

Guidance Notes¹

Covering EC Regulations under the Ecodesign for Energy Related Products Framework Directive 2009/125/EC on

Stand-by and off mode power;

External Power Supply Units;

Simple Set Top Boxes;

Non Directional Lighting;

Tertiary Lighting;

Household refrigerating appliances;

Electric Motors and their variable speed drives;

Glandless standalone circulators and glandless circulators integrated in products;

Televisions;

Household Washing Machines and

Household Dishwashers.

¹ Last updated March 2011

Government Guidance Notes

“This guidance is intended to assist those placing energy using equipment on the UK market to understand the application of EU Regulations establishing implementing measures made under the Eco-design for Energy Related Products Framework Directive (ERP).

It aims to explain the EU Regulations, although interpretation of the law is for the courts. Although reference is made to existing legislation, following this guidance is not in itself obligatory. However, if you do follow it you will normally be doing enough to help your organisation meet its legal obligations in respect of the legislation covered in this guidance.

The EU Regulations themselves should always be read and understood, as they constitute the law. This guidance is informative and has no legal authority. However, in considering any breach of legislation that is the subject of this guidance, this guidance could be a relevant consideration for a court, depending on the circumstances of the particular case.

You should refer to the EU Regulations themselves for a full statement of the legal requirements and in the case of any doubt take independent advice, including your own legal advice.

EU Regulations may be revised from time to time, so users should take care to keep themselves informed.

The European Commission is also considering producing guidance for some of the implementing measures made under the ERP. We will review this guidance in light of any such additional guidance.”

Content

1.The Law in Brief

The Eco-design of Energy Related Products Directive (2009/125/EC) is a framework that sets requirements for energy related products. It aims to improve the environmental performance of products throughout their life-cycle by integrating environmental aspects at a very early stage in the product design. The Directive was transposed by Statutory Instrument (SI 210 No: 2617) which came into force on 20 November 2010.

Under this Directive, the European Commission, assisted by a committee of Member States, adopt implementing measures relating to individual product types. To date these have been adopted by Member States in the form of EU Regulations and as such are directly applicable in the UK and all other Member States. However, other forms are possible, including voluntary agreements. These EU Regulations are the specific product related pieces of legislation that set out the legal requirements that products sold in the EU will be required to meet from a specific date.

The implementing measures set out eco-design requirements for those products within their scope. They may address issues such as environmental impacts of product manufacture (processes and materials used), usage of energy or water consumption and emissions) and disposal. The ecodesign requirements for each product group are set out in the relevant Annex to this guidance.

2. Background

The UK Government is committed to seeking cost-effective ways to achieve targets set to reduce carbon emissions as part of its policy on Climate Change. It has already supported and implemented a range of EU policies aimed at improving energy efficiency standards for traded goods. The UK supported the adoption of regulations consistent with its approach including the Eco-design of Energy Related Products Directive.

The European Commission can bring forward proposals for new measures for products at any time under this framework. A Working Plan has been established which explains the products the Commission will be looking at. Further measures will then be being developed following consultation between the Commission, stakeholders and Member States.

This guidance currently covers measures agreed to date that apply to:

- Stand-by and off mode power
- External Power Supply Units
- Simple Set Top Boxes
- Non Directional Lighting
- Tertiary Lighting
- Household refrigerated appliances
- Motors and their variable speed drives
- Glandless standalone circulators and glandless circulators integrated in products
- Televisions

Detailed information on all these measures is given in the Annexes at the end.

Additional guidance will be provided on further product measures as they are agreed.

3. Content of Implementing Measures

Each implementing measure includes the following information.

Subject Matter and Scope

Describes the products to which this measure applies and also sets out exemptions for example. Custom made appliances or those that can only be battery operated. More detailed information about specific exemptions and detailed coverage may also be found in the Annexes to the individual implementing measures.

Definitions

Defines various key words or phrases that are contained in the implementing measure such as product definitions or features.

Ecodesign Requirements

Sets out the relevant ecodesign requirements and the timing for the various requirements.

Conformity Assessment

Describes how the manufacturer should assess whether the products he makes are in compliance with the ecodesign requirements of the implementing measure.

Verification for market surveillance purposes

Indicates how market surveillance authorities should assess whether a product meets the ecodesign standards required by this measure.

Benchmarks

Indicates best available technology on the market for products covered by this measure at the time of adoption.

Repeals

States whether any existing legislation has been repealed as a result of this measure.

Revision

Gives the date by which the Commission should have reviewed the implementing measure and presented the results to Member States.

Entry into force

Gives the date on which the implementing measure enters into force or the way in which this is determined. If no date is included the measure normally enters into force 20 days after publication in the Official Journal of the European Union.

4. Assessing products to see if they are included in the scope of Implementing Measures

The decision whether many products are included within the scope of the regulations should be reasonably straightforward. However there are some products where there may be areas of doubt and uncertainty. As the scope is applicable at a European level, no one Member State can provide definitive interpretation or advice on specific borderline cases. In these cases it may be necessary to seek independent advice to come to a final decision.

Definitions

The definition of “energy related product” and “manufacturer” can be found within Directive 2009/125/EC of 21 October 2009, establishing a framework for setting ecodesign requirements for energy related products. See further sources of information below.

Additional specific definitions relating to individual regulations are contained within those regulations.

6. Content of the Annexes to the Implementing Measure

These set out in detail additional information on the implementing measure. To date these have included information clarifying the scope of the measure, additional definitions, ecodesign requirements, verification procedure for market surveillance purposes, benchmarks and energy efficiency calculations.

7. Frequently Asked Questions***Q. What does ‘placing on the market’ mean?***

A. This term means making an Energy Using Product (ERP) available for the first time on the Community market, with a view to its distribution or use within the Community whether for reward or free of charge and irrespective of the selling technique.

Further guidance is contained in section 2.3 of the “*Guide to the implementation of directives based on the New Approach and the Global Approach*” published by the European Commission in 2000. For ease of reference, the relevant paragraphs and footnotes are reproduced below:-

“A product is placed on the Community market when it is made available for the first time. This is considered to take place when a product is transferred from the stage of manufacture with the intention of distribution or use on the Community market. Moreover, the concept of placing on the market refers to each individual product, not to a type of product, and whether it was manufactured as an individual unit or in series.

“The transfer of the product takes place either from the manufacturer, or the manufacturer’s authorised representative in the Community, to the importer established in the Community or to the person responsible for distributing the product on the Community market⁶. The transfer may also take place directly from the manufacturer, or authorised representative in the Community, to the final consumer or user.

“The product is considered to be transferred either when the physical hand-over or the transfer of ownership has taken place. This transfer can be for payment or free of charge, and it can be based on any type of legal instrument. Thus, a transfer of a product is considered to have taken place, for instance, in the circumstances of sale, loan, hire, leasing and gift.

“Placing on the market is considered not to take place where a product is:

- transferred from the manufacturer in a third country to an authorised representative in the Community whom the manufacturer has engaged to ensure that the product complies with the directive;
- transferred to a manufacturer for further measures (for example assembling, packaging, processing or labelling); • not (yet) granted release for free circulation by customs, or has been placed under another customs procedure (for example transit, warehousing or temporary importation), or is in a free zone;
- manufactured in a Member State with a view to exporting it to a third country;
- displayed at trade fairs, exhibitions or demonstrations; or • in the stocks of the manufacturer, or the authorised representative established in the Community, where the product is not yet made available, unless otherwise provided for in the applicable directives.

“A product offered in a catalogue or by means of electronic commerce is deemed not to have been placed on the Community market until it is actually made available for the first time. In order to respect the rules and principles aiming to prohibit misleading advertising, a non compliance of a product intended for the Community market should be clearly indicated.”

Q. How do I indicate that my product is in compliance with the Ecodesign requirements?

A. The conformity indication is the CE Marking, which signifies that you have taken measures to ensure that each product you place on the market fully meets all applicable Community legislation. Hence, once CE Marking signifies that not only do you fulfil the ERP requirements, but other measures covering, for instance product safety and electromagnetic compatibility are also met. Before affixing the CE Marking the organisation placing the product on the market must, depending on the conformity assessment module used in the

legislation, satisfy themselves that products will be in conformity and must draw up technical documentation to demonstrate this and also prepare a declaration of conformity. Member States carry out market surveillance to check the veracity of these claims and hence the validity of the CE Marking.

8. Further sources of information

Advice for business

National Measurement Office (www.bis.gov.uk/nmo/eup)

The National Measurement Office (NMO) is the market surveillance and enforcement authority for this legislation. It provides information and advice to help businesses to comply.

Business Link (<http://www.businesslink.gov.uk>)

UK businesses can contact their nearest Business Link for free advice. Overview information on ERP can also be found on the national website.

Envirowise (<http://www.envirowise.gov.uk/>)

The Government's Envirowise service provides a comprehensive information and signposting service for firms seeking advice on a wide range of environmental legislation that may affect their business.

Legal references

Directive 2009/125/EC establishing a framework for setting eco-design requirements for energy related products

<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:285:0010:0035:en:PDF>

Links for the Regulations under the framework Directive are given in the Annexes covering the specific measure.

Contacts

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Annex 1

Ecodesign requirements for stand-by and off mode electric power consumption of electrical and electronic household and office equipment

Scope

Electrical and electronic household and office equipment as listed in Appendix A below.

