

Brussels, **XXX**

[...] (2019) **XXX** draft

COMMISSION REGULATION (EU) .../...

of **XXX**

laying down ecodesign requirements for household tumble driers pursuant to Directive 2009/125/EC of the European Parliament and of the Council, amending Commission Regulation (EC) No 1275/2008

and repealing Commission Regulation (EU) 932/2012

(Text with EEA relevance)

This draft has not been adopted or endorsed by the European Commission. Any views expressed are the preliminary views of the Commission services and may not in any circumstances be regarded as stating an official position of the Commission. The information transmitted is intended only for the Member State or entity to which it is addressed for discussion and may contain confidential and/or privileged material.

COMMISSION REGULATION (EU) No xxx/20xx

of xx xxxx 20xx

implementing Directive 2009/125/EC of the European Parliament and of the Council
with regard to ecodesign requirements for household tumble driers

(Text with EEA relevance)

Article 1

Subject matter and scope

1. This Regulation establishes eco-design requirements for the placing on the market of electric mains-operated and gas-fired household tumble driers and built-in household tumble driers, including those sold for non-household use.
2. This Regulation shall not apply to household washer-dryers and household spin-extractors.

Article 2

Definitions

In addition to the definitions set out in Article 2 of Directive 2009/125/EC, the following definitions shall apply for the purpose of this Regulation:

- (1) *'household tumble drier'* means an appliance in which textiles are dried in a rotating drum by tumbling through which heated air is passed and which is declared by the manufacturer in the Declaration of Conformity as complying with the Directive 2014/35/EU of the European Parliament and of the Council¹ or with Directive 2014/53/EU of the European Parliament and of the Council²;
- (2) *'built-in household tumble drier'* means a household tumble drier that is designed, tested and marketed exclusively:
 - (a) to be installed in cabinetry or encased (top and/or bottom, and sides) by panels;
 - (b) to be securely fastened to the sides, top or floor of the cabinetry or panels; and
 - (c) to be equipped with an integral factory-finished face or to be fitted with a custom front panel;
- (3) *'automatic washing machine'* means a washing machine where the load is fully treated by the washing machine without the need for user intervention at any point during the programme
- (4) *'household washing machine'* means an automatic washing machine which cleans and rinses household laundry by using water, chemical, mechanical and thermal means, which also has a spin extraction function, and which is declared by the manufacturer

¹ Directive 2014/35/EU of the European Parliament and of the Council of 26 February 2014 on the harmonisation of the laws of the Member States relating to the making available on the market of electrical equipment designed for use within certain voltage limits (OJ L 96, 29.3.2014, p. 357).

² Directive 2014/53/EU of the European Parliament and of the Council of 16 April 2014 on the harmonisation of the laws of the Member States relating to the making available on the market of radio equipment and repealing Directive 1999/5/EC (OJ L 153, 22.5.2014)

in the Declaration of Conformity as complying with the Directive 2014/35/EU of the European Parliament and of the Council³ or with Directive 2014/53/EU of the European Parliament and of the Council⁴;

- (5) *'household washer-dryer'* means a household washing machine which, in addition to the functions of an automatic washing machine, in the same drum includes a means for drying the textiles by heating and tumbling, and which is declared by the manufacturer in the Declaration of Conformity as complying with Directive 2014/35/EU or with Directive 2014/53/EU;
- (6) *'household spin-extractor'* also known commercially as *'spin-drier'*, means an appliance in which water is removed from the textiles by centrifugal action in a rotating drum and drained through an automatic pump and which is designed to be used principally for non-professional purposes;
- (7) *'air-vented tumble drier'* means a tumble drier that draws in fresh air, passes it over the textiles and vents the resulting moist air into the room or outside;
- (8) *'condenser tumble drier'* means a tumble drier which includes a device (either using condensation or any other means) for removing moisture from the air used for the drying process;
- (9) *'automatic tumble drier'* means a tumble drier which switches off the drying process when a certain moisture content of the load is detected, for example through conductivity or temperature sensing;
- (10) *'non-automatic tumble drier'* means a tumble drier which switches off the drying process after a predefined period, usually controlled by a timer, but which may also be manually switched off;
- (11) *'equivalent model'* means a model which has the same technical characteristics relevant for the technical information to be provided, but which is placed on the market or put into service by the same manufacturer, importer or authorised representative as another model with a different model identifier;
- (12) *'programme'* means a series of operations that are predefined and which are declared by the manufacturer as suitable for drying certain types of textile;
- (13) *'model identifier'* means the code, usually alphanumeric, which distinguishes a specific product model from other models with the same trade mark or the same manufacturer's, importer's or authorised representative's name;
- (14) *'product database'* means a collection of data concerning products, which is arranged in a systematic manner and consists of a consumer-oriented public part, where information concerning individual product parameters is accessible by electronic means, an online portal for accessibility and a compliance part, with clearly specified accessibility and security requirements, as laid down in Regulation (EU) 2017/1369;

