Texte zu den geplanten neuen EU-Regelungen zur umweltgerechten Produktgestaltung und zur Energieverbrauchskennzeichnung in der Beleuchtung – Zusammenstellung * des Umweltbundesamtes (UBA), Deutschland

Entwürfe der EU-Kommission vom 13. November 2017

Stellungnahme Österreichs vom Februar 2018

Hinweis: Bitte beachten Sie, daß der angehängte Text nur in Englisch verfaßt ist.

EN: Information on the coming EU Lighting Regulations – Ecodesign and Energy Labelling – Compilation * of the Federal Environment Agency (UBA), Germany

The EU Commission's drafts of 13 November 2017

Comments by Austria as of February 2018

FR: Informations sur les futures réglementations de l'UE concernant l'éclairage – l'écoconception et l'étiquetage énergétique – Compilation * de l'Agence Fédérale de l'Environnement (UBA), Allemagne

Les projets de la Commission Européenne du 13 novembre 2017

Commentaires de l'Autriche de février 2018

Indication: Veuillez noter que le présent texte n'est disponible qu'en anglais.

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* https://www.eup-network.de/de/eup-netzwerk-deutschland/offenes-forum-eu-regelungen-beleuchtung/dokumente/texte/

Inhaltsverzeichnis und Übersicht darüber, welche Themen der folgende Text behandelt und welche nicht

EN: → page IV

FR : → page VI

Erklärungen:

abc behandeltes Thema

abc nichtbehandeltes Thema

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[1] T26LL = stabförmige (tubulare) Leuchtstofflampe mit einem Durchmesser von 26 mm (≙ 8/8 Zoll, daher auch die Bezeichnung T8)

EN: Content list and overview of the issues which are addressed in the following document and which are not

Explanations:

abc issue addressed

abc issue not addressed

2 T26FL = linear (tubular) fluorescent lamp with a diameter of 26 mm (≙ 8/8 inch; therefore also called T8)

FR: Table des matières et un aperçu de quels thèmes sont traitées dans le texte ou ne sont pas

Déclarations:

abc thème traité

abc thème non traité

3 T26LF = lampe à tube fluorescent avec un diamètre de 26 mm (≙ 8/8 pouce ; et qu'on appelle donc aussi T8)

Es folgt ein Originaltext, der der Übersichtlichkeit wegen vom Herausgeber durch Seitenzahlen ergänzt wurde.

EN: The following is an original text, which has been supplemented by the publisher by page numbers for the sake of clarity.

FR: Ce qui suit est un texte original complété par l'éditeur avec des numéros de page pour faciliter la lecture.

AUSTRIAN ENERGY AGENCY

Austrian comments on

draft document for Commission Regulation with regard to eco-design requirements for light sources and control gears

I. General comments

The concepts and requirements in the new draft documents for eco-design and labelling for lighting products presented at the consultation forum meeting on 7th December 2017 are more suitable compared to the previous releases from 2015. However coverage of all lighting technologies and products of the domestic and professional lighting sector in one regulation of new definitions for lighting products and components cause some new challenges that require specific consideration. Furthermore concepts for market surveillance require some attention and revision.

II. Draft regulation document

Scope, exemptions, definitions

The scope of the regulation in terms of technologies and product types covered overall appears as appropriate. Overall it should be taken care that some product types for which efficient LED solutions already do exist are not exempted from the measure by mistake.

Concept of light containing products versus light sources

It is understood that the currently proposed concept involving light sources, control gear and light containing products is introduced to avoid dealing with the classic terminology for lighting components which involves lamps and luminaires.

However the new concept includes some ambiguous definitions and explanations which need to be further clarified to avoid misinterpretation

- It is specified that the requirements in the regulation apply to light sources and separate control gear also including such products or product components if they are part of a “containing product”.
- However some definitions or explanations furthermore suggest that containing products themselves can be considered to be a light source and treated as a light source. Article 2

(definitions) includes an explanation that light containing products may be considered to be a light source. Thus in this case the whole containing product would have to be considered as the relevant light source for the purpose of the regulation, in case there is no smaller light source that could be removed from the product without permanent damage.

