generic conversion factor. It would be recommendable to take

1. The criterion was revised accordingly.

2. According to industry, formaldehyde values lower than 0.0050 mg/m³ can be always achievable and this is the limit value proposed in the revised set of criteria.

3. In accordance with the feedback received, only reference to ISO 16000 will be made.

it out.

4. If industry can respect the value for formaldehyde it does not make sense to keep the requirement.

5. Emissions of VOCs are already assessed at product level. Repeating the test on single materials would be unnecessary and expensive.

6. Vinyl chloride comes from vinyl / PVC which are not used here. Assessing the presence of this substance would moreover require separate air monitoring techniques, which would make the test more expensive.

7. The analysis of nitrosamines would require separate air monitoring techniques, which would make the test more expensive.

8. Presence of carbondisulfide in the foam cannot be excluded but this is stinking so much that nobody would buy a product emitting significant amounts of this substance. Assessing the presence of this substance would moreover require separate air monitoring techniques, which would make the test more

4. A requirement on formaldehyde is present in the EuroLatex ECO-Standard, the label used at European level by the latex industry to award more environmentally friendly latex foams on the market. To remove the requirement would be equivalent to say that this is not an environmental issue, which is not the case. Moreover, even if European producers can respect this limit value, the same cannot be demonstrated for producers outside Europe. The existing limit should be kept in absence of more detailed information shared by producers.

5. Total emissions of VOCs, SVOCs, formaldehyde and other aldehydes is analysed at mattress level. Target compounds are also screened here which would provide an additional level of protection. These requirements are present in the EuroLatex ECO-Standard, the label used at European level by the latex industry to award more environmentally friendly latex foams on the market.

6-7. These requirements are present in the EuroLatex ECO-Standard, the label used at European level by the latex industry to award more environmentally friendly latex foams on the market.

8. This requirement has been introduced in accordance with Blue Angel and there is so far general agreement on keeping it on board.

	<p>expensive.</p> <p>9. CEN/TS 16516 will be the successor of ISO 16000-3, -6, -9, -11 by October 2013.</p> <p>10. Saying that "The air sampling will be started 24 hours after chamber loading and finished latest 30 hours" is too vague and will lead to systematic differences between laboratories because emissions will decay rapidly at that point of time. Better formulation could be, for instance:</p> <ul style="list-style-type: none"> • "Air sampling will be done 24±1 h after loading of the chamber during 1 hour on Tenax TA and DNPH cartridges for respectively VOC and formaldehyde analysis", • "Air sampling shall start 24 hours after chamber loading. Sampling duration for other parameters may be longer but shall end not later than after 30 hours" 	<p>Possibilities to make reference to the updated standard will be explored before the expected vote of the criteria document.</p> <p>The assessment and verification procedure will be revised to try to take into account for the recommendation provided also bearing in mind that EuroLatex ECO-Standard is the reference document for the latex foam industry.</p>
	<p><i>Dyes and pigments</i></p> <p>If dyes and pigments are not used in latex foam, then they should not be addressed again.</p>	<p>Reference should be maintained since it cannot be excluded that dyes and pigments could be used in some foams.</p>
<p>Criterion 2. PUR foam</p>	<p><i>Palm oil RSPO and soy bean RTRS</i></p> <p>RSPO and RTRS are still controversial certifications and additional certification schemes would be needed to include other vegetable oils (e.g. sunflower oil and rapeseed oil). However, environmental benefits which could be achieved from such prescription are considered uncertain and marginal, given the relatively low weight contribution of renewable materials to the average production of PUR foams in the EU.</p>	<p>The proposal has been withdrawn from the set of criteria. This could be an issue to consider in the next criteria revision and thus it could be included in the Commission statement.</p>
	<p><i>Precursors</i></p>	