³ Directive 2014/35/EU of the European Parliament and of the Council of 26 February 2014 on the harmonisation of the laws of the Member States relating to the making available on the market of electrical equipment designed for use within certain voltage limits (OJ L 96, 29.3.2014, p. 357).

⁴ Directive 2014/53/EU of the European Parliament and of the Council of 16 April 2014 on the harmonisation of the laws of the Member States relating to the making available on the market of radio equipment and repealing Directive 1999/5/EC (OJ L 153, 22.5.2014)

Article 3

Ecodesign requirements

1. The ecodesign requirements for household tumble driers set out in Annex I shall apply from the dates indicated therein.

Article 4

Conformity assessment

1. The conformity assessment procedure referred to in Article 8 of Directive 2009/125/EC shall be the internal design control system set out in Annex IV to that Directive or the management system set out in Annex V to that Directive.
2. For the purposes of conformity assessment pursuant to Article 8 of Directive 2009/125/EC, the technical documentation file shall contain a copy of the calculations set out in Annex II to this Regulation.
3. Where the information included in the technical documentation for a particular model has been obtained:
 - (a) from a model that has the same technical characteristics relevant for the technical information to be provided but is produced by a different manufacturer, or
 - (b) by calculation on the basis of design or extrapolation from another model of the same or a different manufacturer, or both.

The technical documentation shall include the details of such calculation, the assessment undertaken by the manufacturer to verify the accuracy of the calculation and, where appropriate, the declaration of identity between the models of different manufacturers.

The technical documentation shall include a list of all equivalent models, including the model identifiers.

3. The technical documentation shall include the information in the order and as set out in Annex VI of Regulation (EU) 2019/XXX [OP - Please insert here references of the energy labelling regulation on household tumble driers]. For market surveillance purposes, manufacturers, importers or authorised representatives may, without prejudice to point 2(g) of Annex IV to Directive 2009/125/EC, refer to the technical documentation uploaded to the product database which contains the same information laid down in Regulation (EU) 2019/XXX [OP - Please insert here references of the energy labelling regulation on household tumble driers].

Article 5

Verification procedure for market surveillance purposes

Member States shall apply the verification procedure described in Annex III to this Regulation when performing the market surveillance checks referred to in Article 3(2) of Directive 2009/125/EC for compliance with requirements set out in Annex I to this Regulation.

Article 6

Circumvention

The manufacturer, importer or authorised representative shall not place on the market products designed to be able to detect they are being tested (e.g. by recognising the test conditions or test cycle), and to react specifically by automatically altering their performance during the test with

the aim of reaching a more favourable level for any of the parameters declared by the manufacturer, importer or authorised representative in the technical documentation or included in any documentation provided.

The energy consumption of the product and any of the other declared parameters shall not deteriorate after a software or firmware update when measured with the same test standard originally used for the declaration of conformity, except with explicit consent of the end-user prior to the update. No performance change shall occur as a result of rejecting the update.

A software update shall never have the effect of changing the product's performance in a way that makes it non-compliant with the ecodesign requirements applicable for the declaration of conformity.

Article 7 **Benchmarks**

The benchmarks for best-performing household tumble driers available on the market at the time of entry into force of this Regulation are set out in Annex IV.

Article 8 **Revision**

The Commission shall review this Regulation in the light of technological progress and shall present the results of this review, including, if appropriate, a draft revision proposal, to the Consultation Forum by *[OP – please insert date - 6 years after its entry into force]*.

