JRC Scientific and Technical Reports

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 3

May 2013

JRC EUROPEAN COMMISSION

ipts Institute for Prospective Technological Studies

Revision of the EU Ecolabel Criteria for Bed Mattresses

Technical Report

DATE: May 2013

PLACE: Sevilla

DG JRC (IPTS) 2013

Contents

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;

[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 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,
- 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.

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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)

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

[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

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.

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

- *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
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

Criterion number	Applicable to	Criteria	Compliance
			chromatography
1.8	**Nitrosamines**	Nitrosamines <0.0005 mg/m^3	Tested through chamber test

- *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

- *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 a galvanic metallic layer	Self-declaration

- *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)

- *Wooden Material*

Criterion number	Applicable to	Criteria	Compliance
5.1	**Sustainable forest management**	Sustainable forest management: a) All virgin solid wood shall originate from forests which are sustainably managed (Sustainable Forest Management and UNCED Forest Principles) b) 60% of virgin solid wood shall originate from forests with certified third party forest certification schemes c) Wood not certified must not originate from • disputed land rights or primary old growth forests • illegal harvesting • uncertified high conservation value forests.	The applicant shall indicate types, quantities and origins of the wood used Certified sources – control chain of custody is required as proof of source Non-certified sources – species, quantity and origin of timber must be provided.
5.2	**Formaldehyde emissions from untreated raw wood.**	Formaldehyde emissions from untreated raw wood-based materials. 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. 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 product.	Evidence that wood based materials comply with EN 312-1 Evidence that wood based materials comply with EN 13986

- *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 o f non-use. Verification by standard test may be required
6.2	**Auxiliary chemicals**	Alkylphenolethoxylates (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 complex dyes**	If metal complex dyes based on copper, chromium or nickel are used: – 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	Declaration of non-use or documentation and test reports using the following test methods: ISO 8288 for Cu, Ni; EN 1233 for Cr.

Criterion number	Applicable to	Criteria	Compliance
		(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.	
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 apply to white products, or products which are neither dyed nor printed.	Testing according to EN:ISO 105 X12

- *Glues*

Criterion number	Applicable to	Criteria	Compliance
7	**Glues**	Glues containing organic solvents are not permissible. 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.	Declaration that the glues used comply with this criterion, together with supporting documentation**.**

- *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

- *Flame retardants used in the entire mattress*

Criterion number	Applicable to	Criteria	Compliance
9	**Flame retardants**	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. **R40** (limited evidence of a carcinogenic 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)	Declaration that no additive flame retardants are present Declaration of which reactive flame retardants have been used, and their conformity with the criterion

Criterion number	Applicable to	Criteria	Compliance
		The corresponding list of Hazard Statements is also provided.	

- *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

- *Durability*

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

- *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 referring to the EU Ecolabel must appear	Declaration of compliance, along with sample of product packaging and information supplied

- *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: – 'Minimises indoor air pollution' – 'Hazardous substances restricted' – 'Durable and high quality'	Declaration of compliance, along with sample of packaging with label

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. Elements that could be influenced by the parallel revision of the EU Ecolabel criteria for textiles are highlighted in yellow;

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.

It was proposed to move bed mattresses to the furniture product group, in second step, in analogy with the approach followed by Nordic Swan.

[a] OJ L 169, 12.7.1993, p. 1.

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.

3.2 Criteria

Proposed criteria

1. Latex foam
2. PUR foam
3. Spring and wires
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. Exclude or limited substances and mixtures
11. Emission of Volatile Organic Compounds (VOCs) 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(a)

(a) Restricted substances

The concentrations 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
	Heptachlorepoxide	0.04	C
	Hexachlorbenzene	0.04	C
	Hexachlorcyclohexane	0.04	C
	Lindane	0.04	C
	Malathion	0.04	C
	Methoxichlor	0.04	C
	Mirex	0.04	C
	Parathion-ethyl	0.04	C
	Parathion-methyl	0.04	C
Others	Butadiene	1	D
* Only for foams composed of natural latex for at least 20% by weight			

Assessment and verification:

A. For clorophenols the applicant shall provide a report presenting the results of the following test procedure: 5 g of sample shall be milled and clorophenols shall be extracted in the form of phenol (PCP), sodium salt (SPP) or esters. The extracs 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 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 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(b)

(b) Emission of Volatile Organic Compounds (VOCs)

The room concentrations of the substances reported below, calculated through the test chamber method, shall not exceed the following values after a period of 30 hours.

Substance	Limit value (mg/m³)
1,1,1 – trichloroethane	0.2
4-Phenylcyclohexene	0.02
Carbon Disulphide	0.02
Formaldehyde*	0.005
Nitrosamines**	0.0005
Styrene	0.01
Tetrachloroethylene	0.15
Toluene	0.1
Trichlorethylene	0.05
Vinyl chloride	0.0001
Vinyl cyclohexene	0.002
Aromatic hydrocarbons (total)	0.3
VOCs (total)	0.5
* Alternatively, the concentration of formaldehyde shall not exceed 20 ppm as measured with EN ISO 14184-1.	
** n-nitrosodimethylamine (NDMA), n-nitrosodiethylamine (NDEA), n-nitrosomethylethylamine (NMEA), n-nitrosodi- i-propylamine (NDIPA), n-nitrosodi- n- propylamine (NDPA), n-nitrosodi- n-butylamine (NDBA), n-nitrosopyrrolidinone (NPYR), n-nitrosopiperidine (NPIP), n-nitrosomorpholine (NMOR)	

Assessment and verification: 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 EN ISO 16000-9. The wrapped sample should be stored at room temperature at least for 24 hours. After this period the sample will be unwrapped and immediately transferred into the test chamber. The sample will be placed on a sample holder, which allows air access from all sides. The climatic factors should be adjusted according to EN ISO 16000-9. For comparison of test results, the area specific ventilation rate (q=n/l) should be 1. The ventilation rate should be between 0,5 and 1. The air sampling will be started 24 hours after chamber loading and finished latest 30 hours.

The analysis of formaldehyde and other aldehydes shall comply with the standard EN ISO 16000-3. Alternatively, formhaldeyde emissions shall be determined following the test method EN ISO 14184-1. 5 g of sample shall be sunk into 100 g of water and heated to 40°C for 1 hour. Formaldehyde shall be extracted with acetylacetone and analysed colorimetrically.