<p>1. The CAS number for TDI used for PUR foam manufacturing is 26471-62-5 (isomer mixture of 2,4-TDI and 2,6-TDI; 80/20 %). The CAS number for a typical MDI used for PUR foam manufacturing is: 32055-14-4.</p> <p>2. No discriminations between MDI/TDI should be made. TDI and MDI cannot be compared because they are different diisocyanates providing different PU physical foam properties. TDI forms a significant share of the market in Europe (80%) and its use of TDI is safe since workers exposure is controlled. Moreover, foams produced from MDI need to have a higher density (+30%), thus requiring more material and being more expensive.</p> <p>3. The BREF data for large volume organic chemicals 2003 reflects commonly available technology used in 2000 for TDI. There is not a more recent BREF but there is improved technology since 2000.</p>	<p>1. Corrections have been made.</p> <p>2. The proposal has been withdrawn from the set of criteria. This could be an issue to consider in the next criteria revision and thus it could be included in the Commission statement.</p> <p>3. The proposal has been withdrawn from the set of criteria. This could be an issue to consider in the next criteria revision and thus it could be included in the Commission statement.</p>
<p>Restricted substances</p> <p>1. A requirement limiting the chlorine content of isocyanate in PUR foams was removed because of the lack of reliable test methods. However, ASTM D4661 is suitable. This requirement should be re-included in the criteria proposal because the presence of these substances could increase the risk of smell.</p> <p>2. The organotin compounds used in some plastics are di-organostannic tin-compounds and should not to be confounded with tri-organostannic tin compounds (TBT) which were mainly used in the past as anti-fouling agents for ships with significant impact on the environment. EU eco-label schemes should clearly make the distinction between these two kinds of compounds, banning eventually the latter. Many organotin stabilisers have food contact approval, an indirect</p>	<p>1. The requirement will be reintroduced.</p> <p>2. Organotin compounds are persistent in the environment and they can be hazardous for human health. The requirement on these compounds is harmonised with the Cert-PUR label, the label used at European level by the PUR industry to award more environmentally friendly PUR foams on the market. The restriction on organotin compounds is not horizontal but focusing on the substances that create concern based on the experience of industry.</p>

indication that their migration, if any, is extremely low.

Emission of VOCs

1. VOC measurements should be effected after 72 hours, as specified in CertiPUR.

2(a). The formaldehyde emission values for both latex and PUR foams are set at 0.005 mg/m³ while no requirements are foreseen for textiles. According to CertiPUR, emission value should be lower than 0.010 mg/m³. A formaldehyde limit of 0.010 mg/m³ is suggested for all foam products. This would be stricter than in Oeko-Tex, where a limit of 0.10 mg/m³ is applied even to textiles used for babies.

2(b) The limit value should be kept at 0.005 mg/m³ as in the previous set of EU Ecolabel criteria.

3. Styrene emission values for PUR and latex foams are set at 0.005 and 0.010 mg/m³, respectively. The same values should be applied.

4. Emission values of aromatic hydrocarbons for PUR and latex foams are set at 0.50 and 0.30 mg/m³, respectively. The same values should be applied.

5. According to a part of the plastic industry, styrene is not present in this type of foam and thus its testing is not

1. The reference to 30 hours erroneously comes from EuroLatex ECO standard. This has been changed to 72 hours in the new criteria draft.

2. Emission values of 0.005 mg/m³ were kept from the previous criteria document. Latex and PUR foams are not the same materials and their requirements have to be harmonised with the respective industry standards, i.e. EuroLatex ECO Standards and CertiPUR Label. In both the standards the emission value limit for formaldehyde is set at 0.010 mg/m³. Industry stated that 0.050 mg/m³ can be easily respected by latex foam producers, while the respect of this limit appears more problematic for PUR foam. However, it is considered inappropriate to weaken this limit in the new criterion. Based on these elements, the limit set for PUR is 0.005 mg/m³ as for latex. No limit values on formaldehyde are prescribed for textiles because criteria for textiles have been identified as one of the reasons for the limited uptake of the EU Ecolabel for this product group. However, this lack is compensated by criterion #11, dealing with emissions of VOCs from the entire mattress.

3-4. Latex and PUR foams are not the same materials and their requirements have to be harmonised with the respective industry standards, i.e. EuroLatex ECO Standards and CertiPUR Label. The presented limit values will be kept.

5. This requirement is present in the Cert-PUR label, the label used at European level by the PUR industry to award more

	<p>necessary.</p> <p>6. Emissions of VOCs are already assessed at product level. Repeating the test on single materials would be unnecessary and expensive.</p> <p>7. CEN/TS 16516 will be the successor of ISO 16000-3, -6, -9, -11 by October 2013.</p>	<p>environmentally friendly PUR foams on the market.</p> <p>6. Total emissions of VOCs, SVOCs, formaldehyde and other aldehydes is analysed at mattress level. Target compounds are also screened here which would provide an additional level of protection. These requirements are present in the Cert-PUR label, the label used at European level by the PUR industry to award more environmentally friendly PUR foams on the market.</p> <p>Possibilities to make reference to the updated standard will be explored before the expected vote of the criteria document.</p>
	<p><i>Dyes and pigments</i></p> <p>The presence of a criterion on dyes and pigments does not seem to create a problem to producers and thus it is not necessary.</p>	<p>Reference should be maintained since it cannot be excluded that dyes and pigments could be used in some foams.</p>
<p>Criterion 3. Spring and wires</p>	<p><i>Selection of materials</i></p> <p>1. It appears strange that significantly different environmental profiles result comparing stainless and carbon steel and not comparing virgin and recycled steel. Materials are compared on a weight basis while functionality and properties should be also taken into account. The Ecoinvent dataset is not considered representative for steel materials. For instance, converters are not the technology currently used in the EU and current production of steel is made in electric arc furnaces using 60% by weight iron scraps as feedstock. Moreover, since stainless steel is more expensive it is likely that it is used in high-quality bed mattresses to fulfil technical specifications.</p>	<p>1. There are several kinds of springs which can be composed of different materials, usually carbon steel, harmonic steel (Si Steel) and polymeric springs (Nylon). Glass fibres and stainless steel are even used. A simplified assessment of the impacts associated with the production and disposal of 1 kg of different materials was performed but the application of these results was limited by the fact that it was not possible to take into account for possible variations in the functionality and technical properties of the different materials. The respective industry association informed to have a complete and robust database. However, no environmental information has been shared even if requested. The collected evidence is not robust enough to discriminate against materials.</p>