'Electrical and electronic household and office equipment' means any energy using product which:

- (a) is made commercially available as a single functional unit and is intended for the end-user;
- (b) falls under the list of energy-using products of Annex I of the Regulation (reproduced in Appendix A of this guidance for ease);
- (c) is dependent on energy input from the mains power source in order to work as intended; and
- (d) is designed for use with a nominal voltage rating of 250 V or below, also when marketed for non-household or non-office use;

Exemptions

Electrical and electronic household and office equipment placed on the market with a low voltage external power supply. A low voltage external power supply is an external power supply with a nameplate output voltage of less than 6 Volts and a nameplate output current greater than or equal to 550 milliamperes."

SSTBs - Simple set top boxes, are defined in and covered by Regulation 642/2009 which sets standby ecodesign criteria that prevail over the standby Regulation 1275/2008

Ecodesign requirements

From January 2010

- Equipment in off mode shall not consume more than 1.00 watt.
- Equipment in stand-by mode shall not consume more than 1.00 watt where it is providing only a reactivation function, or providing only a reactivation function and a mere indication of enabled reactivation function.
- Equipment in stand-by mode shall not consume more than 2.00 watts where it is providing only information or status display, or providing only a combination of reactivation function and information or status display.
- Equipment shall, except where this is inappropriate for the intended use, provide off mode and/or stand-by mode, and/or another condition which does

not exceed the applicable power consumption requirements for off mode and/or stand-by mode when the equipment is connected to the mains power source.

From January 2013

- Equipment in off mode shall not consume more than 0.50 watt.
- Equipment in stand-by mode shall not consume more than 0.50 watt where it is providing only a reactivation function, or providing only a reactivation function and a mere indication of enabled reactivation function.
- Equipment in stand-by mode shall not consume more than 1.00 watt where it is providing only information or status display, or providing only a combination of reactivation function and information or status display.
- When equipment is not providing the main function, or when other energy-using product(s) are not dependent on its functions, equipment shall, unless inappropriate for the intended use, offer a power management function, or a similar function, that switches equipment after the shortest possible period of time appropriate for the intended use of the equipment, automatically into: stand-by mode, or off mode, or another condition which does not exceed the applicable power consumption requirements for off mode and/or stand-by mode when the equipment is connected to the mains power source. The power management function shall be activated before delivery.

Measurements

The power consumption shall be established by a reliable, accurate and reproducible measurement procedure, which takes into account the generally recognised state of the art.

Measurements of power of 0.50 W or greater shall be made with an uncertainty of less than or equal to 2 % at the 95 % confidence level.

Measurements of power of less than 0.50 W shall be made with an uncertainty of less than or equal to 0.01 W at the 95% confidence level.

Information to be provided by manufacturers

For the purposes of conformity assessment technical documentation must be available for enforcement authorities and shall contain the following elements

(a) for each stand-by and/or off mode:

- the power consumption data in Watts rounded to the second decimal place,
- the measurement method used,
- description of how the appliance mode was selected or programmed,

- sequence of events to reach the mode where the equipment automatically changes modes,
- any notes regarding the operation of the equipment;

(b) test parameters for measurements:

- ambient temperature,
- test voltage in V and frequency in Hz,
- total harmonic distortion of the electricity supply system,
- information and documentation on the instrumentation, set-up and circuits used for electrical testing;

(c) the characteristics of equipment relevant for assessing conformity with the requirements set out in point 1(c) of the Regulation, or the requirements set out in points 2(c) and/or 2(d), of the Regulation as applicable, including the time taken to automatically reach stand-by, or off mode, or another condition which does not exceed the applicable power consumption requirements for off mode and/or stand-by mode.

In particular, if applicable, the technical justification shall be provided that the requirements set out in point 1(c), or the requirements set out in points 2(c) and/or 2(d), are inappropriate for the intended use of equipment.

Verification procedure

When performing market surveillance Member States authorities shall apply the following verification procedure

For power consumption requirements larger than 1.00 W, Member State authorities shall test one single unit. The model shall be considered to comply with the relevant requirements if the results for off-mode and stand-by mode conditions, as applicable, do not exceed the limit values by more than 10 %.

Otherwise, three more units shall be tested. The model shall be considered to comply with the relevant requirements if the average of the results of the latter three tests for off-mode and/or stand-by mode conditions, as applicable, does not exceed the limit values by more than 10%.

For power consumption requirements smaller than, or equal to, 1.00 W, Member State authorities shall test one single unit.

The model shall be considered to comply with the relevant requirements if the results for off-mode and/or stand-by mode conditions, as applicable, do not exceed the limit values by more than 0.10 W.

Otherwise, three more units shall be tested. The model shall be considered to comply with the relevant requirements if the average of the results of the latter three tests for off-mode and/or stand-by mode conditions, as applicable, does not exceed the limit values by more than 0.10 W.

Otherwise, the model shall be considered not to comply.

Legal text

The full text of the Regulation can be downloaded from the Official Journal:

[http://eur-](http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2008:339:0045:0052:EN:PDF)

[lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2008:339:0045:0052:EN:PDF](http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2008:339:0045:0052:EN:PDF)

Appendix A

1. Household appliances

Washing machines

Clothes dryers

Dish washing machines

Cooking:

Electric ovens

Electric hot plates

Microwave ovens

Toasters

Fryers

Grinders, coffee machines and equipment for opening or sealing containers or packages

Electric knives

Other appliances for cooking and other processing of food, cleaning, and maintenance of clothes

Appliances for hair cutting, hair drying, tooth brushing, shaving, massage and other body care appliances

Scales

2. Information technology equipment intended primarily for use in the domestic environment

3. Consumer equipment

Radio sets

Television sets

Videocameras

Video recorders

Hi-fi recorders

Audio amplifiers

Home theatre systems

Musical instruments

And other equipment for the purpose of recording or reproducing sound or images, including signals or other technologies for the distribution of sound and image other than by telecommunications

4. Toys, leisure and sports equipment

Electric trains or car racing sets

Hand-held video game consoles

Sports equipment with electric or electronic components

Other toys, leisure and sport equipment

Annex 2

Commission Regulation (EC) No 107/2009 implementing Directive 2005/32/EC of the European Parliament and of the Council with regard to ecodesign requirements for simple set-top boxes

Scope

This regulation applies to Simple set-top boxes (SSTB). A SSTB is a stand-alone device which, irrespectively of the interfaces used,

(a) has the primary function of converting standard-definition (SD) or high-definition (HD), free-to-air digital broadcast signals to analogue broadcast signals suitable for analogue television or radio;

(b) has no 'conditional access' (CA) function

(c) offers no recording function based on removable media in a standard library format.

A SSTB can be equipped with the following additional functions and/or components which do not constitute a minimum specification of an SSTB:

- (a) time-shift and recording functions using an integrated hard disk;
- (b) conversion of HD broadcast signal reception to HD or SD video output;
- (c) second tuner.

Ecodesign requirements

SSTBs placed on the market on or after the dates set out below shall not exceed the power consumption levels indicated.

Ecodesign Requirement	<i>From 24 February 2010</i>	<i>From 24 February 2012</i>
Stand-by mode	1.00 watt	0.50 watt
Stand-by mode with a display function	2.00 watt	1.00 watt
Stand-by mode if Hard Disk present	n/a	0.50 watt
Stand-by mode if second tuner present	n/a	0.50 watt
Active mode	5.00 watt	5.00 watt
Active mode if decoding High Definition signals	8.00 watt	6.00 watt
Active mode if Hard Disk present	n/a	11.00 Watt
Active mode if second tuner present	n/a	6.00 watt

In addition from 24 February 2010 all SSTB must possess a stand-by mode and be equipped with an 'automatic power down' or similar function.

The automatic power down function should be set as default and automatically switch the SSTB from active mode into stand-by after less than three hours in active mode following the last user interaction and/or a channel change with an alert message two minutes before going into stand-by mode:

From 24 February 2010 manufacturers must also ensure that consumers of SSTBs are provided with the power consumption in Watts rounded to the first decimal place of stand-by and active modes of the SSTB

Relationship with the horizontal measure on “stand-by” and “off mode” (Regulation (EC) No 1275/2008)

The requirements laid down in this Regulation shall prevail over the requirements laid down in Regulation (EC) No 1275/2008.

Measurements

The power consumption referred to above must be established by a reliable, accurate and reproducible measurement procedure, which takes into account the generally recognised state of the art. Measurements of power of 0,50 W or greater shall be made with an uncertainty of less than or equal to 2% at the 95% confidence level. Measurements of power of less than 0,50 W shall be made with an uncertainty of less than or equal to 0.01 W at the 95% confidence level.

Information to be provided by the manufacturers for the purposes of conformity assessment

For the purposes of conformity assessment, technical documentation must be available for enforcement authorities and shall contain the following elements:

(a) *For stand-by and active modes*

The power consumption data in Watts rounded to the second decimal place including consumption data for the different additional functions and/or components

- The measurement method used
- Period of measurement
- Description of how the appliance mode was selected or programmed
- Sequence of events to reach the mode where the equipment automatically changes modes
- Any notes regarding the operation of the equipment

(b) *Test parameters for measurements*

- Ambient temperature
- Test voltage in V and frequency in Hz
- Total harmonic distortion of the electricity supply system
- The fluctuation of the power supply voltage during the tests
- Information and documentation on the instrumentation, set-up and circuits used for electrical testing
- Input signals in RF (for digital terrestrial broadcasts) or IF (for satellite broadcasts)
- Audio/video test signals as described in the MPEG-2 transport stream
- Adjustment of controls

The power requirements of peripheral devices powered by the STB for broadcast reception, such as active terrestrial antenna, satellite LNB or any cable or telecom modem are not required to be included in the technical documentation.