The analysis of nitrosamines shall comply with the BGI 505-23 method (formerly: ZH 1/120.23) by using a thermal energy analyser (GC-TEA) coupled with a chemiluminescence detector. Alternative methods can also be used, such as gas chromatography in combination with high-resolution mass

spectrometry and positive chemical ionization (GC-HRMS CI-POS).. The following nitrosamines shall be tested: 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).

The analysis of the other VOCs shall comply with the standard EN ISO 16000-6.

Criterion 1(c)

(c) Dyes and pigments

Should dyes and or pigments be used, criterion 5(e) shall be respected.

Assessment and verification: The applicant shall provide 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 VOC emissions, specifically;

- Toluene < 0.1 mg/m^3
- Vinyl cyclohexene < 0.002 mg/m^3
- Styrene < 0.01 mg/m^3
- 4-Phenylcyclohexene < 0.02 mg/m^3
- 1,1,1 – trichloroethane < 0.2 mg/m^3
- Tetrachloroethylene < 0.15 mg/m^3
- Trichlorethylene < 0.05 mg/m^3
- Vinyl chloride < 0.1µg/m^3
- 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 VOCs. Values provided in the old EU Ecolabel criteria have been kept because more stringent than those reported in the euroLATEX ECO-Standard.

[a] http://www.eurolatex.com/EuroLatexECOStandard.pdf

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

- 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. 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.

6. A revised assessment and verification procedure for nitrosamines. According to Blue Angel, the name of the method ZH 1/120.23 is now BGI 505-23. A thermal energy analyser (GC-TEA) coupled with a chemiluminescence detector should be used in this analysis[b]. Alternative methods can also be used, such as gas chromatography in combination with high-resolution mass spectrometry and positive chemical ionization (GC-HRMS CI-POS).

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

- A limit on Antimony within Extractable heavy metals
- Requirements for dyes and pigments. These have been aligned with those proposed in the revision of EU Ecolabel criteria for textiles and a link to criterion 5(e) has been made. Nevertheless, industry reported that dyes and pigments are not an issue for foams.

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.

[a] http://www.blauer-engel.de/en/products_brands/vergabegrundlage.php?id=140
[b] http://www.analytics.currenta.com/analysis-of-nitrosamines.html

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(a)

(a) Restricted substances

The concentrations 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 meeting requirement of criterion 8	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 ppm	B
	Hg (Mercury)	0.02 ppm	B
	Ni (Nickel)	1 ppm	B
	Pb (Lead)	0.2 ppm	B
	Sb (Antimony)	0.5 ppm	B
	Se (Selenium)	0.5 ppm	B
~~Isocyanates~~	~~Total chlorine content~~	~~0.07 % w/w~~	~~A~~
Plasticizers	Di-iso-nonylphthalate (DINP, 28553-12-0)	-	-
	Di-n-octylphthalate (DNOP, 117-84-0)	-	-
	Di (2-ethylhexyl)-phthalate (DEHP, 117-81-7)	-	-
	Di-iso-decylphthalate (DIDP, 26761-40-0)	-	-

	Butylbenzylphthalate (BBP, 85-68-7)	-	-
	Dibutylphthalate (DIBP, 84-74-2)	-	-
	Sum	0.01 % w/w	C
	Phthalate plasticizers	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)	-	-
	Dioctyltin (DOT)	-	-
	Tricyclohexyltin (TcyT)	-	-
	Triphenyltin (TPhT)	-	-
	Sum	500 ppb	E
Ot hers	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	Not added	A

	(PeBDE, 32534-81-9)	intentionally	
	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)-phosphinoxide (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 specific substances restriced 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 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 must 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 GC/MS or HPLC/UV.

D. For TDA and MDA the applicant shall provide a a report presenting the results of the following test procedure. The sample must 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 HPLC-UV or HPLC-MS. If HPLC-UV shall be performed and interference shall be suspected, reanalysis with HPLC-MS should be performed.

E. For tinorganic substances the applicant shall provide a report presenting the results of the following test procedure. The sample must 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 200 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 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(b)

(b) Emission of Volatile Organic Compounds (VOCs)

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 (µg/m³)**
Formaldehyde (50-00-0)	5
Toulene (108-88-3)	100
Styrene (100-42-5)	50
Each detectable compound classified as categories C1A or C1B according to the Regulation (EC) No 1272/2008	5
Sum of all detectable compound classified as categories C1A or C1B according to the Regulation (EC) No 1272/2008	40
Aromatic hydrocarbons	500
VOCs (total)	500
~~* According to EU legislation:~~ ~~http://www.dguv.de/ifa/de/fac/kmr/kmr_neue_bezeichnungen.pdf~~	

Assessment and verification: The applicant shall provide a report presenting the results of the following test procedure. The sampling procedure outlined there will be followed. The foam sample is placed on the bottom of an emission test chamber and is conditioned for 3 days at 23°C, applying an air exchange rate n of 0.5 per hour and a chamber loading L of 0.4 m^2/m^3 (= total exposed surface of sample in relation to chamber dimensions without sealing edges and back) in accordance with EN ISO 16000-9 and EN ISO 16000-11. Sampling will 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 volatile organic compounds (VOC) are being trapped on Tenax TA sorbent tubes and subsequently analysed by means of thermo-desorption-GC-MS in accordance to EN ISO 16000-6. Results are semi-quantitatively expressed as toluene equivalents. All specified individual components are reported from a concentration limit ≥ 1 µg/m³. TVOC value is the sum of all components with a concentration ≥ 1µg/m³ and eluting within the retention time window from n-hexane (C6) to n-hexadecane (C16) inclusive. The sum of all CMR substances class 1a & 1b is the sum of all these substances with a concentration ≥ 1 µg/m³. 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 EN ISO 16000-3.

Note:

- Chamber volume has to be 0.5 or 1 m^3.
- *1 sample (25 cm x 20 cm x 15 cm) is used in a test chamber of 0.5 m^3 standing vertically on one 20 cm x 15 cm side.*
- *2 samples (25 cm x 20 cm x 15 cm) are used in a 1 m^3 test chamber standing vertically on one 20 cm x 15 cm side; in this case both samples are placed in the test chamber with 15 cm distance in between.*

Criterion 2(c)

(c) Dyes and pigments

Should dyes and or pigments be used, criterion 5(e) shall be respected.

Assessment and verification: *The applicant shall provide a declaration of compliance with this criterion, together with supporting documentation.*

Criterion 2(d)

(d) 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 that these blowing agents have not been used.