DRAFT

Two additional prescriptions from the Nordic Swan criteria for furniture have been even considered for discussion:

- The metal in the product must be separable from other materials (does not include surface treatment) without the use of specialist tools;
- At least 20% by weight of the metal in the product must be recycled metal. Alternatively, the smelting plant that supplies the metal must on an annual basis use at least 20% recycled metal in its production.

However, such prescriptions are not considered appropriate by the respective industry association because:

- Carbon steel springs are very often coated, for instance with copper, for a smoother surface, while stainless steel does not need surface coating to be corrosion resistant, bright and smooth.
- Steel is already produced using a significant amount of scraps. However, due to the long life time of steel in some markets, the amount of end-of-life steel which is available at a given time is much less than the needs (a half as a proxy). In other terms, promoting recycled content in a product will result in making scraps unavailable for other products and thus voiding the potential environmental benefits. The end-of-life recycling rate is considered a more appropriate performance indicator and it depends on the product (in average it is about 80%). Recycling is relevant for materials, not for products. The recycled content indicator is considered relevant for materials which are not so much recycled and for which the recycling chain is not mature.

	<p>2. Market of plastic springs is considered marginal at the moment and this issue should be postponed to the next revision</p>	<p>2. The inclusion of criteria on plastic springs was based on the Austrian Ecolabel for bed mattresses, which prescribes that springs made of plastics must be free of halogenated organic compounds. Since the market of plastic springs is marginal at the moment and since a horizontal approach on chemical substances will be in any case introduced, the proposal has been withdrawn and it will be one of the issues included in the Commission statement to consider in the next criteria revision.</p>
	<p><i>Sourcing in accordance with BAT</i></p> <p>Industry representatives expressed some concerns about the possibilities of verifying that BATs are applied, especially because most of the steel springs consumed in the EU is imported.</p>	<p>Due to the difficulties highlighted, this issue could be discussed in the next revision of criteria.</p>
	<p><i>Degreasing and galvanisation</i></p> <p>Degreasing and galvanisation are production related issues and do not represent main environmental impacts.</p>	<p>The focus of the EU Ecolabel is on the full life cycle of products and materials. When developing criteria it is also important to understand what can be addressed in practice. Different proposals have been discussed for metals but these are the minimal requirements for which general agreement has been reached so far. Due to the iterative nature of the EU Ecolabel, additional criteria could be re-discussed in the next revision based on the experience gained and on the methods developed in the meanwhile.</p>
<p>Criterion 4. Coconut fibres</p>	<p>Some clarification on the meaning of rubberised coconut fibres is necessary, especially to understand:</p> <ol style="list-style-type: none"> 1. If these can include only latex or even PUR; 2. Which requirements would be relevant. 	<p>Industry clarified that fibres might be rubberized in order to bring them into a desired shape. This is usually done with a latex emulsion sprayed onto fibres and subsequent vulcanization of this Latex rubber. Polyurethanes are not used for that purpose. On the basis of experience with textile floor coverings (constructed of coconut fibres and SBR latex) the emissions do not deviate significantly and the same set</p>