Verification procedure

When performing the market surveillance checks Member State authorities shall apply the following verification procedure:

For power consumption larger than 1,00 W:

Member State authorities shall test one single unit. The model shall be considered to comply

with the relevant provisions of this regulation if the results for active and stand-by mode conditions, as applicable, do not exceed the limit values by more than 10%.

Otherwise, three more units shall be tested. The model shall be considered to comply with this Regulation if the average of the results of the latter three tests for active and stand-by mode conditions, as applicable, does not exceed the limit values by more than 10 %.

For power consumption smaller than, or equal to, 1,00 W:

Member State authorities shall test one single unit. The model shall be considered to comply with the relevant provisions of this Regulation if the results for active and/or stand-by mode conditions, as applicable, do not exceed the limit values by more than 0,10 W.

Otherwise, three more units shall be tested. The model shall be considered to comply with this Regulation if the average of the results of the latter three tests for active and/or stand-by conditions, as applicable, does not exceed the limit values by more than 0.10 W.

Otherwise, the model shall be considered not to comply.

Legal text

The full text of the Regulation can be downloaded from the Official Journal:

[http://eur-](http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:036:0008:0014:EN:PDF)

[lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:036:0008:0014:EN:PDF](http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:036:0008:0014:EN:PDF)

Annex 3

Commission Regulation (EC) No278/2009] implementing Directive 2005/32/EC of the European Parliament and of the Council with regard to ecodesign requirements for External Power Supply Units - 6 April 2009

Scope

No-load condition and average active efficiency of External Power Supply Units (EPSU).

An "external power supply" is a device which meets all of the following criteria:

- (a) it is designed to convert alternating current (AC) power input from the mains power source input into lower voltage direct current (DC) or AC output;
- (b) it is able to convert to only one DC or AC output voltage at a time;
- (c) it is intended to be used with a separate device that constitutes the primary load;
- (d) it is contained in a physical enclosure separate from the device that constitutes the primary load;
- (e) it is connected to the device that constitutes the primary load via a removable or hard-wired male/female electrical connection, cable, cord or other wiring;
- (f) it has nameplate output power not exceeding 250 Watts,
- (g) it is intended for use with electrical and electronic household and office equipment as referred to in Article 2 (1) of Regulation (EC) No 1275/2008

The regulation does not apply to:

- (a) voltage convertors,
- (b) un-interruptible power supplies,
- (c) battery chargers,
- (d) halogen lighting convertors,
- (e) external power supplies for medical devices,
- (f) external power supplies placed on the market no later than 30 June 2015 as a service part or spare part for an identical external power supply which was placed on the market not later than one year after this Regulation has come into force [27 April 2010], under the condition that the service part or spare part, or its packaging, clearly indicates the primary load product(s) for which the spare part or service part is intended to be used with.

Ecodesign requirements

For EPSU placed on the market on or after 27 April 2010:

The no-load condition power consumption shall not exceed 0.50 Watt.

The average active efficiency shall be not less than:

$0.500 \times P_O$ (nameplate output power of the EPSU) - for EPSU with nameplate output power of less than 1.0 Watt;

$0.090 \times \ln(P_O) + 0.500$ - for EPSU with nameplate output power between 1.0 Watt and 51.0 Watts;

0.850 - for EPSU with nameplate output power of more than 51.0 Watts

For EPSU placed on the market on or after 27 April 2011:

The no-load condition power consumption shall not exceed the following limits:

	AC-AC external power supplies, except low voltage external power supplies	AC-DC external power supplies except low voltage external power supplies	Low voltage external power supplies
$P_O \leq 51.0$ Watts	0.50 Watt	0.30 Watt	0.30 Watt
$P_O > 51.0$ Watts	0.50 Watt	0.50 Watt	n/a

The average active efficiency shall be not less than the following limits:

	AC-AC and AC-DC external power supplies, except low voltage external power supplies	Low voltage external power Supplies
$P_O \leq 1.0$ Watt	$0.480 \cdot P_O + 0.140$	$0.497 \cdot P_O + 0.067$
$1.0 \text{ Watt} < P_O \leq 51.0$ Watts	$0.063 \cdot \ln(P_O) + 0.622$	$0.075 \cdot \ln(P_O) + 0.561$
$P_O > 51.0$ Watts	0.870	0.860

Measurements

No-load power consumption and the average active efficiency shall be established by a reliable, accurate and reproducible measurement procedure, which takes into account the generally recognised state of the art.

Measurements of power of 0.50 Watt or greater shall be made with an uncertainty of less than or equal to 2% at the 95% confidence level. Measurements of power of less than 0.50 Watt shall be made with an uncertainty of less than or equal to 0.01 Watt at the 95% confidence level.

Information to be provided by manufacturers

For the purposes of conformity assessment technical documentation must be available for enforcement authorities and shall contain the following elements:

Reported Quantity	Description
Root mean square (RMS) Output Current (mA) RMS Output Voltage (V) Active Output Power (W)	Measured at Load Conditions 1 – 4
RMS Input Voltage (V) RMS Input Power (W) Total Harmonic Distortion (THD)	Measured at Load Conditions 1 – 5

True Power Factor	
Power Consumed (W)	Calculated at Load Condition 1 – 4, Measured at Load Condition 5
Efficiency	Calculated at Load Conditions 1 – 4
Average Efficiency	Arithmetic Average of Efficiency at Load Conditions 1 – 4

The relevant load conditions are as follows:

Percentage of Nameplate Output Current	
Load Condition 1	100 % ± 2%
Load Condition 2	75% ± 2%
Load Condition 3	50% ± 2%
Load Condition 4	25% ± 2%
Load Condition 5	0% (no-load condition)

Verification procedure

When performing market surveillance checks Member State authorities shall apply the following verification procedure:

Member State authorities shall test one single unit. The model shall be considered to comply

with the relevant provisions of this regulation if :

- (a) the result for no-load condition does not exceed the applicable limit value by more than 0.10 Watt, and
- (b) the arithmetic average of efficiency at load conditions 1-4 does not fall below the applicable limit value for average active efficiency by more than 5%.

If the results referred to above are not achieved, three additional units of the same model shall be tested. After these tests the model shall be considered to comply with the requirements if:

- (a) the average of the results for no-load condition does not exceed the applicable limit value by more than 0.10 Watt, and
- (b) the average of the arithmetic averages of efficiency at load conditions 1-4 does not fall below the applicable limit value for average active efficiency by more than 5%.

If the results referred to above are not achieved, the model shall be considered not to comply with the requirements.

Legal text

The full text of the Regulation can be downloaded from the Official Journal:

<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:093:0003:0010:EN:PDF>

Annex 4

Commission Regulation (EC) No 244/2009 implementing Directive 2005/32/EC of the European Parliament and of the Council with regard to ecodesign requirements for non-directional household lamps

Readers may wish to note the informal guidance on the Implementing Measure contained in Commission Memorandum 09/113 (18/03/2009), available at <http://europa.eu/rapid/pressReleasesAction.do?reference=MEMO/09/113&format=HTML&aged=0&language=en&guiLanguage=en>.

It must be noted that this Regulation was amended by Regulation 852/2009 of 18th September 2009, which alters the functionality requirements on lamps.

Scope

This regulation applies to all non-directional lamps sold for household use. It does not apply to directional lamps (as defined Article 2) or lamps excluded from the scope in Article 1.

Lamps that are not intended for household room illumination and which are sold as 'special purpose' are also excluded, so long as the product information makes this clear by 1 September 2009 or if the lamp is special purpose due to its technical parameters. This is interpreted by the Government and the Commission as allowing replacement lamps for domestic appliances (etc) to remain on the market but not for these lamps to be marketed as lamps for general lighting.

Ecodesign requirements

The requirements are broken into three distinct categories:

1. Minimum efficacy standards for lamps placed on the market
2. Functionality requirements
3. Product information requirements

Taken together with the stages outlined in Article 3 of the Regulation, Tables 1 and 2 set out the timetable for which the minimum efficacy standards will apply. The efficacies (expressed as the maximum rated power P_{max} for a given rated luminous flux Φ) are similar to the classes set out under the existing EU Energy Label for lamps as set out in 98/11/EC (under the Energy Labelling Framework Directive 92/75/EC). This means that, as a general guide, the eco-design requirements can be put as:

Stage	Date	Main result
Stage 1	1 September 2009	Clear lamps equivalent to 100W incandescent lamps, or above, must be minimum C class. Non-clear (frosted/pearl) lamps must be minimum A-class. Introduction of functionality requirements on lamps.
Stage 2	1 September 2010	Phase-out of 75 W clear incandescent lamps. Introduction of information requirements.
Stage 3	1 September 2011	Phase-out of 60 W clear incandescent lamps.
Stage 4	1 September 2012	Phase out of all remaining clear incandescent lamps (i.e. 40W and 25W).
Stage 5	1 September 2013	Enhanced functionality requirements.
Stage 6	1 September 2016	Raising the minimum level to B class for clear retrofit lamps (i.e. phasing out C-class retrofit halogen lamps).

The minimum standard for lamps of type R7 and G9 cap will remain at 'C'-class after Stage 6 (1 September 2016).

Table 3 outlines 'correction factors' for the listed lamp types, which allows them to claim adjusted efficacies in order to meet the minimum standards.