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

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

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-(aziridinyl)-phosphinoxide (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;

- Toluene <0.1 mg/m^3 (new)
- Styrene < 0.005 mg/m^3 (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/m^3 (new)
- Total VOCs < 0.5 mg/m^3 (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/m^3) 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:

- A limit on Antimony within Extractable heavy metals
- Requirements for dyes and pigments. These have been aligned with those proposed in the revision of EU Ecolabel criteria for textiles and a lint to criterion 5(e) has been made. Nevertheless, industry reported that dyes and pigments are not an issue for foams.

The proposal of introducing a concentration limit of 0.7% by weight for the total chlorine content in the isocyanates used to produce the PUR has been taken out because:

- free isocyanates which are not present in untreated foam samples can be artificially produced during their analysis;
- no bioavailable isocyanate is present in PUR foams.

Specific limits could be proposed when reliable test methods become available.

Requirements for dyes and pigments, moreover, have been aligned with those proposed in the revision of EU Ecolabel criteria for textiles and a link to criterion 5(e) has been made. Industry reported that this is not a problematic issue for PUR foam.

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.

Criterion 3. Spring and wires

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(a)

(a) 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.

Criterion 3(b)

(b) Galvanisation

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

Assessment and verification: The applicant shall provide a corresponding declaration.

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 that rubberised coconut fibres are not used, or provide 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)

Note: All the following requirements shall be respected for the mattress cover (i.e. ticking). Filling materials (i.e. padding) shall respect requirements 5(a), 5(d), 5(e). Where wool is used as filling material, requirements 5(a), 5(b), 5(d), 5(e) and 5(f) must be respected.

a) General requirements on hazardous substances (including flame retardants, biocides and plasticizers) (all)

Criteria 7 (flame retardants), 8 (biocides) 9 (plasticizers) and 10 (hazardous substances) shall be respected.

Assessment and verification: The applicant shall provide a declaration of compliance with this criterion, together with supporting documentation.

(b) Auxiliary chemicals (cover and wool)

The following substances shall not be used in any textile preparations or formulations and are subject to limit values for the presence of substances on the final product:

Substance (CAS number / Acronym)	**Limit value (mg/kg)**
Alkylphenols: • 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)	50 (sum)
Alkylphenolethoxylates (APEOs) and their derivatives • Polyoxyethylated octyl phenol (CAS: 9002-93-1) • Polyoxyethylated nonyl phenol (CAS: 9016-45-9) • Polyoxyethylated p-nonyl phenol (CAS: 26027-38-3)	
~~linear alkylbenzene sulfonates (LAS)~~	
bis(hydrogenated tallow alkyl) dimethyl ammonium chloride (DTDMAC)	~~100~~

distearyl dimethyl ammonium chloride (DSDMAC)	~~100~~
di(hardened tallow) dimethyl ammonium chloride (DHTDMAC)	~~100~~
ethylene diamine tetra acetate (EDTA)	~~100~~
diethylene triamine penta acetate (DTPA)	~~100~~
4-(1,1,3,3-tetramethylbutyl)phenol	~~100~~
1-Methyl-2-pyrrolidone	~~100~~
Nitrilotriacetic acid (NTA)	~~100~~

Assessment and verification: The applicant shall provide a declaration of non-use supported by safety data sheets for all production stages. Final product testing shall be also performed for alkyphenols and APEOs through solvent extraction followed by LCMS and results of the rests shall be presented.

(c) Surfactants, fabric softeners and complexing agents (cover)

At least 95% by weight of fabric softeners, complexing agents and surfactants shall be:

- readily biodegradable under aerobic conditions or

- inherently biodegradable and eliminable in wastewater treatment plants.

All non-ionic and cationic surfactants must also be readily biodegradable under anaerobic conditions

Assessment and verification: The applicant shall provide appropriate documentation through safety data sheets,and/or declarations from suppliers supported by results of appropriate OECD or ISO tests:

- All surfactants: ISO 7827, ISO 9408, ISO 9439, ISO 9887, ISO 9888, ISO 10707, ISO 10708, ISO 14593, OECD 301 A, OECD 301 B, OECD 301 C , OECD 301 D, OECD 301 E, OECD 301 F, OECD 302 A, OECD 302 B, OECD 302 C,
- Non-ionic and cationic surfactants EN ISO 11734, ECETOC No 28 (June 1988), OECD 311

Where a substance is listed in the Detergents Ingredients Database then this shall provide the reference point for biodegradability:

http://ec.europa.eu/environment/ecolabel/documents/did_list/didlist_part_a_en.pdf

(d) Bleaching agents (all)

Chlorine agents shall not be used for the bleaching of any yarns, fabrics 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 fibres (OX) shall not exceed 150 ppm or in the wastewater (AOX) shall not exceed 100 kg/ADt pulp.

Assessment and verification: The applicant shall provide a declaration of non-use of chlorinated bleaching agents. 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 9562:2004

(e) Dyes and pigments (all)

The following sub-criteria apply to the use of dyes. Additional requirements are also contained within derogation conditions for dyes under sub-criteria 10 on hazardous substances. These conditions relate to the handling of dyes in the dye house and colour removal from wastewater from dye houses.

Group of substances	Criterion	Assessment and verification
i. Chrome mordant dyes	Chrome mordant dyes shall not be used	A
ii. Metal complex dyes	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, modal, lyocell, cupro).	B
iii. Azo dyes	Azo dyes shall not be used that may cleave to one of the following carcinogenic aromatic amines. **Aryl amine** / **CAS number** 4-aminodiphenyl / 92-67-1 Benzidine / 92-87-5 4-chloro-o-toluidine / 95-69-2	C

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 dyes is provided to assist with self-declaration:

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		
	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			
iv. Dyes that are carcinogenic, mutagenic or toxic to reproduction	The following dyes shall not be used: **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 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				D
v. Potentially sensitising dyes	The following dyes shall not be used: **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				D

	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	

vii. Halogenated carriers	Halogenated dyeing acceletants (carriers) shall not be used to dye polyester fibres and fabrics containing polyester. Examples of carriers include: 1,2-dichlorobenzene, 1,2,4-trichlorobenzene, chlorophenoxyethanol.	E
vi. Extractable heavy metals (impurities)	The following limit values shall apply:	F

Metal	Limit values (mg/kg)	
	Mattress covers for babies and children under 3 years old	All products
Antimony (Sb)	30	30
Arsenic (As)	0.2	1
Cadmium (Cd)	0.1	0.1
Chromium (Cr): - Textiles dyed with metal complex dyes - All other textiles	 1 0.5	 2 1
Cobalt (Co):		

- Textiles dyed with metal complex dyes	1	4
- All other textiles	1	1
Copper (Cu)	25	50
Lead (Pb)	0.2	1
Nickel (Ni):		
- Textiles dyed with metal complex dyes	1	1
- All other textiles	0.5	1
Mercury (Hg)	0.02	0.02

Assessment and verification:

A. The applicant shall provide a declaration of non-use of chrome mordant dyes. Should this declaration be subject to verification, the final product will be tested according to EN ISO 17075:2007 and a report will be provided that shows the test results. Limit value is 3 ppm.