		of criteria prescribed for latex foam should be applied. Based on these elements, wording has been improved and the link to criteria for latex foam has been maintained.
Criterion 5. Textiles (fabrics and fibres used as mattress cover and/or filling materials)	<p>1. Criteria should be aligned with the EU Ecolabel for Textiles, however, the EU Ecolabel criteria for Textiles mainly related to clothes applications and need to be selected carefully and adapted to this application. In addition, respect of criteria for textiles is perceived as one of the bottlenecks by industry. Criteria for ticking (mattress cover) should refer to technical specification accepted by the upholstery industry. Criteria for padding (filling materials) could refer to sustainability of the source.</p> <p>2. There are no criteria for cotton sourcing as in the case of the product group textiles.</p> <p>3. Structure of the criterion, wording and definition of ticking material, removable covers and padding materials need to be improved.</p> <p>4. Metal complex dyes are not necessary for bed mattresses and they should thus be banned.</p> <p>5. Harmonisation with the criteria for textiles should be improved.</p>	<p>1-2. The main criteria areas for ticking and padding has been selected based on the analysis of the current Nordic Swan criteria for furniture and of the current revision of the EU Ecolabel criteria for textiles. Requirements on performance have been considered and these are aligned with the most relevant industry standards provided in BS EN 14976:2005 (Textiles. Mattress tickings. Specification and test methods). Other criteria that rule the use and content of substances are aligned with the current revision of the EU Ecolabel criteria for textiles. Criteria on sourcing of fibres have not been proposed because it is generally agreed that stricter criteria on textiles could create a barrier for applicants. These issues could be reconsidered during the next revision.</p> <p>3. The structure and text of the criteria has been modified accordingly with special attention on clarifying any sources of uncertainty.</p> <p>4. In accordance with the feedback received, it will be considered how to address a full restriction on metal complex dyes. The requirement should be however aligned with textiles.</p> <p>5. Temporal coordination and harmonisation with the criteria for textiles is one of the aims of the revision, also keeping mind flexibility and existing differences between textiles and upholstery products. Structure of the criteria document can vary from product group to product group.</p>
Criterion 6. Glues and adhesives	-	-

<p>Criterion 7. Flame retardants</p>	<p>1. The term ‘flame retardant’ refers to a substance or substances which limit(s) or reduce(s) the spread of fire, and does not refer to a specific class of substances. Restrictions on entire groups of flame retardants, such as additive flame retardants or brominated flame retardants, would be not appropriate because discriminating against those substances which do not carry any risk phrases. Moreover, brominated FRs are neither broadly banned by legislation in the EU or elsewhere nor largely used in PUR because there are other FR systems of choice, notably chlorinated phosphate esters.</p> <p>2. The proposed EU Ecolabel criteria for bed mattresses, which reflects the Öko-Tex requirements, seems to be a workable compromise. However, the list of restricted H/R-phrases set with article 10 appears too long and should be shortened in order to ensure technical feasibility and that 10-20% of all products currently on the market are able to fulfil the criteria.</p> <p>3. The presence of a criterion on the ban of some Flame Retardants (#7) and of a criterion on the ban of SVHC (#10) appears redundant.</p> <p>4. The use of flame retardants should be reduced to a minimum and focus on flame retardancy should be made.</p> <p>5. Flame retardants should be totally banned. Particular concern is raised by ATO, decaBDE and halogenated flame</p>	<p>1. The existing distinction between additive and reactive flame retardants have been removed during the revision. The approach considered to handle flame retardants is to rely on the horizontal restriction of chemicals based on their hazardousness properties and to explicitly mention a black list of undesired flame retardants.</p> <p>2. The list of risk phrases was developed and agreed within the Commission to put in practice art. 6(6) of the EU Regulation and it is applied to all the product groups. A task force is working on the revision the horizontal approach on hazardous substances and to make it practical.</p> <p>3. The current approach is a compromise to satisfy different groups of stakeholders. The main requirement affecting the use flame retardants is article 10 on hazardous substances. However, it has been requested to explicitly a ban some flame retardants to emphasize this environmental issue.</p> <p>4. Restriction on flame retardants is based on hazard statements and risk phrases (article 10). A black list of flame retardants of interest for the mattress industry is also reported in support of producers. A criterion on the durability of function (flame retardancy) in textile materials will be proposed in accordance with the revision of EU Ecolabel criteria for the textiles product group.</p> <p>5. A total ban of flame retardants would be not fair for reasons reported in point #1, especially for those countries</p>
---	---	---

	retardants.	where stricter fire safety requirements are set by mandatory legislation. DecaBDE is already included in the list of banned substances. Rationale behind the derogation of ATO is reported in the discussion of criteria #10 (Restrictions on hazardous substances and mixtures in the final product).
Criterion 8. Biocides	<p>1. Please check consistency of this criterion because it could be that "Chlorophenols (their salts and esters), polychlorinated biphenyl (PCB), organo-tin compounds and diemthyl fumarate (DMFu)" are not mentioned in the right place.</p> <p>2. The criteria should be split into two parts:</p> <p>a) biocides that are not allowed (the list in the table in the document) and</p> <p>b) biocides that can be used in accordance with the biocide directive.</p> <p>In the updated preliminary report (May 2013) the wording is different: there it is reported that only biocides approved to be used in mattresses are allowed.</p> <p>3. Biocides that are used to impart a primary biocidal function (e.g. antibacterial or odour-inhibition function) should be totally restricted because they are not needed for domestic</p>	<p>1. Reference to these biocides is made in the old criterion 6.1: "Chlorophenols (their salts and esters), PCB and organotin compounds shall not be used during transportation or storage of mattresses and semi-manufactured mattresses". DMFu has been added in accordance with the current revision of the EU Ecolabel criteria for textiles. Here it is said that they cannot be used, implicitly meaning they cannot be used neither in the product recipe nor for transportation purposes. Since these biocides should not be used in the mattress recipe, the current formulation of the criterion should not create a problem. The new wording of the criterion should clarify which biocides are restricted during storage and transportation and which ones refer to the product recipe.</p> <p>2. The structure of the criterion has been improved and it takes into account for this feedback.</p> <p>3. Apart from being restricted through criterion 8, biocides must respect also criterion 10 on the restriction of substances based on their hazard properties / risk phrases.</p>