The review shall in particular assess on the following:

- a) the improvement potential with regard to energy and environmental performance of household tumble driers;
- b) the evolution of consumer behaviour and the feasibility of a mandatory feedback mechanism on the loading of the appliance and the energy consumption of the selected programme;
- c) the effectiveness of existing requirements on resource efficiency;
- d) the appropriateness of setting additional resource efficiency requirements for products in accordance with the objectives of the circular economy, including the availability of additional spare parts;

Article 9 **Amendment to Regulation (EU) No 1275/2008**

In point 1 of Annex I to Regulation (EC) No 1275/2008:

- the entry 'Clothes dryers' is deleted;
- the entry 'Other appliances for cooking and other processing of food, cleaning, and maintenance of clothes' is replaced by 'Other appliances for cooking and other processing of food, cleaning and maintenance of clothes with the exception of household tumble driers'.

Article 10 **Repeal**

Regulation (EU) No 932/2012 is repealed as of **1 June 2024**

Article 11

Entry into force and application

This Regulation shall enter into force on the twentieth day following that of its publication in the Official Journal of the European Union.

It shall apply from **1 June 2024**. However, Article 6, first paragraph shall apply from *[OP – please insert the day of entry into force of this Regulation]*.

This Regulation shall be binding in its entirety and directly applicable in all Member States.

Done at Brussels,

DRAFT

Brussels, **XXX**
[...] (2019) **XXX** draft
ANNEXES 1 to 5

ANNEXES
to the
COMMISSION REGULATION (EU) .../...

**laying down ecodesign requirements for household tumble driers pursuant to Directive
2009/125/EC of the European Parliament and of the Council, amending Commission
Regulation (EC) No 1275/2008**

and repealing Commission Regulation (EU) 932/2012

ANNEX I

Definitions applicable for the annexes

For the purpose of the annexes, the following definitions shall apply:

- (1) 'Energy Efficiency Index' means the ratio of the weighted energy consumption to the standard drying cycle energy consumption
- (2) 'drying cycle' means a complete drying process, as defined by the required programme, consisting of a series of different operations including heating and tumbling;
- (3) 'programme duration' means the length of time beginning with the initiation of the programme selected, excluding any user programmed delay, until an end of programme indicator is activated and the user has access to the load;
- (4) 'rated capacity' means the maximum mass in kilograms, stated by the manufacturer importer or authorised representative at 0,5 kg intervals of dry textiles of a particular type, which can be treated in one drying cycle of a household tumble drier on the selected programme, when loaded in accordance with the manufacturer's instructions;
- (5) 'partial load' means half of the rated capacity of a household tumble drier for a given programme;
- (6) 'condensation efficiency' means the ratio between the mass of moisture condensed by a condenser tumble drier and the mass of moisture removed from the load at the end of a cycle;
- (7) 'initial moisture content' means for household tumble driers the amount of moisture contained in the load at the beginning of the drying phase;
- (8) 'remaining moisture content' means for household tumble driers, the amount of moisture contained in the load at the end of the drying cycle;
- (9) 'off mode' P_o means a condition in which the household tumble drier is connected to the mains and is not providing any function; the following shall also be considered as off mode:
 - (a) conditions providing only an indication of off mode;
 - (b) conditions providing only functionalities intended to ensure electromagnetic compatibility pursuant to Directive 2014/30/EU of the European Parliament and of the Council¹;
- (10) 'standby mode' (P_{sm}) means a condition where the household tumble drier is connected to the mains, and provides only the following functions, which may persist for an indefinite time:
 - (a) reactivation function, or reactivation function and indication of enabled reactivation function; and/or
 - (b) reactivation function through a connection to a network; and/or
 - (c) information or status display; and/or
 - (d) detection function for emergency measures;

¹ Directive 2014/30/EU of the European Parliament and of the Council of 26 February 2014 on the harmonisation of the laws of the Member States relating to electromagnetic compatibility (OJ L 96, 29.3.2014, p. 79).

- (11) 'network' means a communication infrastructure with a topology of links, an architecture, including the physical components, organisational principles, communication procedures and formats (protocols);
- (12) 'wrinkle guard function' means an operation of the household tumble drier after completion of a programme to prevent excessive wrinkle building in the laundry;
- (13) 'delay start' means a condition where the user has selected a specified delay to the beginning of the cycle of the selected programme;
- (14) 'spare part' means a separate part that can replace a part with the same or similar function in a product;
- (15) 'professional repairer' means an operator or undertaking which provides services of repair and professional maintenance of household tumble driers;
- (16) 'standard cotton programme' means the name of the programme declared by the manufacturer, importer or authorised representative as to be able to dry cotton laundry with an initial moisture content of the load of 60 % up to a remaining moisture content of the load of 0 %, and to which ecodesign requirements relate;
- (17) 'programme' means a series of operations that are pre-defined and which are declared by the manufacturer, importer or authorised representative as suitable for drying certain types of textile.