B. The applicant shall provide a declaration of non use of metal complex dyes dyes.

C. Content of azo dyes in the final product shall be tested according to EN 14362-1 and 14362-1:3 and a report will be provided that shows the test results. Limit value is 30 mg/kg for each amine. (Note: false positives may be possible with respect to the presence of 4-aminoazobenzene, and confirmation is therefore recommended)

D. The applicant shall provide a declaration of non-use of CMR and potentially sensitising dyes. Should this declaration be subject to verification, the final product will be tested according to DIN 54231 and a report will be provided that shows the test results. Limit value is 50 mg/kg for each dye.

E. The applicant shall provide a declaration of non-use of halogenated carriers. Should this declaration be subject to verification, the final product will be tested according to DIN 54232 or solvent extraction and GCMS. Limit value is 1.0 mg/kg.

F. For extractable heavy metals (impurities) the applicant shall provide final product testing as verification for the limit values. The tests used should be: 1) Extraction: DIN EN ISO 105-E04-2013 (Acid sweat solution) and 2) Detection: ICP-MS, ICP-OES, GC-ICP-MS

~~(f) Wastewater discharges from dyeing processes~~

~~Emissions to water after treatment shall not exceed: Cr 50 mg/kg; Cu 75 mg/kg; Ni 75 mg/kg~~

~~Assessment and verification: The applicant shall provide a declaration of non-use or documentation and test reports using the following test methods: EN ISO 8288 for Cu and Ni, BS EN 1233 for Cr.~~

(f) Wastewater discharges from wet processing (cover and wool)

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

Special treatment systems shall be required in order to remove hardly (inherently) biodegradable substances for which biodegradability is required (see Criterion 6(c)) or non-biodegradable substances which are subject to derogation conditons in Criteria 10. In this case removal should be at least 90%.

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 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).

Where used in dyeing processes salt shall either be recycled or diluted so as to be less than xx mg/l in final discharges to the environment.

Assessment and verification:

The applicant shall provide detailed documentation and test reports, using ISO 6060 and ISO 7887:2011 as relevant, 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.

(g) Durability (Mechanical resistance) (cover)

Mattress cover must 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	EN ISO 13937-2 (woven fabrics) EN 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	EN 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	EN ISO 13934-1

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

(h) Dimensional change (removable cover)

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

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

This criterion does not apply to:

a) fibres or yarn,

b) products clearly labelled "dry clean only" or equivalent (insofar as it is normal practice for suchproducts to be so labelled),

c) furniture fabrics that are not removable and washable.

Assessment and verification:

The applicant shall provide test reports using the standards appropriate for the product. For domestic washing EN ISO 6330:2012 in combination with EN ISO 5077:2008 shall be used as follows: 3 washes at temperatures as indicated on the product, with tumble drying after each washing cycle. For commercial washing in industrial laundries ISO 15797 in combination with EN ISO 5077:2008 shall be used at a minimum of 75 °C or as indicated in the standard for the fibre and bleaching combination. Drying shall be as indicated on the product.

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 a prescription would pose additional burdens to manufacturers and it would prevent them from applying for the

EU Ecolabel. This would also not easily reflect the performance of the best 10-20% of products on the market.

The proposed revision of requirements on textiles was made on the following basis:

- The need of simplifying criteria for textiles (an apparent bottleneck according some industry stakeholder);
- The need of making a clearer differentiation between padding and ticking (i.e. filling and cover materials, respectively);
- The need to specify criteria according to their relevance to the production processes for padding and ticking, and with reference also to relevant fitness for use standard;
- The need to align with the ongoing revision of the EU Ecolabel criteria for textiles and with other labels such as the Nordic Swan and Oeko-tex 100, 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]. The criteria 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 for the revised textiles criteria, with the proposed wording provided below. Elements highlighted in yellow could be influenced by the parallel revision of EU Ecolabel criteria for textiles. It should also be noted that 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	Scope
5(a) Hazardous substances	An introductory criterion 5(a) on "general requirement on hazardous substances would refer to specific prescriptions on hazardous substances (including flame retardants, biocides and plasticizers)".	Cover; Filling
5(b) Auxiliary chemicals	This would form a criterion 5(b) and should be updated in accordance with the current revision of the EU Ecolabel criteria for textiles.	Cover; Wool for filling
5(c) Detergent, fabric softeners and complexing agents	This would form a criterion 5(c) and should be updated in accordance with the current revision of the EU Ecolabel criteria for textiles.	Cover
5(d) Bleaching agents	This would form a criterion 5(d) and should be updated in accordance with the current revision of the EU Ecolabel criteria for textiles.	Cover; Filling[a]
5(e) Dyes and and pigments	Criteria on dyeing should be aligned with the current revision of the EU Ecolabel criteria for textiles. Criteria could be merged into a single prescription 5(e) on "dyeing and pigments".	Cover; Filling[a]

[a] http://www.svanen.se/en/Svanenmarka/Kriterier/?p=2

Requirement	Comments/Recommendations	Scope
	In accordance with the Blue Angel criteria for mattresses, also the restriction of metal complex dyes based on cadmium, mercury, lead would be added. The list of restricted amines and sensitising dyers should be updated in order to harmonise with Oekotex 100 and MAK Category 2 (Germany). This would lead to the inclusion of: - 4,4'-methylene-bis-(2-chloroaniline) (101-14-4), - 4-aminoazobenzene (60-09-03) - Disperse Blue 3 and Disperse Yellow 3	
5(f) Wastewater discharges from wet processing	In accordance with the Nordic Swan criteria for furniture, a new criterion 5(f) would be added which limits COD emissions from wet-processing. This should be aligned with the current revision of the EU Ecolabel criteria for textiles.	Cover; Wool for filling
5(g) Durability	Resistance to abrasion is prescribed within the current Nordic Swan criteria for furniture, while a new criterion on the durability of functional treatments (such as flame retardants) could be proposed for introduction in line with the EU Ecolabel criteria for textiles. However, at this stage, it could be more appropriate to include only requirements on mechanical resistance as outlined in the existing technical standard BS EN 14976 "Textiles – Mattress ticking – Specifications and test methods".	Cover
5(h) Dimensional change	A new criterion 5(i) on dimensional changes during washing and drying could be added, in accordance with the Nordic Swan criteria for furniture and the EU Ecolabel criteria for textiles. The proposed criterion satisfies the existing technical standard EN 14976 "Textiles – Mattress ticking – Specifications and test methods".	Cover, only if removable
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
a. The relevance of this area for the filling materials is uncertain. However, unless demonstrated that these substances are not used in filling materials, it is recommended to have such restrictions both for cover and filling.		