This would mean for example that luminaires with fixed integrated non-removable light sources shall be treated as one light source unit to comply with the regulation. For such products also the requirements concerning removability of components as specified in article 4 may not be applicable.

In practice the ambiguous definition and explanation could lead misinterpretation and unclear situations and potentially to abuse of the definitions. To address this problem several options exist of which two are briefly outlined below.

For clarification either a clear definition has to be provided, when (under what terms) a "containing product" can be considered itself to be a light source or preferably light sources and light containing products shall be distinguished by clear definitions:

Option I

It shall be specified that

- That "containing products" may only be considered as "light sources" if their only functionality is to provide light (with the characteristics specified in the scope). This shall be confirmed by the supplier. Any products that provide several functionalities besides lighting in parallel are not to be considered a light source.
- In case the containing product considered as a light source contains smaller light sources which are not removable without permanent damage this shall be justified by the supplier based on clear design or functionality requirements.

Option II

The definitions are generally revised introducing for example *lighting products* versus *containing products* approach:

- *Lighting product:*
  - is a single light source placed as a separate product on the market or used in light containing products or
  - a product containing one or several light sources and supports the only functionality of providing light. Smaller Light sources contained in the product are either
    - removable or
    - non-removable (justification by supplier)

    without damage
- *Containing product:*
  - Contains one or more light sources and control gear and supports other functionality besides providing light. Light sources and control gear are removable without damage.

For some containing products considered to be a light source which does not contain any smaller removable light sources requirements concerning energy efficiency will need to be adapted by a correction factor. There are specific luminaires sold today which are designed to provide a very specific quality of light or light distribution and this specific functionality cause inherently lower energy efficiency (also see section on efficiency requirements).

An adequate correction factor shall be specified for these selected luminaire types (e.g. selected special luminaires for museums).

Removability of light sources and separate control gears (Article 4)

It is appreciated in general that the regulation includes requirements supporting aspects of circular economy and considers aspects of removability of light sources and control gear in containing products. This is particularly relevant for the consumer sector where partly cheap low quality products are entering the market. However to be useful in practice removability of components and related purposes should be specified in more detail considering the following aspects:

- Retrofit light sources equipped with standardised sockets shall be easily removable by end-users.
- Any other light sources and control gear used in containing products shall be removable without damage by professionals.
- For products (containing products considered as a light source, or lighting products, see option indicated above) where light sources cannot be removed without damage (for justified reasons), it must be ensured at least that the integrated smaller light sources and control gear can be easily removed after end of life for the purpose of adequate separation of components or materials. Guidelines for removal shall be provided by the manufacturers.
- For any containing products considered to be a light source without any smaller removable light sources contained, the lifetime indicated shall apply for the whole product.
- General removability of control gear from any kinds of containing products shall be requested (necessary exemptions if needed should be specified). Thus while the light source may or may not be removable, control gear should always be removable and replaceable.

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III. Annex Document

Annex I Exemptions

Railway vehicle lighting, motor vehicles lighting etc.

The exclusion of light sources for railway lighting, vehicle lighting etc. potentially could cause a loophole if it would cover also standard products used in these areas. A broad exemption thus could mean that standard products are kept on the market as long as they are approved for the specific sectors. To avoid a potential too broad exemption of standard products the text in the Annex could be slightly modified: "*This regulation shall not apply to special light sources and separate control gears specifically designed, tested and approved to operate*…

Information requirements concerning exempted special purpose products

Explanations in the text concerning exemptions furthermore include the following:

"*The light source or control gear is accompanied by evidence, in the form of a certificate, a type approval mark, a test report or other documentation, that the product has been specifically approved for the mentioned operating condition or application*."

Here again only a confirmation is required that the specific product is approved for the specific application. This still leaves room that standard products are exempted based on a certain approval. The wording could be strengthened in the sense indicated above. In section 3 there is an appropriate specification for special purpose products which could be also used in sections 1 and 2: "products having a specific technical design for the intended use".

Further explanations indicate that information concerning the special purpose product "possibly" should be provided on the product packaging and in publicity. This is too vague and not sufficient as special purpose products should be easy recognisable without investigation of the technical documentation. Thus concrete information shall be provided on web-based product information or on the product packaging.