Functionality requirements

Functionality requirements on CFLs are set out in table 4 of the Regulation (Annex II). These cover aspects such as lamp lifetime, start-time, warm-up time, UV radiation, power factor, colour rendering, lamp survival factor and lumen maintenance. Table 5 (Annex II) sets requirements on all lamp types other than CFLs or LED lamps, which as defined in Article 2, includes lamps containing one or more LEDs with integrated power supply, or other components that cannot be removed. Functionality requirements come into force in Stage 1, 1 September 2011, and further requirements supersede these from Stage 5, 1st September 2013.

It must be noted that Table IV has been amended by Regulation 859/2009 of 18th September 2009.

<http://eurlex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:247:0003:0005:EN:PDF> which removes the UVA, UVB and UVC emissions limits on lamps other than

CFLs and LED lamps. UV emissions for these products must be below safe levels, as set out under the General Product Safety Directive 2001/95 EC

These requirements should be tested in line with the test standards outlined in Annex III, except for those relating to 'switching cycles before failure' where a different test is prescribed, though under the same conditions as the appropriate test standard. For the purposes of testing lamp lifetime, lamp survival factor, lumen maintenance and premature failure, the standard switching cycle according to Annex III shall be used.

Product information requirements

This requirement relates to i) information that must be 'visibly displayed prior to purchase to end users on the packaging' and ii) on free-access websites. Note that lamps that would not meet the efficacy requirements after Stage 4 are not required to conform to this requirement at any stage.

The product information requirements are carefully non-prescriptive and allows for manufacturers to develop the means to communicate this information, noting that lamps are often produced for more than one market. Information is required to be provided on lamps as of Stage 2, i.e. 1 September 2010.

Manufacturers must ensure that a free-access website is available to consumers without charge

Manufacturers placing products below A-class (after any correction factors are applied) will not be able to label or market these products as 'energy saving lamp' or similar.

Measurement

The eco-design standards outlined in Annex 2 shall be established by a reliable, accurate and reproducible measurement procedure, which takes into account the generally recognised state of the art.

Information to be provided by manufacturers

For the purposes of conformity assessment technical documentation must be available for enforcement authorities and should contain the elements that are required to be made available to consumers, as outlined in Annex II, part 3 of the measure.

Verification procedure

When performing market surveillance checks Member State authorities shall apply the following verification procedure:

Member State authorities shall test a sample batch of minimum 20 lamps of the same model from the same manufacturer randomly selected.

The batch shall be considered to comply with the provisions as set out in Annex II applicable of the Regulation if the average results of the test batch do not vary from the limit, threshold or declared values by more than 10%. Otherwise the model will be considered not to comply.

Member States' authorities shall use accurate and reliable state-of-the-art measurement methods which deliver reproducible results, including, where available harmonised standards the reference numbers of which have been published for that purpose in the Official Journal of the European Union; or, otherwise, the standards which are listed in Annex III of the measure.

Legal text

The full text of the Regulation and the Amending Regulation can be downloaded from the Official Journal:

<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:076:0003:0016:EN:PDF>

<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:247:0003:0005:EN:PDF>

Annex 5

Commission Regulation (EC) No 245/2009 implementing Directive 2005/32/EC of the European Parliament and of the Council with regard to ecodesign requirements for fluorescent lamps without integrated ballast, high intensity discharge lamps, and for ballasts and luminaires able to operate lamps, and repealing Directive 2000/55/EC.

It must be noted that this Regulation was amended by Regulation 347/2010 of 21 April 2010, which improves coherence between the non-directional lighting and tertiary lighting regulations.

Scope

This regulation applies to fluorescent lamps without integrated ballast, high-intensity discharge lamps (HIDs) and to ballasts and luminaires able to operate such lamps, even if integrated into other energy-using products, if they are intended for general lighting applications. Definitions for these terms are provided in Article 3.

The Regulation does not apply to non-white light sources (excepting high-pressure Sodium lamps, which are included within the scope), directional lamps, and a number of lamps produced for generally-accepted specialist applications, the technical parameters for which are defined in Annex I of the measure (however note that some of them are amended by the annex in Reg 347/2010). This is interpreted by the Government and the Commission as allowing replacement products for specialist purposes (e.g. medical purposes) to remain on the market but not for these lamps to be marketed as lamps for non-specialist purposes.

It must be noted that the requirements are subject to products placed on the market, irrespective of their use and application.

Note that this regulation repeals the requirements set out in Directive 2000/55/EC.

Ecodesign requirements

The requirements are set out in Annex III and are broken into three parts:

- Part 1 – requirements for fluorescent **lamps** without integrated ballast and for high-intensity discharge **lamps** (efficacy requirements, performance (functionality) requirements, and product information).
- Part 2 – requirements for **ballasts** for fluorescent lamps without integrated ballast and **ballasts** for high-intensity discharge lamps (performance requirements and product information)
- Part 3 – requirements for **luminaires** for fluorescent lamps without integrated ballast and for **luminaires** for high intensity discharge lamps (performance requirements and product information)

Part 1 – lamps

Efficacy requirements:

From April 2010:

- The rated minimum efficacy standards apply to double-capped T8 and T5 lamps, dependent on the nominal wattage of the lamp, as listed in Table 1.
- The rated minimum efficiency standards apply to single-capped fluorescent lamps (non-integrated CFLs, depending on the nominal wattage of the lamp and on the lamp type, as listed in Tables 2-5 (noting tables 2 and 3 are replaced in Regulation 347/2010)

For both double- and single-capped lamps:

- i. The rated minimum efficacies shall be measured at 25°C, even if the lamp is not designed to operate at optimum output at 25°C.
- ii. When the nominal wattage of the lamp are different to those listed in the tables 1-5 as appropriate, the lamp must reach the efficacy of the nearest equivalent wattage. This also applies to the shape of the lamp if there is a variation from those depicted
- iii. Corrections factors are given for both double and single capped lamps for those products that meet the technical parameters given in Table 6 (see Amending Regulation).

From April 2012:

- Double-capped fluorescent lamps of all types will be subject to the same requirements applied to T8 lamps in April 2010, i.e. those lamps not T8 lamps must meet the requirements for T8 lamps listed in Table 1 (column A). Again, if the nominal wattage of the lamp is different to those listed in Table 1 (column A) then the lamp must conform to the minimum rated efficacy of the nearest equivalent wattage. The correction factors applied in table 6 continue to apply, as appropriate.
- High Pressure Sodium lamps of $R_a \leq 60$ shall have at least the rated efficacies outlined in Table 7. However where these lamps are designed to operate on control gear for High Pressure Mercury lamps, this requirement does not apply until April 2015. Where these lamps are of $T \geq 5,000K$ or equipped with a second lamp envelope, lamps shall achieve 90% of the efficacy requirements in Tables 7, 8 and 9.
- Metal Halide Lamps will $R_a \leq 80$ and High Pressure Sodium lamps with $R_a > 60$ shall have at least the rated efficacies outlined in Table 8. Where these lamps are of $T \geq 5,000K$ or equipped with a second lamp envelope, lamps shall achieve 90% of the efficacy requirements in Tables 7, 8 and 9.

From April 2015:

- High Intensity Discharge Lamps other than High Pressure Sodium lamps and Metal Halide Lamps shall have at least the efficacies listed in Table 9. Where these lamps are of $T \geq 5,000\text{K}$ or equipped with a second lamp envelope, lamps shall achieve 90% of the efficacy requirements in Tables 7, 8 and 9.
- 2015 High Pressure Sodium lamps of $R_a \leq 60$ shall have at least the rated efficacies outlined in Table 7. Where these lamps are of $T \geq 5,000\text{K}$ or equipped with a second lamp envelope, lamps shall achieve 90% of the efficacy requirements in Tables 7, 8 and 9.

From April 2017:

- Fluorescent lamps without integrated ballast shall be designed to operate with ballasts of energy efficiency class A2 (as outlined in the ballast requirements below or point 2.2 of Annex III).
- Metal Halide Lamps shall have at least the rated efficacies of that listed in Table 10. Where these lamps are of $T \geq 5,000\text{K}$ or equipped with a second lamp envelope, lamps shall achieve 90% of the efficacy requirements in Tables 7, 8 and 9.

Performance requirements:

From April 2010:

T8 fluorescent lamps without integrated ballast shall have a colour rendering index $R_a \geq 80$.

From April 2012:

- All fluorescent lamps without integrated ballast shall have a colour rendering index $R_a \geq 80$.
- All fluorescent lamps without integrated ballast shall have a lamp lumen maintenance factor of at least those given in Table 11 as appropriate for the different lamp types listed (table 11 was updated and a table 11a added to apply cumulative deductions to the values, by Regulation 347/2010).
- All fluorescent lamps without integrated ballast shall have a lamp survival factor of at least those given in Table 12 as appropriate for the different lamp types listed (see replaced table in Amending Regulation).
- High Pressure Sodium lamps shall have at least the lamp survival factors and lamp lumen maintenance factors listed Table 13 (table 13 also amended). New requirements for retrofit lamps designed to operate on high pressure mercury vapour lamps have been added, which are applicable until April 2016.

From April 2017:

- Metal halide Lamps shall have at least the lamp survival factors and lamp lumen maintenance factors listed Table 14.

Product information requirements:

From April 2010:

- Manufacturers must make available the information listed in para 1.3 (a-j) on free access websites for each fluorescent lamp without integrated ballast or High Intensity Discharge lamp placed on the market. This information must also be made available in the technical documentation file (see conformity assessment, below).