ANNEX II
Ecodesign requirements

1. PROGRAMME REQUIREMENTS

From **1 June 2024** household tumble driers shall meet the following requirements:

- (1) Household tumble driers shall provide a drying programme called 'standard cotton programme' which is able to dry cotton laundry from an initial moisture content of the load of 60 % to a remaining moisture content of the load of 0 %.

This programme shall be clearly identifiable on the programme selection, on the display and through the network connection, depending on the functionalities provided by the household tumble drier.

- (2) For the requirements set out in points 2, 3 and 4 the 'standard cotton programme' shall be used.
- (3) The 'standard cotton programme' shall be named 'standard cotton programme' on the programme selection, on the display and through the network connection, depending on the functionalities provided by the household tumble drier.

The name 'standard cotton programme' shall be used exclusively for this programme. The formatting of 'standard cotton programme' is not restricted in terms of font, font size, case sensitivity or colour. No other programme may have in its name the term 'standard'.

The 'standard cotton programme' shall be set as the default programme for automatic programme selection or any function maintaining the selection of a programme; or, if there is no automatic programme selection, shall be available for direct selection without the need for any other selection such as a specific time or load.

2. ENERGY EFFICIENCY REQUIREMENTS

From **1 June 2024** household tumble driers shall meet the following requirements:

- (1) The energy efficiency index (EEI) shall not be higher than 96.

The energy efficiency index (EEI) is calculated in accordance with Annex III.

3. FUNCTIONAL REQUIREMENTS

- (1) For condenser household tumble driers the weighted condensation efficiency shall not be lower than 80 %.

The weighted condensation efficiency is calculated in accordance with Annex III.

4. LOW POWER MODES

From **1 June 2024** household tumble driers shall meet the following requirements:

- (1) Household tumble driers shall have an off-mode or a standby mode or both. The power consumption of these modes shall not exceed 0,50 W.
- (2) If the standby mode includes the display of information or status, the power consumption of this mode shall not exceed 1,00 W.
- (3) If the standby mode provides for a connection to a network and provides networked standby as defined in Commission Regulation (EU) No 801/2013², the power consumption of this mode shall not exceed 2,00 W.
- (4) At the latest 15 minutes after the household tumble drier has been switched on or after the end of any programme and associated activities, or after interruption of the wrinkle guard function, or after any other interaction with the household tumble drier, if no other mode, including emergency measures, is triggered, the household tumble drier shall switch automatically to off-mode or standby mode.
- (5) If the household tumble drier provides for a delay start, the power consumption of this condition, including any standby mode, shall not exceed 4,00 W. The delay start shall not be programmable by the user for more than 24h.
- (6) Any household tumble drier that can be connected to a network shall provide the possibility to activate and deactivate the network connection(s). The network connection(s) shall be deactivated by default.

5. RESOURCE EFFICIENCY REQUIREMENTS

From **1 June 2022** household tumble driers shall meet the following requirements:

- (1) Availability of spare parts.
 - (a) Manufacturers, importers or authorised representatives of household tumble driers shall make at least the following spare parts available to professional repairers for a minimum period of ten years after placing the last unit of the model on the market:
 - pumps,
 - motors,
 - fans,
 - heating elements.
 - (b) Manufacturers, importers or authorised representatives of household tumble driers shall ensure that spare parts mentioned in point 1 can be replaced with the use of

² Commission Regulation (EU) No 801/2013 of 22 August 2013 amending Regulation (EC) No 1275/2008 with regard to ecodesign requirements for standby, off mode electric power consumption of electrical and electronic household and office equipment, and amending Regulation (EC) No 642/2009 with regard to ecodesign requirements for televisions (OJ L 225, 23.8.2013)

commonly available tools and without permanent damage to the household tumble drier.

- (c) The list of spare parts concerned by point (a) and the procedure for ordering them shall be publicly available on the free access website of the manufacturer, importer or authorised representative, at the latest two years after the placing on the market of the first unit of a model and until the end of the period of availability of these spare parts.

(2) Maximum delivery time of spare parts

During the period mentioned under (1), the manufacturer, importer or authorised representative shall ensure the delivery of the spare parts listed in (1)(a) within 15 working days after having received the order.