The set of revised criteria drafted for textiles:

- Take into account the current revision of the EU Ecolabel criteria for textiles,
- Make a differentiation between padding and ticking,
- Strive to match with the apparent need of simplification requested by industry stakeholders.

For inherent flame retardant fabrics, applicants shall provide test reports demonstrating a high level of comparable performance with alternatives which may be applied as finishes.

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 existing EU Ecolabel criteria for textiles other issues of potential relevance for the future 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

7. Durability of flame retardancy

However, these issues are not proposed here because considered to create undesired complications for a product group which must attract the interest of producers.

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.

[a] http://bedtimesmagazine.com/recycling-mattress-components/

[b] http://www.indratech-us.com/mattresses.html

[c] http://www.socalstudentmattress.com/pages/sleep-school-10

[d] http://steplight.com.au/2012/08/15/mattress-recycling-and-low-cost-beds-mattresses/

Criterion 6. Glues and adhesives

Heading and text

Criterion 6. Glues and adhesives

Glues containing organic solvents shall not be used. Glues and adhesive used for assembling shall also respect Criterion 10 on hazardous substances.

Assessment and verification: The applicant shall provide a declaration that glues and adhesives used comply with this criterion, together with supporting documentation.

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 some risk phrases / hazard statements. 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, reference to criterion 10 is made and hazard statements are derogated there for glues in order to prohibit the use of glues 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.

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

Criterion 10 on hazardous substances shall be respected. In addition, the following flame retardants shall not be added intentionally to the product or to 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)-phosphinoxide	545-55-1	TEPA

Assessment and verification: The applicant shall provide a declaration supported by declarations from manufacturers of substances, as appropriate, confirming that the listed substances have not been included in the product. A list of substances added to enhance the flame retarding properties of the mattress is to be provided with concentrations and related H statements / R phrases.

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

(a) Production

Criterion 10 on hazardous substances shall be respected. In addition, the following biocides shall not be added intentionally to the product or to any homogeneous part of it:

1. Biocidal products that do not contain biocidal active substances authorised under Biocides Directive 98/8/EC and Biocides Regulation (EC) No 528/2012. Applicants should consult the following listing of authorised biocides: http://ec.europa.eu/environment/biocides/annexi_and_ia.htm

2. Biocides included in the following list:

Name	CAS number	Name	CAS number
2,4,5-T	93-76-5	Fenvalerate	51630-58-1
2,4-D	94-75-7	Heptachlor	76-44-8
Azinophosmethyl	86-50-0	Heptachloroepoxide	1024-57-3
Azinophosethyl	2642-71-9	Hexachlorobenzene	118-74-1
Aldrine	309-00-2	Hexachlorcyclohexane, α-	319-84-6
Bromophos-ethyl	4824-78-6	Hexachlorcyclohexane, β-	319-85-7
Captafol	2425-06-1	Hexachlorcyclohexane, δ-	319-86-8
Carbaryl	63-25-2	Isodrine 6	465-73-6
Chlordane	57-74-9	Kelevane 1	4234-79-1
Chlordimeform	6164-98-3	Kepone	143-50-0
Chlorfenvinphos	470-90-6	Lindane	58-89-9
Coumaphos	56-72-4	Malathion	121-75-5
Cyfluthrin	68359-37-5	MCPA	94-74-6
Cyhalothrin	9 1465-08-6	MCPB	94-81-5
Cypermethrin	52315-07-8	Mecoprop	93-65-2
DEF	78-48-8	Metamidophos	10265-92-6
Deltamethrin	52918-63-5	Methoxychlor	72-43-5
DDD	53-19-0, 72-54-8	Mirex	2385-85-5

DDE	3424-82-6, 72-55-9,	Monocrotophos	6923-22-4
DDT	50-29-3, 789-02-6	Parathion	56-38-2
Diazinon	333-41-5	Parathion-methyl	298-00-0
Dichlorprop	120-36-2	Phosdrin/Mevinphos	7786-34-7
Dicrotophos	141-66-2	Perthane	72-56-0
Dieldrine	60-57-1	Propethamphos	31218-83-4
Dimethoate	60-51-5	Profenophos	41198-08-7
Dinoseb and salts	88-85-7	Quinalphos	13593-03-8
Endosulfan, α-	959-98-8	Strobane	8001-50-1
Endosulfan, β-	33213-65-9	Telodrine	297-78-9
Endrine	72-20-8	Toxaphene	8001-35-2
Esfenvalerate	66230-04-4	Trifluralin	1582-09-8

Assessment and verification: The applicant shall provide a declaration supported by declarations from manufacturers of substances, as appropriate, confirming that the listed substances have not been included in the product. A list of biocidal products added is to be provided with concentrations and related H statements / R phrases.

(b) Transportation

3. Chlorophenols (their salts and esters), polychlorinated biphenyl (PCB), organo-tin compounds (including including TBT, TPhT, DBT and DOT) and diemthyl fumarate (DMFu) shall not be used during the transportation or storage of mattresses and semi-manufactured mattresses.

Assessment and verification: The applicant shall provide a declaration supported by declarations from manufacturers of substances, as appropriate, confirming that the listed substances have not been used during the transportation or storage of the product. A list of biocidal products added is to be provided with concentrations and related H statements / R phrases.

Description of the criterion and rationale

Criterion 10 will restrict substances based on their hazard properties. However, biocides are substances for which there is wide concern over, and explicit exclusion of substances would be welcome. This could be pursued by merging criteria 6.1 and 10 of the Commission Decision 2009/598/EC into one single prescription. This would be similar to the approach followed in the current revision of textiles. 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. 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 list of banned

substances could also include those mentioned within the Oeko-Tex 100 scheme.[a] The existing criteria for biocides have been merged and updated as described above (elements highlighted in yellow could be influenced by the parallel revision of EU Ecolabel criteria for textiles).