Part 2 - ballasts

Performance requirements

From April 2010:

- Non-dimmable ballasts for fluorescent lamps shall meet at least the standards as defined in Tables 17 or 18, depending on the ballast type.
- Dimmable ballasts for fluorescent lamps shall meet at least the efficacy requirements set out in Table 19. At the dimming position corresponding to 25% of the lumen output of the operated lamp, the input power (P_{in}) of the lamp-ballast circuit shall not exceed

$$P_{in} < 50\% \times (P_{Lrated} \div \eta_{ballast})$$

Where P_{Lrated} is the rated lamp power and $\eta_{ballast}$ is the minimum energy efficiency limit of the respective EEI class.

- The power consumption of fluorescent lamp ballasts shall not exceed 1.0 W when operated lamps do not emit any light in normal operating conditions and when other possible connected components (network connections, sensors etc.) are disconnected. If they cannot be disconnected, their power shall be measured and deducted from the result.

From April 2012:

- Dimmable ballasts for High Intensity Discharge lamps shall meet the efficacy requirements set out in Table 15.

- The power consumption of ballasts used with fluorescent lamps without integrated ballast shall not exceed 0,5 W when operated lamps do not emit any light in normal operating conditions. This requirement shall apply to ballasts when other possible connected components (network connections, sensors etc.) are disconnected. If they cannot be disconnected, their power shall be measured and deducted from the result.

From April 2017:

- Ballasts for fluorescent lamps without integrated ballast shall have the efficiency:

$$\eta_{\text{ballast}} \geq \text{EBbFL}$$

where EBbFL is defined in Annex II.3.g

- Ballasts for high intensity discharge lamps shall have the efficiency described in Table 16.

Product information requirements

From April 2010:

Manufacturers of ballasts shall provide at least the following information on free-access websites and in other forms they deem appropriate for each of their ballast models. That information shall also be affixed in a distinct and durable form to the ballast. It shall also be contained in the technical documentation file drawn up for the purposes of conformity assessment pursuant to Article 8 of Directive 2005/32/EC:

Please note table 17 was updated in the Amending Regulation.

- For ballasts for fluorescent lamps, an energy efficiency index (EEI) class shall be provided, as defined in the measure and as referred to in Table 17.
- For non-dimmable ballasts not included in table 17 an EEI shall be assigned as depending on their efficiency as described in Table 18:
- Dimmable fluorescent lamp ballasts receive EEI classes according to the class into which the ballast would fall when it is operated at the 100% lumen output, as described in Table 19.
- Multi-wattage ballasts shall either be classified according to their efficiency under the lowest (worst) efficiency, or a relevant class shall be indicated for each operated lamp.

From April 2012:

- Ballasts for high intensity discharge lamps, the efficiency of the ballast as defined in Annex II.1.d shall be indicated.

Part 3 – luminaires

Performance requirements

From April 2010:

- The power consumption of luminaires for fluorescent lamps without integrated ballast shall not exceed the sum of the power consumption of the incorporated ballasts when the lamps they are normally operating do not emit any light when other possible connected components (network connections, sensors etc.) are disconnected. If they cannot be disconnected, their power shall be measured and deducted from the result.

From April 2012:

- Luminaires for fluorescent lamps without integrated ballast and for high intensity discharge lamps shall be compatible with ballasts complying with the third stage requirements, except luminaires with ingress protection grade at least IP4X.
- The power consumption of luminaires for high intensity discharge lamps shall not exceed the sum of the power consumption of the incorporated ballasts when the lamps they are normally operating do not emit any light when other possible connected components (network connections, sensors etc.) are disconnected. If they cannot be disconnected, their power shall be measured and deducted from the result.

From April 2017:

- All luminaires for fluorescent lamps without integrated ballast and for High Intensity Discharge Lamps shall be compatible with ballasts complying with the third stage requirements.

Product information requirements

From October 2010

- Manufacturers of luminaires for fluorescent lamps without integrated ballast with total lamp lumen above 2, 000 lumen shall provide at least the following information on free-access websites and in other forms they deem appropriate for each of their luminaire models. That information shall also be contained in the technical documentation file drawn up for the purposes of conformity assessment pursuant to Article 8 of Directive 2005/32/EC:
 - (a) if the luminaire is placed on the market together with the ballast, information on the efficiency of the ballast according to Annex III.2.2, in accordance with the ballast manufacturer's data;
 - (b) if the luminaire is placed on the market together with the lamp, lamp efficacy (lm/W) of the lamp, in accordance with the lamp manufacturer's data;

(c) if the ballast or the lamp are not placed on the market together with the luminaire, references used in manufacturers' catalogues must be provided on the types of lamps or ballasts compatible with the luminaire (e.g. ILCOS code for the lamps);

(d) maintenance instructions to ensure that the luminaire maintains, as far as possible, its original quality throughout its lifetime;

(e) disassembly instructions.

From April 2012

- The information provision requirements of the first stage (i.e. from October 2010) shall also apply to luminaires for high intensity discharge lamps with total lamp lumen above 2,000 lumen.
- All luminaires for high intensity discharge lamps shall indicate that they are designed for either clear and/or coated lamps within the meaning of Annex II.

Measurement

The eco-design standards outlined in Annex III shall be established by a reliable, accurate and reproducible measurement procedure, which takes into account the generally recognised as state-of-the-art.

Information to be provided by manufacturers

For the purposes of conformity assessment technical documentation must be available for enforcement authorities and should contain the elements that are required to be made available to consumers, as outlined in Annex III parts 1.3, 2.2 and 3.2 of the measure.

Verification procedure

When performing market surveillance checks for lamps Member State authorities shall apply the following verification procedure:

Member State authorities shall test a sample batch of minimum 20 lamps of the same model from the same manufacturer, randomly selected.

The batch shall be considered to comply with the provisions as set out in Annex III, part 1 as applicable of the Regulation if the average results of the test batch do not vary from the limit, threshold or declared values by more than 10%. Otherwise the model will be considered not to comply.

When performing market surveillance checks for ballasts Member State authorities shall test one single unit. The model shall be considered to comply with the provisions as set out in Annex III parts 2 and 3 as applicable if they do not exceed

the limit values. Otherwise three more units shall be tested. The model shall be considered to comply with this Regulation if the average results of the latter three tests does not exceed the limit values.

Legal text

The full text of the Regulation and Amending Regulation can be downloaded from the Official Journal:

<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:076:0017:0044:EN:PDF>

<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2010:104:0020:0028:EN:PDF>

Annex 6

Commission Regulation (EC) No 643/2009 of 22 July 2009 implementing Directive 2005/32/EC of the European Parliament and of the Council with regard to ecodesign requirements for Household refrigerating appliances.

Scope

Electric mains operated household refrigerating appliances -

- with a storage volume up to 1,500 litres,
- including those sold for non-household use or for the refrigeration of items other than foodstuffs,
- that can be battery operated.

Exemptions

The Regulation does not cover –

- refrigerating appliances that are primarily powered by energy sources other than electricity, such as liquefied petroleum gas (LPG), kerosene and bio-diesel fuels;
- battery-operated refrigerating appliances that can be connected to the mains through an AC/DC converter, purchased separately;
- custom-made refrigerating appliances, made on a one-off basis and not equivalent to other refrigerating appliance models;
- refrigerating appliances for tertiary sector application where the removal of refrigerated foodstuffs is electronically sensed and that information can be automatically transmitted through a network connection to a remote control system for accounting;
- appliances where the primary function is not the storage of foodstuffs through refrigeration, such as stand-alone ice-makers or chilled drinks dispensers.

Ecodesign requirements

General Ecodesign Requirements

1. From 1 July 2010:

- For wine storage appliances, the following information shall be displayed in the instruction booklet provided by manufacturers: "This appliance is intended to be used exclusively for the storage of wine".

- For household refrigerating appliances, information shall be provided in the instruction booklet provided by manufacturers concerning:

- the combination of drawers, baskets and shelves that result in the most efficient use of energy for the appliance, and

- how to minimise the energy consumption of the household refrigerating appliance in the use-phase.

2. From 1 July 2013:

- The fast freezing facility, or any similar function achieved through modification of the thermostat settings, in freezers and freezer compartments, shall, once activated by the end-user according to the manufacturer's instructions, automatically revert to the previous normal storage temperature conditions after no more than 72 hours. This requirement does not apply to refrigerator-freezers with one thermostat and one compressor which are equipped with an electromechanical control board.
- Refrigerator-freezers with one thermostat and one compressor which are equipped with an electronic control board and can be used in ambient temperatures below + 16 °C according to the manufacturer's instructions shall be such that any winter setting switch or similar function guaranteeing the correct frozen-food storage temperature is automatically operated according to the ambient temperature where the appliance is installed.
- Household refrigerating appliances with a storage volume below 10 litres shall automatically enter in an operating condition with a power consumption of 0,00 Watt after no more than 1 hour when empty. The mere presence of a hard off switch shall not be considered sufficient to fulfil this requirement.

Specific Ecodesign Requirements

Household refrigerating appliances within the scope of this Regulation with a storage volume equal to or higher than 10 litres shall comply with the energy efficiency index limits in Tables 1 and 2 (below).

The specific ecodesign requirements in Tables 1 and 2 shall not apply to:

- wine storage appliances, or,

- absorption-type refrigerating appliances and other-type refrigerating appliances belonging to Refrigerator with a 1-star, 2-star or 3-star compartment, Refrigerator-freezer, Upright freezer or Chest freezer.