In the case of spare parts concerned by point (1)(a), the availability of spare parts may be limited to professional repairers registered in accordance with point (3)(a) and (b).

(3) Access to Repair and Maintenance Information

After a period of two years after the placing on the market of the first unit of a model and until the end of the period mentioned under (1), the manufacturer, importer or authorised representative shall provide access to the household tumble drier repair and maintenance information to professional repairers in the following conditions:

- (a) the manufacturer's, importer's or authorised representative's website shall indicate the process for professional repairers to register for access to information; to accept such a request, the manufacturers, importers or authorised representatives may require the professional repairer to demonstrate that
 - (i) the professional repairer has the technical competence to repair household washing machines and household washer-dryers and complies with the applicable regulations for repairers of electrical equipment in the Member States where it operates. Reference to an official registration system as professional repairer, where such system exists in the Member States concerned, shall be accepted as proof of compliance with this point;
 - (ii) the professional repairer is covered by insurance covering liabilities resulting from its activity regardless of whether this is required by the Member State.
- (b) The manufacturers, importers or authorised representatives shall accept or refuse the registration within 5 working days from the date of request;
- (c) Manufacturers, importers or authorised representatives may charge reasonable and proportionate fees for access to the repair and maintenance information or for receiving regular updates. A fee is reasonable if it does not discourage access by failing to take into account the extent to which the professional repairer uses the information.
- (d) Once registered, a professional repairer shall have access, within one working day after requesting it, to the requested repair and maintenance information. The

information may be provided for an equivalent model or model of the same family, if relevant.

(e) The household tumble drier repair and maintenance information referred to in (a) shall include:

- the unequivocal household tumble drier identification;
- a disassembly map or exploded view;
- technical manual of instructions for repair;
- list of necessary repair and test equipment;
- component and diagnosis information (such as minimum and maximum theoretical values for measurements);
- wiring and connection diagrams;
- diagnostic fault and error codes (including manufacturer-specific codes, where applicable); and
- instructions for installation of relevant software and firmware including reset software; and
- information on how to access data records of reported failure incidents stored on the household tumble drier (where applicable).

(4) Information requirements for refrigerant gases:

Without prejudice to Regulation (EU) No 517/2014 of the European Parliament and of the Council, for household tumble drier equipped with a heat pump, the chemical name of the refrigerant gas used, or equivalent reference such as a commonly used and understood symbol, label or logo, shall be displayed permanently and in a visible and readable way on the exterior of the household washing machines or household washer-dryers, for example on the back panel. More than one reference can be used for the same chemical name.

(5) Requirements for dismantling for material recovery and recycling while avoiding pollution.

Manufacturers, importers or authorised representatives shall ensure that household tumble driers are designed in such a way that the materials and components referred to in Annex VII to Directive 2012/19/EU can be removed with the use of commonly available tools.

Manufacturers, importers or authorised representatives shall fulfil the obligations laid down in Article 15, Point 1 of Directive 2012/19/EU.

6. INFORMATION REQUIREMENTS

From **1 June 2022** household tumble driers shall meet the following requirements.

User and installer instructions shall be provided in the form of a user manual on a free access website of the manufacturer, importer or authorised representative, and shall include:

(1) the following general information:

- (a) information that the ‘standard cotton programme’ is suitable to dry normal wet cotton laundry, and that this programme is used to assess the compliance with the EU Ecodesign legislation;
- (b) information that the ‘standard cotton programme’ is the most efficient programme in terms of energy consumption for drying wet cotton laundry;
- (c) information that the most efficient programmes in terms of energy consumption are generally those that perform at lower temperatures;
- (d) information that loading the household tumble drier up to the capacity indicated by the manufacturer for the respective programmes will contribute to energy savings;
- (e) information on how to activate and deactivate the network connection (if applicable) and impact on energy consumption;
- (f) instruction on how to find the model information stored in the product database, as defined in Commission Delegated Regulation (EU) [OP -Please insert regulation number energy labelling regulation for household tumble driers] by means of a weblink that links to the model information as stored in the product database or a link to the product database and information on how to find the model identifier on the product;

(2) values for the following parameters:

- (a) rated capacity in kg;
- (b) programme duration, expressed in hours and minutes;
- (c) energy consumption in kWh/cycle;
- (d) remaining moisture content after the drying cycle;

for each of the following programmes (at least)

- (i) ‘standard cotton programme’ at rated capacity and half of the rated capacity;
- (ii) synthetics normal dry at the rated capacity for this programme;
- (iii) delicates/wool drying at the rated capacity for this programme;
- (iv) cotton extra/very dry at rated capacity and half of the rated capacity;
- (v) cotton iron dry at rated capacity and half of the rated capacity;
- (vi) synthetics extra/very dry at the rated capacity for this programme;
- (vii) synthetics iron dry at the rated capacity for this programme; and.

the information that the values given for programmes other than the ‘standard cotton programme’ are indicative only.