	<p>applications (medical devices are excluded from the scope). A wording that fits with this request could be, for instance: "Bed mattresses shall not be treated with biocides in order to impart a primary biocidal function, e.g. antibacterial or odour-inhibition function. For material preservation, biocidal active substances must be approved for such purposes according to the Biocides Regulation (EC) No 528/2012 and criterion 10 on hazardous substances shall be respected".</p> <p>4. Nanosilver should be banned.</p>	<p>Wording will be improved to clarify this aspect. In general, it is considered that a substance should not be restricted if this has no adverse effect on people or the environment, also considering that this could be used for specific functions or categories of population (e.g. people allergic to mites, bed bugs).</p> <p>4. Use of nanomaterials is not widespread. If used, nanosilver will have to respect criteria 8 and 10 as all the biocides. This means that the use of nanosilver would be possible only if the substance is on the positive list foreseen in the biocide regulation and if the properties of the substance do not allow it to be classified as hazardous according to criteria 10.</p>
<p>Criterion 9. Plasticizers</p>	<p>1(a). The use of HMW phthalates in the product should not be allowed because there is not enough evidence that these substances does not constitute an environmental concern. It should be also observed that there is a lot of political focus and consumer awareness are on these substances and their exclusion from the EU Ecolabel would be a strong message to the market.</p> <p>1(b). The phthalates are a family of substances divided into two groups: high molecular weight (HMW) phthalates and low molecular weight (LMW) phthalates. The HMW phthalates have all been registered for REACH and do not require any classification for health and environmental effects, nor are they on the Candidate List for Authorisation. High phthalates are not CMR, neither are they considered endocrine disruptors. Therefore it is not correct to refer to all phthalates as "substances of concern". DIDP, DINP and DNOP are restricted for use in toys and in childcare articles which can be</p>	<p>The list of banned substances is adapted from that used by the Oeko-Tex 100 scheme. Information on low and high molecular weight phthalates (LMW / HMW) has been reviewed. LMW phthalates such as DBP, BBP, DIBP and DEHP are recognised as substances of very high concern by the REACH regulation because of their effects on reproduction in animal studies. HMW such as DINP, DIDP and DPHP are registered under the REACH regulation, and are non-classified for any health and environmental hazard. These HMW phthalates are not on the Candidate List of substances of very high concern. However, restrictions are kept for:</p> <ul style="list-style-type: none"> • The use of DINP and DIDP in baby mattresses, since these are prohibited in toys and sex toys; • DNOP, since information about the risks posed by this substance appears less clear and more uncertain.

	<p>placed in the mouth. OEKO-TEX standard restricts the use of DINP and DIDP for product class I (textile products for babies). In addition, the Australian Government's Department of Health and Ageing chemicals assessment scheme states that "Current risk estimates do not indicate a health concern from exposure of children to DINP in toys and child care articles even at the highest (reasonable worst-case) exposure scenario considered". In order to be compliant with the European Union legislation and with the OEKO-TEX standard, it is proposed make a distinguish between products for babies and those for adults. Moreover, since DIDP and DINP do not require any classification for health and environmental effects, it is request to remove DINP and DIDP from the list of restricted substances.</p> <p>2. Plasticizers should be limited for all the users.</p>	<p>Phthalates will have also respect criterion 10 on the restriction of substances based on their hazardousness properties.</p> <p>2. Plasticizers of concern for their hazard properties are restricted for all the mattresses. The only exception is represented by DINP and DIDP, which present concern only for children and should thus be restricted only in mattress designed for this population. A definition will be provided for this kind of mattresses.</p>
<p>Criterion 10. Restrictions on hazardous substances and mixtures in the final product</p>	<p>1. Concentration limits below <0.010% by weight would be more stringent than the current Reach legislation that is already a significant burden for industry. The 0.1% limit should be used as prescribed in Reach.</p> <p>2. CLP is no subject for PUR and latex foam mattresses because CLP applies only to substances and mixtures. So CLP only applies during production processes. The CertiPUR criteria are challenging and transparent and stricter than the horizontal approach set with criterion 10. However, providing SDS describing the complete foams formulation would mean to spread commercially sensitive information. It would be important to clarify how SDS will be used and how</p>	<p>1. The concentration limit has been increased to 0.10% as in Reach.</p> <p>2. SDS are requested for all the substances and mixtures used in a product applying for a EU Ecolabel license. When applicants use components from a third party supplier, the chemistry of which is commercially sensitive, and the supplier does not want to divulge the composition, the supplier will provide the relevant information directly to CBs. Any sensitive information must be kept secure but if this is considered insufficient a non-disclosure agreement can be</p>