Table 1 - Compression-type refrigerating appliances

Application date	Energy Efficiency Index (EEI)
1 July 2010	EEI < 55
1 July 2012	EEI < 44
1 July 2014	EEI < 42

Table 2 - Absorption-type and other-type refrigerating appliances

Application date	Energy Efficiency Index (EEI)
1 July 2010	EEI < 150
1 July 2012	EEI < 125
1 July 2015	EEI < 110

Measurements

Measurements shall be made using a reliable, accurate and reproducible measurement procedure that takes into account the generally recognised state of the art measurement methods,

General Conditions for Testing

The following general conditions for testing apply:

- if anti-condensation heaters that can be switched on and off by the end-user are provided, they shall be switched on and — if adjustable — set at maximum heating;
- if "through-the-door devices" (such as ice or chilled water/drinks dispensers) which can be switched on and off by the end-user are provided, they shall be switched on during the energy consumption measurement but not operated;
- for multi-use appliances and compartments, the storage temperature during the measurement of energy consumption shall be the nominal temperature of

the coldest compartment type as claimed for continuous normal use according to the manufacturer's instructions;

- the energy consumption of a refrigerating appliance shall be determined in the coldest configuration, according to the manufacturer's instructions for continuous normal use for any "other compartment" (14°C + compartments other than wine storage compartments) . The storage temperature for a given compartment shall be the nominal design temperature for that compartment .

Technical Parameters

The following parameters shall be established:

- "overall dimensions", which are measured to the nearest millimetre;
- "overall space required in use", which is measured to the nearest millimetre;
- "total gross volumes(s)", which is measured to the nearest whole number of cubic decimetres or litres;
- "storage volume(s) and total storage volume(s)", which is measured to the nearest whole number of cubic decimetres or of litres;
- "defrosting type";
- "storage temperature";
- "energy consumption" which is expressed in kilowatt hours per 24 hours (kWh/24h), to three decimal places;
- "temperature rise";
- "freezing capacity";
- "power consumption", which is measured in Watts rounded to two decimal places; and
- "wine storage compartment humidity", which is expressed as a percentage rounded to the nearest integer.

Information to be provided by Manufactures

For the purpose of conformity assessment, technical documentation must be available for enforcement authorities and shall contain the following elements :

- i) Technical parameters referred to above under the Measurements heading

ii) the result of the calculations of the Energy Efficiency Index

Energy Efficiency Index – Cold appliances efficiency is defined using Energy Efficiency Index (EEI) which is intended to allow comparison of different technologies whilst removing the impact of a number of factors including the size of the appliance, the design temperature of a given compartment, whether the appliance has a frost free function, the climate zone for which an appliance is built and the additional energy required for built-in appliances; the more efficient the technology, the closer the the value of EEI is to Zero. The method for calculating the EEI is contained in Annex IV of the Regulation 643/2009.

Verification procedures

Member State authorities shall test a single household refrigerating appliance. If the measured parameters do not meet the values declared in the information provided by the manufacturer (as above), within the range defined below, the measurements shall be carried out on three additional household refrigerating appliances. The arithmetic mean of the measured values of these three additional household refrigerating appliances shall meet the requirements laid down in the ecodesign section within the range defined in Table 3 below.

In the table below '**rated value**' means a value that is declared by the manufacturer.

Table 3

Measured parameter	Verification tolerances
Rated gross volume	The measured value shall not be less than the rated value by more than 3 % or 1 litre , whichever is the greater value.
Rated storage volume	The measured value shall not be less than the rated value by more than 3 % or 1 litre, whichever is the greater value. Where the volumes of the cellar compartment and fresh food storage compartment are adjustable, relative to one another by the user, this measurement uncertainty applies when the cellar compartment is adjusted to its minimum volume.

Freezing capacity	The measured value shall not be less than the rated value by more than 10 %.
Energy consumption	The measured value shall not be greater than the rated value (E24h) by more than 10 %.
Power consumption of household refrigerating appliances with a storage volume below 10 litres	The measured value after no more than 1 hour when empty shall not be greater than the 0.00 W by more than 0.10 W at the 95% confidence level
Wine storage appliances	The value measured for the relative humidity shall not exceed the nominal range by more than 10 %.

Otherwise, the model and all other equivalent household refrigerating appliance models shall be considered not to comply.

Legal text

The full text of the Regulation can be downloaded from the official Journal :

<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32009R0643:EN:NOT>

Annex 7

Commission Regulation (EC) No 640/2009 implementing Directive 2005/32/EC of the European Parliament and of the Council with regard to ecodesign requirements for Electric Motors and their Variable Speed Drives

Scope

This Regulation applies to three phase, AC induction motors rated for use between 0.75kW and 375kW, which are in the main, applied in commercial and industrial applications.

The Regulation does not apply to:

- motors designed to operate wholly immersed in a liquid;
- motors completely integrated into a product (for example gear, pump, fan or compressor) of which the energy performance cannot be tested independently from the product;
- motors specifically designed to operate:
 - at altitudes exceeding 1 000 metres above sea-level;
 - where ambient air temperatures exceed 40 °C;
 - in maximum operating temperature above 400°C;
 - where ambient air temperatures are less than -15 °C for any motor or less than 0°C for a motor with air cooling;
 - where the water coolant temperature at the inlet to a product is less than 5°C or exceeding 25°C;
 - in potentially explosive atmospheres as defined in Directive 94/9/EC;
- brake motors.

Ecodesign requirements

Motor efficiency is measured in accordance with IEC standards, with IE1 being the least efficient and IE4 the most efficient. The Regulation sets ecodesign requirements for motors in three stages:

- From June 2011 – Electric Motors achieve an energy efficiency standard of at least IE2
- From January 2015 – Larger Electric Motors (7.5 – 375kW) achieve an energy efficiency standard of at least IE3, or IE2 if the motor is equipped with a variable speed drive (VSD)
- From January 2017 – Electric Motors (all sizes) achieve an energy efficiency standard of IE3, or IE2 if the motor is equipped with a VSD.

Measurements

Measurements and calculations shall be made using a reliable, accurate and reproducible method, which takes into account the generally recognised state of the art methods.

The energy efficiency is the ratio of mechanical output power to the electrical input power. The efficiency level of the motor, as specified in Annex I, shall be determined at rated output power (P_N), rated voltage (U_N), and rated frequency (f_N).

The difference between the output mechanical power and the input electrical power is due to losses occurring in the motor. The determination of total losses shall be carried out by one of the following methods:

- measurement of total losses; or
- determination of separate losses for summation.

Information to be provided by manufacturers

For the purposes of conformity assessment technical documentation containing the following information must be available for enforcement authorities. Points 1-3 should be durably marked on or near the rating plate of the motor.

1. nominal efficiency (η);
2. efficiency level: 'IE2' or 'IE3';
3. the year of manufacture;
4. manufacturer's name or trade mark, commercial registration number and place of manufacturer;

5. product's model number;
6. number of poles of the motor;
7. the rated power output(s) or range of rated power output (kW);
8. the rated input frequency(s) of the motor (Hz);
9. the rated voltage(s) or range of rated voltage (V);
10. the rated speed(s) or range of rated speed (rpm);
11. information relevant for disassembly, recycling or disposal at end-of-life;
12. information on the range of operating conditions for which the motor is specifically designed:

- (i) altitudes above sea-level;
- (ii) ambient air temperatures, including for motors with air cooling;
- (iii) water coolant temperature at the inlet to the product;
- (iv) maximum operating temperature;
- (v) potentially explosive atmospheres.

Verification procedure

1. The Market Surveillance Authority will test one single unit initially.
2. The model shall be considered to comply with the provisions set out in this Regulation, if in the nominal motor efficiency (η), the losses ($1 - \eta$) do not vary from the values set out in Annex I by more than 15% on power range 0.75-150 kW and 10% on power range > 150-375 kW.
3. If the result referred to in point 2 is not achieved the market surveillance authority will randomly test three additional units, except where motors are produced in lower quantities than five per year.
4. The same model shall be considered to comply with the provisions set out in this Regulation, if in the average of the nominal efficiency (η), the losses ($1 - \eta$) of the three units referred to in point 3 do not vary from the values set out in Annex I by more than 15% on power range 0.75-150 kW and 10% on power range >150- 375 kW.

5. If the results referred to in point 4 are not achieved, the model shall be considered not to comply with this Regulation.

Legal text

The full text of the Regulation can be downloaded from the Official Journal:

<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:191:0026:0034:EN:PDF>

Annex 8

Commission Regulation (EC) No 641/2009 implementing Directive 2005/32/EC of the European Parliament and of the Council with regard to ecodesign requirements for glandless stand alone circulators and glandless circulators integrated in products.

Scope

The Regulation applies to both glandless stand alone circulators and glandless circulators integrated in products (for example boilers), and which have a rated hydraulic output power in the range 1-2,500W.

Exemptions

(a) drinking water circulators, however the following information shall be provided on the packaging and in the technical documentation of drinking water circulators: 'This circulator is suitable for drinking water only.'

(b) circulators integrated in products and placed on the market not later than 1 January 2020 as replacement for identical circulators integrated in products and placed on the market no later than 1 August 2015. The replacement product or its packaging must clearly indicate the product(s) for which it is intended.

Ecodesign requirements

- from **1 January 2013**, glandless stand alone circulators achieve an energy efficiency index (EEI) of 0.27 (approximately equivalent to A rated on the existing voluntary label);
- from **1 August 2015**, glandless circulators, both stand alone and integrated in products, achieve an EEI of 0.23.