Work of art and calibration lamps

Work of art products produced in very low numbers should be exempted from the requirements. Work of art objects or luminaires which are individually crafted only in a very low number of individual products should be exempted from the scope of the regulation. Other special purpose products produced in low numbers and to be exempted are lamps used for photometric calibration. Work of art products can be specified as individually crafted products not involving any batch production.

Beam angle

Annex I exemptions suggest exclusion of products with a specified beam angle below 10 degrees. It would be advisable to set the limit somewhat lower to avoid a loop hole for common spot lamps. There are many spot lamps with 10 degree beam angle on the market today. Thus if manufacturers would specify only a slightly smaller beam angle these products would be excluded from the scope.

ANNEX III Ecodesign requirements

a.) General issues

By some parties the suggestion was raised to generally replace useful luminous flux as one central parameter of the regulation by total luminous flux. The reason for this recommendation among others was that the testing of total luminous flux is simpler and less costly.

However this would not be advisable for the following reasons:

- For spot type products and down-lights the useful luminous flux is an important criterion as the main functionality of these products is to distribute light to a certain direction within a certain beam angle. Thus total flux information is less meaningful in these cases. The gonio-photometer measurements required for spots and down-lights are also necessary to check the beam angle specified and allow an assessment of the overall light distribution.
- For most lighting products the total luminous flux is to be considered and tested. Thus in most cases there is no additional effort for assessing the useful flux.

b.) Energy efficiency requirements for light sources – general aspects

LFL T8 tubes

Requirements in Annex III specify a phase-out of most types of T8 LFL tubes. According to calculations from the preparatory study this is the main measure in the new regulation in terms of energy savings.

Some stakeholders e.g. from the public and private service sector or industrial sector have proposed to postpone the phase-out of T8 LFL tubes to allow a more suitable long-term transition and to accommodate for still existing challenges concerning suitable replacement lamps for selected applications. According to stakeholders there are still some areas where adequate replacement products for T8 LFLs (e.g. meeting specific temperature or safety requirements) are not yet available. Availability of adequate replacement products should have been analysed as part of the preparatory study. It is unclear whether a few specific gaps have been overlooked in the study.

It is therefore proposed to consider a second tier for the phase-out of T8 LFL lamps for 2022 or 2023 but at the same time to arrange a small study on the full availability of replacement products for T8 LFL lamps.

In case a second tier for T8 LFL is considered it should be used to cover additional aspects (e.g. concerning R7s halogen lamps, see below).

Halogen lamps

Annex III suggests a phase-out of most halogen lamp types except for R7s lamps with a luminous flux of max. 2700lm. It seems that it is intended to leave these products on the market to provide spare lamps for luminaires used in the domestic sector. R7s halogen lamps in this area typically are used for so called uplighters. The majority of these types of luminaires was/is sold as low cost products for the mass market. Thus for most of these luminaires a replacement is justified. A comparably very small number of design lamps was/is sold at high price levels. For such products availability of replacement lamps may be still desirable. However this market segment is very small and can be covered by a small number of spare lamps (e.g. a set of spare lamps typically available also in packages of 10 pieces costs about 30€ and covers the need for replacement for 20 years).

Experts from the Austrian Energy Agency expect that R7s halogen lamps up to 2700lm will become available within the next few years. It is therefore it is proposed to phase-out R7s halogen products in a second tier together with T8 LFL e.g. in 2022 or 2023.

In contrast to R7s halogen lamps G4 and G9 halogen lamps which are currently used for many built-in spot luminaires in kitchens and bathrooms are currently not exempted from the requirements and would be phased-out immediately in 2020. Today no adequate LED replacement products for these lamp types are available. G4- and G9-LED lamps currently available are too big and do not fit in many built-in halogen spot luminaires.

It must be ensured that appropriate LED replacement products are available until the phase-out otherwise a dramatic impact for consumers would have to be expected. Alternatively the phase-out should be postponed to a second tier.