confidentiality of the information provided will be ensured. In some cases, a complete chemical description is neither possible. Any disclosure of detailed composition of foams is a major concern for industry and might be a barrier for the Ecolabel.

3. The same approach of the criteria for textiles should be followed. An approach has been also developed by the Swedish Chemical Agency to restrict hazardous chemicals in textiles based on different levels of concern.

4. Chemicals are restricted based on the list of hazard statements and risk phrases. The explicit exclusion of chemicals along the document is considered redundant and unnecessary. Chemicals carrying H-statements and R-phrases of concern should not be mentioned. Moreover, the list of restrictions (H- and R-phrases) is unworkable and will lead to problems by banning for example substances that are widely used, and which cannot be replaced. The exclusion of chemicals based on their hazard classification goes against the risk-based approach embodied in the REACH Regulation. Any decision or recommendation regarding the use of chemicals should be made on the basis of REACH principles.

Derogation of ATO

1. The use of ATO in mattresses is:

- Justified by the fact that it enhances the effectiveness of flame retardants and decreases the amounts of flame retardants necessary to obtain the required level of safety.

signed. The information will therefore not enter the public domain. Wording will be improved to clarify this point.

Restrictions on the basis of H-statements / R-phrases are required by the EU Ecolabel regulation and must be harmonised as much as possible between the different product groups. The Commission is working on the development of a standard text that can be widely accepted for this requirement. In the logic of continuous improvement, it is possible that this criterion text will be revised and improved further.

4. Due to its voluntary nature, the aim of the EU Ecolabel is being more ambitious than mandatory instruments like, for instance, REACH. For this reason, the EU Ecolabel is based more on the concept of inherent hazard than on that of risk. Restrictions on the basis of H-statements / R-phrases are required by the EU Ecolabel regulation and must be harmonised as much as possible between the different product groups. Apart from this, it was agreed during the revision process that restrictions on specific chemicals should have been kept as a guide for producers and consumers.

1. Based on the elements collected, the derogation of ATO has been accepted.

	<ul style="list-style-type: none"> • Widespread (typically in mattress covers as catalyst in polyesters at concentration of 200-300 mg/kg or as flame retardant synergist in textiles at concentration of 3-6 % by weight) • Safe along the entire lifecycle, based on EU-RAR and REACH data and on recently peer-reviewed literature. There is neither an environmental nor a human risk identified for the use of ATO in mattresses and textiles. There is a potential inhalation hazard linked to fine ATO dust particles but this does not cause any health damage to the workers under the current, normal working conditions and workplace safety is guaranteed by complying with the current Occupational Exposure Limit of 0.5 mg/m³. This is confirmed by the results of lung capacity testing of workers in the biggest European ATO production facility, monitored from 2000-2011. <p>Based on the analysis above, industry supports a derogation for ATO from the Ecolabel Mattresses (and by extension also Textiles) in accordance with article 6(7) of the EU Ecolabel regulation. The 0.5 ppm extractable Sb content for textiles/polymers, and a 260 ppm concentration limit for polymers are feasible for industry from a technical and competitive point of view.</p> <p>2. The use of ATO should be banned. This is a hazardous substance and allowing its use would mean to approve the use of brominated flame retardants, which are instead strictly ruled by legislation in Europe.</p>	<p>2. Hazards due to ATO occurs at the production level and they are controlled. Flame retardants are restricted through criteria 7 (black list) and 10 (H-statements / R-phrases). A full ban of this class of chemicals is not considered fair.</p>
--	--	---