The passage from a "white list" approach to a "black list approach" (based on the example of Oekotex 100) was originally considered for the revision. However, it was considered more appropriate to maintain a reference also to the existing prescriptions on biocides, extended to all the components of the mattress, and to include an additional ban for DMFu, which would allow the criteria to be better aligned with the current revision of the EU Ecolabel for textiles.

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

Criterion 10 on hazardous substances shall be respected. In addition, the following plasticizers shall not be added intentionally to the product or to any homogeneous part of it:

Name	CAS number	Acronym
Di-iso-nonylphtalate (*)	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
Dibutuylphthalate	84-74-2	DBP
Di-iso-butylphthalate	84-69-5	DIBP
Di-C6-8-branched alkyphthalates	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 baby mattresses

The sum of the prohibited plasticizers shall be lower than 0.1% by weight.

Assessment and verification: The applicant shall provide a declaration supported by declarations from manufacturers of substances, as appropriate, confirming that the listed substances have not been included in the product. A list of plasticizers added is to be provided with concentrations and related H statements / R phrases. Additional verification tests may be required in accordance with EN ISO 14389.

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.

[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

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 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_PUBLIC/content1.asp?area=hauptmenue&site=grenzwerte&cls=02#10

Criterion 10. Hazardous substances and mixtures

Heading and text:

Criterion 10. Excluded or limited substances and mixtures

(a) Hazardous substances and mixtures

According to Article 6(6) of Regulation (EC) No 66/2010 the EU Ecolabel may not be awarded to the product if the product or any article of it as defined in Article 3(3) of Regulation (EC) No 1907/2006 or homogenous part of it contains substances 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 of the European Parliament and of the Council or Council Directive 67/548/EC, nor shall it contain substances referred to in Article 57 of Regulation (EC) No 1907/2006. In case the threshold for classification of a substance or mixture with a hazard class differs from the one of a risk phrase then the former prevails. 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. Substances or mixtures which change their properties through processing and thus become no longer bioavailable, or undergo chemical modification in a way that removes the previously identified hazards are exempted from this requirement.

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
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
H334: May cause allergy or asthma symptoms or breathing difficulties if inhaled	R42

H317: May cause allergic skin reaction	R43

Notes

1. According 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

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

Concentration limits for substances or mixtures which may be or have been assigned the hazard statements or risk phrases listed above, meeting the criteria for classification in the respective hazard classes or categories, and for substances meeting the criteria set out in points (a), (b) or (c) of Article 57 of Regulation (EC) No 1907/2006, shall not exceed the generic or specific concentration limits determined in accordance with Article 10 of Regulation (EC) No 1272/2008. Where specific concentration limits are determined they shall prevail over the generic ones.

Concentration limits for substances meeting the criteria set out in points (d), (e) or (f) of Article 57 of Regulation (EC) No 1907/2006 shall not exceed 0.1% by weight.

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

Substances / Group of substances (hazard statements of concern)	**Derogation conditions**
Antimony Trioxide - ATO (H351)	The substance must be used as catalyst in polyester or as flame retardant synergist in textiles
Nickel (H317, H351, H372)	The substance must be contained in stainless steel
Functional substances used in textiles: Dyes and pigments (H301, H311, H331, H317, H334, H411, H412, H413,)	H301, H311, H331, H317, H334: Dust free dye formulations and/or automatic dosing and dispensing of dyes shall be used to minimise worker exposure when handling dyes in powder form; H411, H412, H413 Reactive, direct, vat, sulphur dyes: Dye houses using these dyes must meet one of the following requirements: - Use of high affinity dyes - Use of colour matching instrumentation - Use of standard Operating Procedures for dyeing

	- Wastewater treatment to achieve colour removal (see criteria 5(f)).
~~Cross linking agents (where used for easy care finishes and printing) (H351, H317)~~	~~All derogated hazards: The function must be verified to be durable according to the test method and grading in criteria 24~~ ~~H351: Emissions to air in the workplace where the easy care finish is applied to the textile product must not be higher than an eight hour occupational exposure limit value of 0.2 ppm.~~
Flame retardants (H317, H373, H411, H412, H413)	All derogated hazards: The product must be designed in order to meet ISO, EN, Member State or public sector procurement standards and regulations. ~~H351 antimony trioxide: Emissions to air in the workplace where the flame retardant is applied to the textile product shall meet an eight hour occupational exposure limit value of 0.5 mg/m³.~~ ~~All derogated hazards: The function must be verified to be durable according to the test method and grading in criteria 5(f)~~
~~Optical brighteners (H411, H412, H413)~~	~~All derogated hazards: Optical brighteners may only be applied in the form of additives during the production of polyamide, polyester and acrylic fibres.~~
~~Fabric softeners (H317, H334)~~	~~No specific conditions apply~~
~~Water, dirt and stain repellents (H411, 412, 413)~~	~~All derogated hazards: The function must be verified to be durable according to the test method and grading in criteria 5(f)~~
Auxilliaries (comprising: Carriers, Levelling agents, Dispersing agents, Surfactants, Thickeners, Binders) (H301, H331, EUH070, H371, H373, H317, H334, H411, H412, H413)	All derogated hazards: Recipes shall be formulated using automatic dosing systems and processes shall follow Standard Operating Procedures. H411, H412, H413: Substances discharged to wastewater at the factory that are non-biodegradable shall be treated according to the additional requirements in Criteria 5(f).
Glues and adhesives	The substances must not be classified as H351, H350, H340, H350i, H360F, H360D, H361f, H361d H360FD, H361fd, H360Fd, H360Df, H331, H330, H311, H301, H310, H300, H370, H372

Assessment and verification:

For the product or any article of it or any homogenous part of it, the applicant shall provide a declaration of compliance with requirement 10(a), together with related documentation, such as declarations of compliance signed by their suppliers, on the non-classification of the substances or

materials with any of the hazard classes associated to the hazard statements 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. This declaration shall be supported by summarized information on the relevant characteristics associated to the hazard statements referred to in the list above, to the level of detail specified in Sections 10, 11 and 12 of Annex II to Regulation (EC) No 1907/2006.

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.

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

For substances listed in Annexes IV and V to Regulation (EC) No 1907/2006, which are exempted from registration obligations under point (a) and (b) of Article 2(7) of that Regulation, a declaration by the applicant or its suppliers shall suffice to comply with requirement 10(a).