Containing products considered as light sources

In case containing products which are considered as light sources including no smaller removable light sources and thus to be considered as the relevant light source for the purpose of the regulation, some adequate correction factors (luminaires) have to be introduced for special types of light sources. There are special luminaires which provide a certain light quality and light distribution for specific applications (e.g. luminaires used in museums) which have lower energy efficiency due to the special functionality and thus require a sufficient correction factor concerning energy efficiency.

Phase-out of containing products involving R7s or G9/G4 halogen lamp technology

Any containing products (luminaires) which require R7s, G9 or G4 halogen lamp technology should be phased-out in 2020.

c.) Functional requirements

Colour rendering

The classic colour rendering index needs to be amended to be fully adequate for LED technology.

For several years already it has been argued and discussed that the classic CRI is not sufficient to ensure good colour rendering for LED lighting. For LED it is particularly important to include R9 for red colour. A simple extended approach would be to use the current CRI with an additional requirement for R9. A minimum criterion often discussed/suggest to ensure sufficient overall colour rendering was R9 >0.

Another option would be to use a more comprehensive index covering other colours as well.

Flicker

It is generally appreciated that a criterion for flicker is considered as the quality of some products suffers from flicker effects.

However it is important to specify adequate requirements and to make sure that the requirements can be tested based on suitable standards at the time the regulation goes into force. Thus relevant standards must be in place at the time of enforcement. In this regard also the new IEC draft standard from 2018 (IEC TR 6163158) may be considered and evaluated.

In case there is still more time needed to ensure appropriate specification of requirements and testing for flicker it could be considered to include flicker as an information requirement in 2020 and to implement eco-design requirements for a second tier in 2022 or 2023.

Requirements for product lifetime

It is essential that the regulation includes certain criteria and requirements concerning product lifetime. An early failure requirement for 500 hours operation as currently proposed by some parties would not be sufficient in particular for products in the domestic sector. For lighting in households many new brands and products have been entering the EU market with partly low or unknown quality in terms of lifetime. Recent product testing for domestic lamps in international initiatives showed quality problems concerning lifetime criteria.

On the other hand the existing lifetime requirements involving tests after 6000hrs product operation are not efficient and cause a too large burden. Furthermore enforcement by MSAs is not effective as products are often not available on the market anymore after testing is finalised.

Therefore an accelerated approach for the testing of lifetime aspects is appreciated. However the approach proposed shall be transparent in terms of requirements and should not involve additional large burden for market surveillance authorities.

As there is currently little experience available concerning accelerated endurance tests involving only 1000hrs of testing, it is suggested to keep in parallel the option of a standard test excluding enforced temperature regime. Also this test could be shortened to a maximum of 3000hrs including switching

cycles which allow full cooling and heating cycles for the products. Requirements concerning lamp failure and lumen maintenance should be revised appropriately.

Product failure testing for small lamp samples (3 products per sample) would require a tolerance of 0% because any other levels would be too high and meaningless. However at the same time the testing approach needs to be changed to include retesting if one of the three products in the sample fails.

Thus the product is not already non-compliant if one product fails but an additional set of products are to be tested in this case (similar to other regulations).

Possible requirements for accelerated endurance tests and standard tests

Lifetime related requirements	
Product failure	
after 1000hrs (accelerated endurance test) **or**	0% failure (involving retesting in case of failure)
after 3000 hrs (standard test)	0% failure (involving retesting in case of failure)
Lumen maintenance	
after 1000hrs (accelerated endurance test) **or**	To be specified (e.g. 0,9)
after 3000 hrs (standard test)	To be specified (e.g.>0,95)

ANNEX IV Verification procedures for market surveillance authorities

Sequence and combination of market surveillance measures

Annex IV specifies a sequential process for market surveillance requiring document inspection as a mandatory step before technical product testing. This is in contradiction with common market surveillance measures in practice. Depending on the specific situation and concrete objectives market surveillance authorities arrange document inspection or technical product testing as two completely independent tasks. It should remain within the freedom and responsibility of the MSAs to choose a sequence or combination of market surveillance measures. Thus MSAs should be free to combine document inspection and technical testing respectively to specify whether the tests are done one after the other or in parallel.