	<p><i>Derogation of natural latex</i></p> <p>Proteins contained in natural latex can cause allergic skin reactions either through direct contact with the skin, or by inhalation of powder from powdered latex gloves. Proteins contained in natural latex are destroyed during the latex foam production processes so that mattress cores made of natural latex do not contain any active proteins. Latex foams do not carry any risk phrases and thus a derogation for this material is not necessary.</p>	<p>Based on the elements collected, the derogation of natural latex have been removed.</p>
<p>Criterion 11. Emission of Volatile Organic Compounds (VOCs) from the mattress</p>	<p>1. The measurement of VOCs emission from the entire mattresses is an economic burden for some manufacturers. Large chambers are needed but their availability in Europe is limited and costs are high. Other tests and/or assessment and verification procedures should be proposed. An option could be to refer to prescriptions for different materials.</p>	<p>1. Further investigation has been carried-out to explore alternatives to the test of the entire mattress. Two options are identified: testing a sample of the product, or measuring VOC emissions from each single parts of the mattress.</p> <p>Apart from this, it has been found that testing procedures need to be updated:</p> <ul style="list-style-type: none"> • EN 13419-1 (test chambers) no longer exists. It is now available as ISO 16000-9 (When available, CEN/TS 16516 (2013) should be applied in analogy). Based on this, the assessment and verification procedure should be updated also for the other criteria related to VOCs, i.e. 1(b) and 2(b). • EN 13419-2 (test cells) no longer exists; it is now available as ISO 16000-10 but this is not a test chamber and therefore it is not applicable to mattresses. Based on this, the assessment and verification procedure should be updated also for the other criteria related to VOCs, i.e. 1(b) and 2(b). • ISO 16000-6 refers to the measurement of VOCs. A new reference to ISO 16000-3 is necessary for the measurement of formaldehyde and other aldehydes.

	<p>2. CEN/TS 16516 will be the successor of ISO 16000-3, -6, -9, -11 by October 2013.</p>	<p>Based on this, the assessment and verification procedure should be updated also for the other criteria related to VOCs, i.e. 1(b) and 2(b).</p> <ul style="list-style-type: none"> • The latest version of AgBB now is of 2012, not 2005. • Time reference must be always provided. <p>The criterion on VOC emissions from the entire mattress has been revised. References to standards and testing methods have been updated and three assessment options are proposed:</p> <p>A. Test performed on the whole mattress (criterion as usual and reference);</p> <p>B. Test performed on a sample of mattress and estimation of overall emissions (1st potential alternative);</p> <p>C. Test performed on different materials and recombination of single results to estimate the overall emissions (2nd potential alternative).</p> <p>Options B and C should provide conservative estimations.</p> <p>Possibilities to make reference to the updated standard will be explored before the expected vote of the criteria document.</p>
<p>Criterion 12. Technical performance</p>	<p>(a) Quality</p> <p>The LGA test should not be included within the EU Ecolabel requirements because this is a private test method developed by TUV in Germany and apparently neither revised and validated by official technical standards committees nor performed by other test laboratories. Moreover, the LGA test includes more parameters than the criteria today and this would increase costs.</p>	<p>The possibility of requiring manufacturer to conduct the performance LGA test was removed from the criterion proposal because this test is apparently performed only by TUV in Germany and does not form part of any standards. No other tests seems relevant for mandatory inclusion within this criterion.</p>

	<p>The main standards for bed mattresses are:</p> <p>BS EN 597-1:1995 (Furniture. Assessment of the ignitability of mattresses and upholstered bed bases. Ignition source: smouldering cigarette)</p> <p>BS EN 597-2:1995 (Furniture. Assessment of the ignitability of mattresses and upholstered bed bases. Ignition source: match flame equivalent)</p> <p>BS EN 14976:2005 (Textiles. Mattress tickings. Specification and test methods)</p> <p>BS EN 1725:1998 (Domestic furniture. Beds and mattresses. Safety requirements and test methods)</p> <p>BS EN 1957:2012 (Furniture. Beds and mattresses. Test methods for the determination of functional characteristics and assessment criteria).</p> <p>EN ISO 15496:2004 (Textiles -- Measurement of water vapour permeability of textiles for the purpose of quality control)</p> <p>UNI-EN 31092:1996 (Textiles. determination of physiological properties. Measurement of thermal and water-vapour resistance under steady-state conditions (sweating guarded-hotplate test). (ISO 11092:1993)).</p>	
	<p>(c) warranty</p> <p>While it can be accepted that environmental impacts can be reduced by extending the lifetime of a mattress, there are also health issues to consider since mattresses are exposed to contaminations such as body fluids, bed mites, etc. A warranty extension for more than 7 years is not recommendable based on the information provided in http://www.sleepcouncil.org.uk/the-seven-year-hitch/. Many stakeholders have requested a longer warranty period, up to</p>	<p>The technical lifespan of a mattress can be 7-10 years and more. However, the real lifespan of a mattress can be even longer, up to 25 years and more. According to an industry-financed study, a mattress should not be used after 7 years because of hygienic reasons. By implementing an extended warranty period, manufacturers will seek to ensure the performance of the mattress is guaranteed for an appropriate period of time. Consequently, this will provide</p>