Note: The method for calculating the EEI in these regulations is different from that used in the current European voluntary labelling scheme. The EEI values in the above regulations are therefore not comparable with the current EEI values on which the voluntary labelling scheme is based.

The existing voluntary labelling scheme will be discontinued.

Benchmarks

The benchmark for the best available technology on the market for circulators is $EEI \leq 0.20$.

Measurements

The power consumption shall be established by a reliable, accurate and reproducible measurement procedure, which takes into account the generally recognised state of the art.

The methodology for calculating the energy efficiency index is detailed in the regulation.

Information to be provided by Manufacturers

From 1 January 2013:

(1) the energy efficiency index of circulators, calculated in accordance with Annex II of the regulation, shall be indicated on the name plate and packaging of the product and in the technical documentation as follows: ' $EEI \leq 0.[xx]$ ';

(2) the following information shall be provided: 'The benchmark for most efficient circulators is $EEI \leq 0.20$.';

(3) information concerning disassembly, recycling, or disposal at end-of-life of components and materials, shall be made available for treatment facilities;

(4) the following information shall be provided on the packaging and in the technical documentation of drinking water circulators: 'This circulator is suitable for drinking water only.'.

Manufacturers shall provide information on how to install, use and maintain the circulator in order to minimise its impact on the environment.

Verification procedure

Member States authorities shall test a single circulator. If the energy efficiency index exceeds the values declared by the manufacturer by more than 7%, the measurements shall be made on three more circulators. The model shall be considered to comply if the arithmetical mean of the measured values for the latter three circulators do not exceed the values declared by the manufacturer by more than 7%.

Legal text

The full text of the Regulation can be downloaded from the Official Journal:

<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:191:0035:0041:EN:PDF>

Annex 9

Commission Regulation (EC) No 642/2009 of 22 July 2009 implementing Directive 2005/32/EC of the European Parliament and of the Council with regard to Ecodesign Requirements for Televisions

Scope

This Regulation applies to the requirements for the placing on the market of televisions, meaning television sets and television monitors.

Television sets are designed for the display and reception of audiovisual signals under a model or system designation, and consists of a display, as well as one or more tuner(s)/receiver(s) and optional additional functions for data storage and/or display, such as digital versatile disk (DVD), hard disk drive (HDD) or videocassette recorder (VCR), either in a single unit combined with the display, or in one or more separate units.

Television monitors are products designed to display on an integrated screen a video signal from a variety of sources, including television broadcast signals, which optionally controls and reproduces audio signals from an external source device, which is linked through standardised video signal paths including cinch (component composite), SCART, HDMI, and future wireless standards (but excluding non-standardised video signal paths like DVI and SDI), but cannot receive and process broadcast signals.

Ecodesign Requirements

The requirements are set out in Annex 1 of the Regulation in 4 categories:

1. On-mode Power Consumption
2. Standby and Off-mode Power Consumption
3. Home-mode for Televisions Delivered with a Forced Menu
4. Peak Luminance Ratio

On-mode Power Consumption

The on-mode power consumption of a television with visible screen area A expressed in dm² shall not exceed the following limits:

		Television Sets	Television Monitors
20 August 2010	Full HD	$20 \text{ W} + A \cdot 1,12 \cdot 4,3224$	$15 \text{ W} + A \cdot 1,12 \cdot$
	Other	$20 \text{ W} + A \cdot 4,3224 \text{ W/dm}^2$	$15 \text{ W} + A \cdot 4,3224$
1 April 2012	All Resolutions	$16 \text{ W} + A \cdot 3,4579 \text{ W/dm}^2$	$12 \text{ W} + A \cdot 3,4579 \text{ W/dm}^2$

Standby/Off-mode Power Consumption

These requirements also apply to television sets consisting of a display, tuners/receivers and optional data storage or display functions in a separate unit. Televisions placed on the market on or after the dates set out below shall not exceed the power consumption levels indicated.

		7 January 2010	20 August 2011
Off-mode		1W	0.3W
Televisions with easily visible on/off switch using no more than 0.01W in off-position		1W	0.5W
Standby-mode	With only a reactivation function	1W	0.5W
	With information or status display, or combined with a	2W	1W

In addition, from 20 August 2011, televisions must have a default function for automatic power-down. After 4 hours of inactivity, they should switch automatically from on-mode into either standby-mode, off-mode or any other similar condition which does not exceed the applicable power requirement conditions. An alert message will have to be displayed before the automatic power-down occurs.

From both dates, televisions shall have an off-mode and/or standby-mode, and/or another condition which does not exceed the applicable power consumption requirements for off-mode and/or standby-mode when the television is connected to the mains power source.

Home-mode for Televisions Delivered with a Forced Menu

From 20 August 2010, televisions with a forced menu must provide a home-mode, which shall be the default choice on initial activation of the television. The user can then select a different mode, to be confirmed in a second selection process.

Peak Luminance Ratio

From 20 August 2010, the peak luminance of the on-mode condition of the television, as delivered by the manufacturer, shall not be less than 65% of the peak luminance of the brightest preset on-mode condition provided by the television. The same applies to the home-mode condition of televisions delivered with a forced menu.

Information to be provided by manufacturers

For the purposes of conformity assessment, the technical documentation shall contain the following elements:

- a) Test parameters for measurements:
 - Ambient temperature
 - Test voltage in V and frequency in Hz
 - Total harmonic distortion of the electricity supply system
 - The input terminal for the audio and video test signals
 - Information and documentation on the instrumentation, set-up and circuits used for electrical testing;
- b) On-mode:
 - the power consumption data in Watts rounded to the first decimal place for power measurements up to 100 Watts, and to the first integer for power measurements above 100 Watts (From 20 August 2010, this shall be made publicly available on free-access websites).
 - the characteristics of the dynamic broadcast-content video signal representing typical broadcast TV content,
 - the sequence of steps for achieving a stable condition with respect to power consumption,

- for televisions with a forced menu: the ratio of the peak luminance of the home-mode and the peak luminance of the brightest on-mode condition provided by the television, expressed in per cent (for both televisions with and without a forced menu, this information will be available on free websites from 20 August 2010),
 - for television monitors: a description of the relevant characteristics of the tuner used for measurements;
- c) for each standby and/or off-mode:
- the power consumption data in Watts rounded to the second decimal place (from 20 August 2010, this shall be made publicly available on free-access websites),
 - the measurement method used,
 - description of how the mode was selected or programmed,
 - sequence of events to reach the mode where the television automatically changes modes;
- d) automatic power down:
- the duration of the on-mode condition before the television reaches automatically standby, or off-mode, or similar condition;
- e) hazardous substances:
- if the television contains mercury or lead, the content of mercury as X,Xmg and the presence of lead (from 20 August 2010, this shall be made publicly available on free-access websites).

Measurements

Measurements shall be made using a reliable, accurate and reproducible measurement procedure, which takes into account the generally recognised state of the art measurement methods.

On mode power consumption

Television sets and monitors without a forced menu are measured in the on-mode condition, as delivered by the manufacturer, so that the brightness controls shall be in the position adjusted by the manufacturer for the end user. Where there is a forced menu, power consumption will be measured in 'home-mode' condition.

Measurements shall be made:

- at an ambient temperature of 23°C +/- 5 °C;
- using a dynamic broadcast-content video signal representing typical broadcast TV content. The measurement shall be the average power consumed over 10 consecutive minutes;
- after the television has been in the off-mode for a minimum of 1 hour immediately followed by a minimum of 1 hour in the on-mode and shall be completed before a maximum of 3 hours in on-mode. The relevant video signal shall be displayed during the entire on-mode duration. For televisions that are known to stabilise within 1 hour, these durations may be reduced if the resulting measurement can be shown to be within 2% of the results that would otherwise be achieved using the durations described here;
- with an uncertainty of less than or equal to 2% at the 95% confidence level;
- with the Automatic Brightness Control function, if such a function exists and cannot be made inactive, then the measurements shall be performed with the light entering directly into the ambient light sensor at a level of 300 lux, or more.

Standby/off-mode power consumption

Measurements of power of 0,50 Watt or greater shall be made with an uncertainty of less than or equal to 2 % at the 95 % confidence level. Measurements of power of less than 0,50 Watt shall be made with an uncertainty of less than or equal to 0,01 Watt at the 95 % confidence level.

Measurements of peak luminance

Measurements of peak luminance shall be made with a luminance meter, detecting that portion of the screen exhibiting a full (100%) white image, which is part of a 'full screen test' test pattern that does not exceed the average picture level (APL) point where any power limiting occurs in the display luminance drive system.

Measurements of luminance ratio shall be made without disturbing the luminance meter's detection point on the display whilst switching between the conditions referred to in Annex I Part 4.

Verification Procedure

When performing the market surveillance checks, Member State authorities shall apply the following verification procedure.

The Member State market surveillance authority shall test one single television unit. The model shall be considered to comply with the relevant provisions of this regulation if:

- the result for on-mode power consumption does not exceed the applicable limit value by more than 7%;
- the results for off-mode standby conditions do not exceed the applicable limit values by more than 0.10W;
- the result of the peak luminance ratio does not fall below 60%.

If these results are not achieved, three additional units of the same model shall be tested. If the average of the results for the latter three units meets the above conditions, the model shall be considered to comply with the ecodesign requirements. If these results are not achieved, the model shall be considered not to comply with the requirements.

Legal text

The full text of the Regulation can be downloaded from the Official Journal:

<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:191:0042:0052:EN:PDF>

Annex 10

Commission Regulation (EU) No 1015/2010 of 10 November 2010 implementing Directive 2009/125/EC of the European Parliament and of the Council with regard to Ecodesign requirements for household washing machines.