Sample size

It is appreciated that the sample size is reduced to a number of 3 to 10 products per product model. It is not clear whether the price level currently suggested as the criterion for the selection of the sample size is robust enough in practice. Price of a product may vary locally, between countries and over time. Suppliers of products in some cases might argue that the wrong sample size was used for product testing. Thus the robustness of this criterion should be reconsidered.

In case sufficient robustness cannot be confirmed the following approach for specification of sample size may be applied:

- For retrofit light sources with standardised sockets (LED retrofit lamps according to previous terminology) or any other light sources offered as individual products on the market: 10 products per model to be tested
- All containing products or containing products which are regarded as a light source: 3 products per model to be tested.

Options concerning lifetime criteria and related accelerated endurance testing

Lifetime criteria/accelerated endurance testing – general issues

- It is important that significant lifetime criteria and lifetime related product testing will be covered in the new regulation.
- The strategy to shorten the testing time compared to the 6000hrs is favourable since the long current testing is not effective for market surveillance.
- However the accelerated endurance test proposed now (including 3 subtests) seems too demanding. This would also increase the required sample size rather than decreasing it (e.g. from 20 to 30 for the low cost products). Thus a simplification of the test seems advisable.
- In addition, as there is still very limited experience concerning the accelerated endurance testing, it seems advisable to keep a simplified standard test as an alternative second option for the MSAs.

Options concerning a simplification of the short endurance testing

- According to experiences from past testing activities the fast switching cycle test (Subtest 2) is not relevant. Switching only seems to have a significant impact if typical cooling and warming cycles are allowed. Thus it is rather advisable to delete this test and include slow switching in test number 1 or 3.
- Subtest Nr.1 including temperature variation may be too demanding in terms of effort and costs. Furthermore a combination with test 3 would also not allow to reduce the sample size for the cheaper products (20 samples still would be needed). Overall it seems advisable to apply only one of the two temperature tests whereat test 3 due to simpler implementation may be preferable. If test Nr.1 is still considered some more clarifications concerning testing effort are needed.
- The proposed temperature tests are covered in standards like IEC 62717. However the target levels proposed for failure and luminous flux lack sufficient justification. Justification should be provided for the proposed 70%-80% lumen maintenance. The levels seem quite low (70% according to definitions would already correspond to the total lifetime of products).

Including a simplified standard testing approach as a second alternative option for MSAs in parallel to a simplified accelerated endurance test

As there is little experience available concerning accelerated endurance testing, it is proposed to keep a standard test (excluding temperature scenarios). To reduce the testing effort compared to the original 6000hrs test, a shorter test e.g. for 3000hrs could be implemented. For such a test modified requirements need to be specified.

E.g. maximum product failure rate could be reduced to 0% (thus all products are expected to survive the first 3000hrs). However the test then needs to include two rounds of testing in case one product fails in the first test.

Requirements for lumen maintenance should be increased above 0,9 (appropriate level still to be specified). Results from previous testing indicate that a 3000hrs test combined with more stringent requirements could be a good compromise.

Verification tolerances

The verification tolerances suggested in table 6 of the Annex shall be completely reconsidered and revised. The proposed criteria are partly not consistent and partly not appropriate in relation to the proposed sample sizes. Among others it would be important to distinguish between eco- design criteria and requirements and information requirements. Some parameters involve both eco-design and information requirements (e.g. colour rendering).

Ecodesign requirements typically specify levels of a parameter which either shall not be undercut or exceeded. Thus for these criteria typically a one-sided deviation limit is appropriate (upwards and downwards deviation not larger than….).

Information requirements in contrast to previous regulations are not covered in the labelling regulation document. For many information requirements a double sided tolerance is appropriate and shall be specified (maximum negative and positive deviation). All information on tolerances concerning pure information criteria not related to any eco-design requirements shall be included in the labelling regulation (as the information requirements have now been completely shifted to the labelling regulation).

Luminous flux is both used as eco-design and information criterion. Currently only a one-sided tolerance is indicated which is not appropriate. For this central information criterion a certain precision of the declared information is necessary and shall be specified in terms of a positive and negative tolerance.