	<p>10-15 years.</p> <p>Warranties normally only cover manufacturing defects. It is suggested to provide guidance on how to handle a mattress in the most correct way, for instance following the example of IKEA or the UK's National Bed Federation.</p>	<p>confidence to the consumer and will ultimately help to prevent premature replacements (thus limiting the impacts associated with new mattress purchase). Based on stakeholders consultation, it is proposed to extend the warranty period to 10 years.</p> <p>Guidance on the correct use of the mattress is required with criterion 15.</p>
<p>Criterion 13. Design for disassembly and recovery of materials</p>	<p>1. Re-use and re-manufacture are becoming significant within the industry, and will need to be addressed. For simple foam mattresses the proposed criteria would probably work, as interior could easily be changed. However for more complex mattresses (e.g. spring mattresses) this would be more difficult. The criterion could be re-formulated as it follows:</p> <p>"The manufacturer shall demonstrate that the mattress can be dismantled for the purpose of:</p> <ul style="list-style-type: none"> • Undertaking repairs and replacement of worn out parts, or • Upgrading older or obsolete parts, or • Separating parts and materials for the potential recycle of them." <p>Moreover, the applicant must be free to choose the actions allowing to satisfy this criterion.</p> <p>2. The benefits achievable through requiring an exploded diagram are uncertain because this would probably not reach the actors involved in the treatment of the mattress after its use.</p> 	<p>1. The proposed criterion has been adapted from article 4 of the Commission Decision 2009/300/EC (EU Ecolabel criteria for televisions) and it should give enough freedom to producers.</p> <p>2. An exploded diagram is required in alignment with the Commission Decision 2009/300/EC and used only for verification purposes but reference to this part was removed to leave freedom to the producer.</p>
<p>Criterion 14. Information appearing on the EU</p>	-	-

Ecolabel		
Criterion 15. Additional information to consumers	-	-
Removal of criterion 5 on wooden materials from the final set of criteria revising the Commission Decision 2009/598/EC	-	-
Removal of criterion 13 on packaging from the final set of criteria revising the Commission Decision 2009/598/EC	The criterion on packaging should be maintained	The environmental impact of packaging is minor compared to the rest of the mattresses. Prescribing requirements for the use of recycled materials in packaging would not focus on one of the key environmental areas for this product group and could place a disproportionate burden on applicants.
Best industrial practices (withdrawn proposal)	<p>The environmental impact due to delivery and storage of a mattress can be relevant under certain conditions but the EU Ecolabel does not seem the most appropriate instrument to deal with it. For CBs it would be difficult to check such a criterion. CBs can check if the requirements have been applied but they cannot evaluate if the ambition level has been achieved in comparison with the “normal” level of the listed indicators. A more specific proposal would be needed. However, the development of such criterion would be difficult. Some open-questions for instance are</p> <ul style="list-style-type: none"> • whether this should cover the whole production or just the ecolabelled part. • how far in the production chain shall such a criterion go • how to manage situations in which producers do not decide when, where and how mattresses will be 	Based on the elements collected, the proposal has been withdrawn.

	<p>delivered.</p> <p>This criterion should be reconsidered because of the potentially high administrative burdens and the uncertain environmental benefits demonstrable.</p>	
<p>Diversion from landfill through a collection system (withdrawn proposals)</p>	<ol style="list-style-type: none"> 1. End of life of mattresses is a major environmental problem, however the EU Ecolabel is not the right instrument to handle this issue because it is not possible to change and have an influence on current national legislation and practices. Some countries have infrastructure in place to collect mattresses used but this is not the case for all countries. It should not be said to manufacturers how take back schemes should operate. 2. Manufacturers should operate a take back scheme and declare that a minimum percentage of mattresses are diverted from land fill. However, collecting and/or recycling of mattresses is not the goal of stores and manufacturing facilities. 3. There is some concern about the actual benefits of take-back systems when burdens of transports and practical logistic issues are taken into account. 4. Such a system should cover all mattresses and not just the Ecolabeled products. This would increase costs and administration workload for the license holders. 5. Guidance for the correct disposal of the mattress could be provided to consumers. 	<p>Based on the elements collected, the proposal has been withdrawn.</p>
<p>Other issues</p>	<p><i>Social issues</i></p> <p>Please explain why there is no criterion on observation of ILO Core Labour Standards as in the case of the product group textiles.</p>	<p>The presence of social criteria is not compulsory and a final output has not been agreed by the horizontal task force working on this issues. Some difficulties for the application of such requirement need to be solved and however, it is</p>

		recommendable to keep the set of criteria as much simple as possible due to the current limited penetration of the EU Ecolabel for this product group.
	<p>Nanomaterials</p> <p>The use of nanomaterials should be restricted until a proper toxicological assessment is on place.</p>	<p>According to the information gathered, the use of nanomaterials in bed mattresses is not widespread. In addition, should nanomaterials be used, they will be treated as other chemical substances and they will have to respect criterion 10.</p>

DRAFT