Scope

This regulation applies to electric mains-operated household washing machines and electric mains operated washing machines that can be powered by batteries, including those sold for non-household use and built in household washing machines.

Exemptions

The Regulation does not apply to household combined washer-driers.

Ecodesign requirements

Generic

From 1 Dec 2012

(1) For the calculation of the energy consumption and other parameters for household washing machines, the cycles which clean normally soiled cotton laundry at 40°C and 60°C shall be used (these are standard cotton programmes). These cycles shall be clearly identifiable on the programme selection device or display of the household washing machines, if such devices or displays are present on the machine. These cycles shall be indicated as 'standard 60°C cotton programme' and 'standard 40°C cotton programme'.

From 1 June 2012

(2) The booklet of instructions provided by the manufacturer shall provide:

- information on the standard 60°C and 40°C cotton programmes, referred to as 'standard 60°C cotton programme' and 'standard 40°C cotton programme', that specifies they are suitable to clean normally soiled cotton laundry and that they are the most efficient programmes in terms of combined energy and water consumption for washing that type of cotton laundry. An indication that the actual water temperature may differ from the declared cycle temperature will also be provided;
- the power consumption of the off-mode and of the left-on mode;
- indicative information on the programme time, remaining moisture content, energy and water consumption for the main washing programmes at full or partial load, or both;
- recommendation on the type of detergents suitable for the various washing temperatures.

From 1 Dec 2012

(3) Household washing machines shall make available a cycle at 20°C to end-users. This programme shall be clearly identifiable on the programme selection device or display of the household washing machines, if such devices or displays are present on the machine.

Specific

From 1 December 2011:

- for all household washing machines the Energy Efficiency Index (*EEI*) shall be less than 68;
- for household washing machines with a rated capacity higher than 3kg, the Washing Efficiency Index (*I w*) shall be greater than 1.03;
- for household washing machines with a rated capacity equal to or lower than 3kg, the Washing Efficiency Index (*I w*) shall be greater than 1.00;
- for all household washing machines the Water Consumption (*W t*) shall be:

$$W t \leq 5 \times c + 35$$

where *c* is the household washing machine's rated capacity for the standard 60°C cotton programme at full load or for the standard 40°C cotton programme at full load, whichever is the lower.

From 1 December 2013:

- for household washing machines with a rated capacity equal to or higher than 4 kg, the Energy Efficiency Index (*EEI*) shall be less than 59;
- for all household washing machines the water consumption shall be:

$$W t \leq 5 \times c \frac{1}{2} + 35$$

where $c \frac{1}{2}$ is the household washing machine's rated capacity for the standard 60°C cotton programme at partial load or for the standard 40°C cotton programme at partial load, whichever is the lower.

The method for calculating the Energy Efficiency Index (*EEI*), the Washing Efficiency Index (*I w*) and the Water Consumption (*W t*) are contained in Annex II of the Regulation 1015/2010.

Verification procedures

Member States' authorities shall test a single household washing machine. If the measured parameters do not meet the values declared in the technical documentation file provided by the manufacturer within the ranges defined below, the measurements shall be carried out on three more household washing machines. The arithmetic mean of the measured values of these three household washing machines shall meet the requirements within the ranges set out below, except for the

energy consumption, where the measured value shall not be greater than the rated value of E_t by more than 6%.

Measured parameter

Verification tolerances

Annual energy consumption

The measured value shall not be greater than the rated value (*) of AE_c by more than 10%.

Washing efficiency index

The measured value shall not be less than the rated value of I_w by more than 4%.

Energy consumption

The measured value shall not be greater than the rated value of E_t by more than 10%.

Programme time

The measured value shall not be longer than the rated values of T_t by more than 10%.

Water consumption
rated

The measured value shall not be greater than the value of W_t by more than 10%.

Power consumption in off-mode
and left on mode

The measured value of power consumption P_o and P_l of more than 1,00 W shall not be greater than the rated value by more than 10%. The measured value of power consumption P_o and P_l of less than or equal to 1,00 W shall not be greater than the rated value by more than 0,10 W.

Duration of the left-on mode

The measured value shall not be longer than the rated value of T_l by more than 10%.

(*) 'rated value' means a value that is declared by the manufacturer.

Otherwise, the model and all other equivalent household washing machines models shall be considered not to comply

Revision

A revision of this Regulation in the light of technological progress shall take place no later than 4 years after its entry into force and the results presented to the Ecodesign Consultation Forum. The review shall in particular assess the verification tolerances set out above, the opportunity of setting requirements on rinsing and spin-drying efficiency and the potential for hot water inlet.

Legal text

The full text of the Regulation can be downloaded from the official Journal :

<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2010:293:0021:0030:EN:PDF>

<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2010:298:0087:0087:EN:PDF>

Annex 11

Commission Regulation (EU) No 1016/2010 of 10 November 2010 implementing Directive 2009/125/EC of the European Parliament and of the Council with regard to Ecodesign requirements for household dishwashers.

Scope

This regulation applies to electric mains-operated household dishwashers and electric mains-operated household dishwashers that can be powered by batteries, including those sold for non-household use and built-in dishwashers.

Ecodesign requirements

Generic

From 1 Dec 2012 -

(1) For the calculation of the energy consumption and other parameters for household dishwashers, the cycle which cleans normally soiled tableware (standard cleaning cycle) shall be used. This cycle shall be clearly identifiable on the programme selection device or display of the household dishwasher, if such devices or displays are present on the machine, and shall be named 'standard programme'. It shall be set as the default cycle for household dishwashers equipped with automatic programme selection or any function for automatically selecting a cleaning programme or maintaining the selection of a programme.

From 1 June 2012

(2) The booklet of instructions provided by the manufacturer shall provide:

- the standard cleaning cycle referred to as 'standard programme' and shall specify that it is suitable to clean normally soiled tableware and that it is the most efficient programme in terms of its combined energy and water consumption for that type of tableware;
- the power consumption of the off-mode and of the left-on mode;
- indicative information on the programme time, energy and water consumption for the main cleaning programmes.

Specific

From 1 December 2011:

- for all household dishwashers, except household dishwashers with a rated capacity of 10 place settings and a width equal to or less than 45cm, the Energy Efficiency Index (EEI) shall be less than 71;
- for household dishwashers with a rated capacity of 10 place settings and a width equal to or less than 45cm, the Energy Efficiency Index (EEI) shall be less than 80;
- for all household dishwashers, the Cleaning Efficiency Index (I_C) shall be greater than 1.12.

From 1 December 2013:

- for household dishwashers with a rated capacity equal to or higher than 11 place settings and household dishwashers with a rated capacity of 10 place settings and a width higher than 45cm, the Energy Efficiency Index (EEI) shall be less than 63;
- for household dishwashers with a rated capacity of 10 place settings and a width equal to or less than 45cm, the Energy Efficiency Index (EEI) shall be less than 71;
- for household dishwashers with a rated capacity equal to or higher than 8 place settings, the Drying Efficiency Index (I_D) shall be greater than 1.08;
- for household dishwashers with a rated capacity equal to or less than 7 place settings, the Drying Efficiency Index (I_D) shall be greater than 0.86.

From 1 December 2016:

- for household dishwashers with a rated capacity of 8 and 9 place settings and household dishwashers with a rated capacity of 10 place settings and a width equal to or less than 45cm, the Energy Efficiency Index (EEI) shall be less than 63.

The Energy Efficiency Index (EEI), the Cleaning Efficiency Index (I_C) and the Drying Efficiency Index (I_D) of household dishwashers are contained in Annex II of Regulation 1016/2010.

Verification procedure

Member States authorities shall test a single household dishwasher. If the measured parameters do not meet the values declared in the technical documentation file provided by the manufacturers within the ranges defined below, the measurements shall be carried out on three more household dishwashers. The arithmetic mean of the measured values of these three household dishwashers shall meet the requirements within the ranges set out below, except for the energy consumption, where the measured value shall not be greater than the rated value of E_t by more than 6%.

Measured parameter

Verification tolerances

Annual energy consumption

The measured value shall not be greater than the rated value (*) of AE_c by more than 10%.

Cleaning efficiency index

The measured value shall not be less than the rated value of I_C by more than 10%.

Drying efficiency index

The measured value shall not be less than the rated value of I_D by more than 19%

Energy consumption

The measured value shall not be greater than the rated value of E_t by more than 10%.

Programme time

The measured value shall not be longer than the rated values of T_t by more than 10%.

Power consumption in off-mode
and left on mode

The measured value of power consumption P_o and P_l of more than 1,00 W shall not be greater than the rated value by more than 10%. The measured value of power consumption P_o and P_l of less than or equal to 1.00 W shall not be greater than the rated value by more than 0.10 W.

Duration of the left-on mode

The measured value shall not be longer than the rated value of T_l by more than 10%.

(*) 'rated value' means a value that is declared by the manufacturer.

Otherwise, the model and all other equivalent household dishwasher models shall be considered not to comply.

Revision

A review of this Regulation in the light of technological progress shall take place no later than 4 years after its entry into force and the results shall be presented to the Ecodesign Consultation Forum. The review shall in particular assess the verification tolerances set out above and the possibilities for setting requirements with regard to the water consumption of household dishwashers and the potential for hot water inlet.

Legal Text

The full text of the Regulation can be downloaded from the official Journal :

<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2010:293:0031:0040:EN:PDF>