(b) 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 a complex article in concentrations > 0.1% by weight. Specific concentration limits determined in accordance with Article 10 of Regulation (EC) No1272/2008 shall apply in cases where the concentration is lower than 0.1% by weight.

Assessment and verification:

Reference to the list of substances identified as substances of very high concern shall be made on the date of application. The applicant shall provide a declaration of compliance with requirement 10(b), 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 for substances or mixtures. Concentration limits shall be specified in the safety data sheets in 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

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

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[a] [b] was taken as reference and adapted here. 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 text of the criterion and the assessment and verification section were mainly inspired by the Commission Decision 2011/330/EU, establishing the EU Ecolabel criteria for notebook computers, and by the Commission Decision 2012/721/EU establishing the EU Ecolabel criteria for Industrial and Institutional Laundry Detergents, respectively. Nevertheless, some variations to this reference basis have been applied here in order to take into account for comments received from stakeholders, recent orientations provided by the horizontal task force working on this issue and specific needs for this product group.

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).
- Reference should be made, 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[c] classifies this substance as H351 - suspected of causing cancer. Hazards seems primarily associated to inhalation exposure during manufacture. Referencing to recently peer-reviewed scientific research[d] 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).

[a] Commission Decision 2011/330/EU establishing the ecological criteria for the award of the EU Ecolabel for notebook computers

[b] Commission Decision (Draft) establishing the ecological criteria for the award of the EU Ecolabel for Industrial and Institutional Laundry Detergents, available at http://ec.europa.eu/environment/ecolabel/documents/Last-draft-Criteria-Laundry-detergents-PRO.pdf

[c] http://apps.echa.europa.eu/registered/data/dossiers/DISS-9eb02d6b-39b7-666e-e044-00144f67d031/AGGR-79ef4347-6b30-427f-b8d6-e061caa8fad5_DISS-9eb02d6b-39b7-666e-e044-00144f67d031.html#L-a32752a0-6813-4bb3-9263-14d976a82166

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

- 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).

During the project, the need of a derogation was even explored for acid boric and natural latex. However, derogations 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.

Criterion 11. Emission of Volatile Organic Compounds (VOCs) 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/produkte-e/bauprodukte/archive/agbb_evaluation_scheme_2012.pdf).

Substance	**Final value 7th day**	**Final value 28th day**
Formaldehyde	**< 60 µg/m³ (< 0.05 ppm)**	**< 60 µg/m³ (< 0.05 ppm)**
Other aldehydes	**< 60 µg/m³ (< 0.05 ppm)**	**< 60 µg/m³ (< 0,05 ppm)**
VOCs with retention range within C6-C16 (total)	**< 500 µg/m³**	**< 200 µg/m³**
VOCs with retention range above C16 (total)	**< 100 µg/m³**	**< 40 µg/m³**
Each detectable compound classified as categories C1A or C1B according to the Regulation (EC) No 1272/2008	**< 1 µg/m³**	**< 1 µg/m³**

Assessment and verification: The applicant shall perform a test chamber analysis based on the standard EN ISO 16000-9.

The analysis of formaldehyde and other aldehydes shall comply with the standard ISO 16000-3; the analysis of the other VOCs shall comply with the standard ISO 16000-6.

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:

1. 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 will 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 will be combined using this formula $C_M = \Sigma\, \omega_i \cdot C_i$;

where:

- "C_M" ($\mu g \cdot m^{-3}$) is the overall contribution from the entire mattress;
- "C_i" ($\mu g \cdot m^{-3} \cdot kg_i^{-1}$) 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 are 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. 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].

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

Criterion 12. Technical performance

Criterion 12(a):

Criterion 12. Technical performance

(a) Quality

The mattress is 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(b)

(b) Durability

The lifetime of a household mattress is expected to be 10 years; this can vary depending on application. 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 BS 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(c)

(c) 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 must 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.

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 purpose of:

- undertaking repairs and replacements of worn-out parts,

- upgrading older or obsolete parts, and

- 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

[a] http://www.fsc-uk.org/?p=3569

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.

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	• Proposal on eco-design of mattresses withdrawn after the 1st AHWG meeting
	Sourcing of materials		
	b. Use of renewable-based materials	New	• Proposal on promotion of renewable materials withdrawn after the 1st AHWG meeting
	c. Use of organic materials	New	• Proposal on promotion of organic materials withdrawn after the 1st AHWG meeting
	d. Use of recycled materials	New	• 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	• 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	• Proposal of screening materials based on energy or other LCA benchmarks withdrawn after the 1st AHWG meeting
	Production of materials		
	g. Latex and PUR foams	New	• Proposal of setting water emission limits for latex production withdrawn after the 2nd AHWG meeting • Proposal of avoiding the use of TDI in

Criteria area	Issue	Revision/ New Element	Comment
			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	• 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	• New proposal presented after the 2nd AHWG meeting (See Section 3.2 in the Technical Report)
2. Manufacture and storage	a. Energy performance	New	• Proposal on requiring energy data for future benchmarking withdrawn after the 1st AHWG meeting
	b. Best industrial practices	New	• 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	• Proposal on requiring the implementation of EMS/CSR schems withdrawn after the 1st AHWG meeting
3. Substances	a. Use of materials and substances of concern		
	- Horizontal approach	New	• New proposal presented after the 2nd AHWG meeting (See Section 3.2 in the Technical Report)
	- Materials	Revision	• New proposal presented for Latex and for PUR foams after the 2nd AHWG meeting (See Section 3.2 in the Technical Report)
	- Flame retardants	Revision	• Proposal unchanged (See Section 3.2 in the Technical Report)
	- Biocides	Revision	• New proposal presented after the 2nd AHWG meeting (See Section 3.2 in the Technical Report)
	- Plasticizers	New	• New proposal presented after the 2nd AHWG meeting (See Section 3.2 in the Technical Report)
4. Fitness for use	a. Quality of the product		
	- Extended warranty	New	• New proposal presented after the

Criteria area	Issue	Revision/ New Element	Comment
			2nd AHWG meeting (See Section 3.2 in the Technical Report)
	- Additional requirements on the technical performance	New	• New proposal presented after the 2nd AHWG meeting (See Section 3.2 in the Technical Report)
5. Packaging	a. Significance of the criterion on packaging	Revision	• Proposal of removing prescription on packaging kept (See Section 3.3 in the Technical Report)
6. End of life	a. Diversion from landfill through a collection system	New	• Proposal of diverting from landfill through a collection system withdrawn after the 2nd AHWG meeting
	b. Design for disassembling and recovery of materials	New	• New proposal on design for disassembling presented (See section 3.3 in the Technical Report)
7. Environmental performance	a. Energy and Life cycle performance of the product	New	• Proposal on requiring a LCA study for future benchmarking withdrawn after the 1st AHWG meeting
8. Others	a. Consistency of the criteria	New	• Some change applied (See Section 3.3 in the Technical Report)
	b. Information of consumers and on the box 2 of the label	Revision	• Proposal unchanged for box 2; nre proposal presented for information of consumers (See Section 3.2 in the Technical Report)
	c. VOCs emissions from the entire mattress	Revision	• New proposal presented for testing the criterion (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 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

B. Manufacture

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

C. Use

- Additional requirement on thermo-hygrometric wellness

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

Thematic area	Summary of comments	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
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	*SFC latex* 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.	The proposal has been withdrawn from the set of criteria and it will be one of the issues included in the Commission statement to consider in the next criteria revision.
	Water emission limits 1. Reference to emission factors would be appreciate (i.e. pollutants emitted with respect to the total production). 2(a). Differentiation between municipal and industrial wastewater treatment plant should be made. 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	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. 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. 3. Criteria should refer to latex foam production and be acceptable in all Europe without generating excessive

	verification should take place every 12 months. 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: • 150-3000 mg/L for COD emissions; • 0-15 mg/L for nitrogen emissions; • 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.	economic burdens, especially considering the small uptake of the Ecolabel for this product group. 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.
	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.	1. The criterion was revised accordingly. 2. According to industry, formaldehyde values are always lower than 0.0050 mg/m^3 and this is the limit value proposed in the revised set of criteria.

	• The limit for butadiene is 1 ppm 2. Emission of Formaldehyde should be 0.0050 mg/m^3 as in the previous set of EU Ecolabel criteria (0.010 mg/m^3 is set in the Euro Latex ECO Standard).	
Criterion 2. PUR foam	*Palm oil RSPO and soy bean RTRS* 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.	The proposal has been withdrawn from the set of criteria and it will be one of the issues included in the Commission statement to consider in the next criteria revision.
	Precursors 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. 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. 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.	
	Emission of VOCs 1. VOC measurements should be effected after 72 hours, as	1. The reference to 30 hours erroneously comes from EuroLatex ECO standard. This has been changed to 72 hours

	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.	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.
Criterion 3. Spring and wires	*Selection of materials* 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	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

	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. 2. Market of plastic springs is considered marginal at the moment and this issue should be postponed to the next revision.	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. 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. 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.
	Sourcing in accordance with BAT 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.	Due to the difficulties highlighted, this issue could be discussed in the next revision of criteria.
Criterion 4. Coconut fibres	Some clarification on the meaning of rubberised coconut fibres is necessary, especially to understand: 1. If these can include only latex or even PUR; 2. Which requirements would be relevant.	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 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)	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. 2. There are no criteria for cotton sourcing as in the case of the product group textiles. 3. Structure of the criterion, wording and definition of ticking material, removable covers and padding materials need to be improved.	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. 3. The structure and text of the criteria has been modified accordingly with special attention on clarifying any sources of uncertainty
Criterion 6. Glues and adhesives	-	-
Criterion 7. Flame retardants	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	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. 2. The list of risk phrases was developed and agreed within the Commission to put in practice art. 6(6) of the EU Regolation and it is applied to all the product groups. A task

	systems of choice, notably chlorinated phosphate esters. 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. 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.	force is working on the revision the horizontal approach on hazardous substances and to make it practical. 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.
Criterion 8. Biocides	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.	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.
Criterion 9. Plasticizers	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	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

	and consumer awareness are on these substances and their exclusion from the EU Ecolabel would be a strong message to the market. 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 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.	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: • 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. Phthalates will have also respect criterion 10 on the restriction of substances based on their hazardousness properties.

Criterion 10. Restrictions on hazardous substances and mixtures in the final product	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. 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 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.	1. The concentration limit has been increased to 0.10% as in Reach. 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 signed. The information will therefore not enter the public domain. Wording will be improved to clarify this point.
	Derogation of ATO 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. • 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	Based on the elements collected, the derogation of ATO has been accepted.

	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. 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.	
	Derogation of natural latex 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.	Based on the elements collected, the derogation of natural latex have been removed.
Criterion 11. Emission of Volatile Organic Compounds (VOCs) from the mattress	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.	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. Apart from this, it has been found that testing procedures need to be updated:

		• 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. 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). • 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. 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.
Criterion 12. Technical performance	(a) Quality 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. The main standards for bed mattresses are: BS EN 597-1:1995 (Furniture. Assessment of the ignitability of mattresses and upholstered bed bases. Ignition source: smouldering cigarette) BS EN 597-2:1995 (Furniture. Assessment of the ignitability of mattresses and upholstered bed bases. Ignition source: match flame equivalent) BS EN 14976:2005 (Textiles. Mattress tickings. Specification and test methods) BS EN 1725:1998 (Domestic furniture. Beds and mattresses. Safety requirements and test methods) BS EN 1957:2012 (Furniture. Beds and mattresses. Test methods for the determination of functional characteristics	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.

	and assessment criteria). EN ISO 15496:2004 (Textiles -- Measurement of water vapour permeability of textiles for the purpose of quality control) 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)).	
	(c) warranty While it can be accepted that environmental impacts can be reduced by extending the lifetime of a mattress, there are also health issue 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 has requested a longer warranty period, up to 10-15 years. 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.	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 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. Guidance on the correct use of the mattress is required with criterion 15.
Criterion 13. Design for disassembly and recovery of materials	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	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.

	mattresses (e.g. spring mattresses) this would be more difficult. The criterion could be re-formulated as it follows: "The manufacturer shall demonstrate that the mattress can be dismantled for the purpose of: • 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." Moreover, the applicant must be free to choose the actions allowing to satisfy this criterion. 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.	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.
Criterion 14. Information appearing on the EU 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	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

2009/598/EC		place a disproportionate burden on applicants.
Best industrial practices (withdrawn proposal)	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 • 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 delivered. This criterion should be reconsidered because of the potentially high administrative burdens and the uncertain environmental benefits demonstrable.	Based on the elements collected, the proposal has been withdrawn.
Diversion from landfill through a collection system (withdrawn proposals)	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	Based on the elements collected, the proposal has been withdrawn.

	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.	
Social issues	Please explain why there is no criterion on observation of ILO Core Labour Standards as in the case of the product group textiles.	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 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.