(3) The user instructions shall also include instructions for the user to perform maintenance operations. Such instructions shall as a minimum include instructions for:

- (a) correct installation (including level positioning, connection to mains, connection to water outlet (if relevant), connection to gas (if relevant), installation of ventilation hose (if relevant);
- (b) cleaning of filters, including optimal frequency, and procedure, and main consequences of insufficient cleaning of filters;
- (c) emptying of water tank for condenser driers in case the tumble drier is not connected to water outlet;
- (d) periodic cleaning, including optimal frequency;
- (e) door opening between cycles, if appropriate;
- (f) identification of errors, the meaning of the errors, and the action required, including identification of errors requiring professional assistance;
- (g) how to access professional repair (internet webpages, addresses, contact details);

Such instructions shall also include information on:

- (h) any implications of self-repair or non-professional repair for the safety of the end-user and for the guarantee;
- (i) the minimum period during which the spare parts for the household tumble drier are available.

ANNEX III

Measurement methods and calculations

For the purposes of compliance and verification of compliance with the requirements of this Regulation, measurements and calculations shall be made using harmonised standards the reference numbers of which have been published for this purpose in the Official Journal of the European Union, or other reliable, accurate and reproducible methods, which take into account the generally recognised state-of-the-art, and in line with the following provisions.

The standard cotton programme shall be used for the measurement and calculation of the Energy Efficiency Index (EEI), Condensation Efficiency Index and the programme duration. The energy consumption, condensation efficiency and programme duration shall be measured concurrently.

The duration of the standard cotton programme at full load and at partial load is expressed in minutes and rounded to the nearest minute.

Airborne acoustical noise emissions are measured in dB(A) with respect to 1 pW and rounded to the nearest integer.

1. ENERGY EFFICIENCY INDEX

For the calculation of the energy efficiency index (EEI) of a household tumble drier model, the weighted average energy consumption per cycle of a household tumble drier for the standard cotton programme at full and partial load is compared to the standard energy consumption per cycle.

1.1. The energy efficiency index (EEI) is calculated as follows and rounded to one decimal place:

$$EEI = \frac{E_{tc}}{SE_C} \times 100$$

where:

- E_{tc} = weighted average energy consumption per cycle of the household tumble drier during active mode,
- SE_C = standard energy consumption per cycle of the household tumble drier.

1.2. The standard energy consumption per cycle (SE_C) is calculated in kWh as follows and rounded to two decimal places:

- for all household tumble driers that are not air-vented:

$$SE_C = 0,44 \times c^{0,75}$$

- for air-vented household tumble driers:

$$SE_C = 0,44 \times c^{0,75} - \left(1 - \frac{T_t}{60} \times 0,083\right)$$

where:

- c is the rated capacity of the household tumble drier for the standard cotton programme,
- T_t is the weighted programme time for the standard cotton programme.

1.3. The weighted average energy consumption per cycle (E_{tC}) is calculated in kWh as follows and rounded to two decimal places:

$$E_{tC} = 0,24 \times E_{dry} + 0,76 \times E_{dry^{1/2}}$$

where:

- E_{dry} = energy consumption of the standard cotton programme at full load, in kWh and rounded to two decimal places,
- $E_{dry^{1/2}}$ = energy consumption of the standard cotton programme at partial load, in kWh and rounded to two decimal places.

The weighted energy consumption for 100 cycles (E_{tC100}) is calculated in kWh as follows and rounded to 0 decimal places:

$$E_{tC100} = E_{tC} \times 100$$

where:

- E_{tC100} is the weighted energy consumption for 100 cycles of the household tumble drier.

1.4. The weighted programme time (T_t) for the standard cotton programme is calculated in minutes as follows and rounded to the nearest minute:

$$T_t = 0,24 \times T_{dry} + 0,76 \times T_{dry^{1/2}}$$

where:

- T_{dry} = programme time for the standard cotton programme at full load, in minutes and rounded to the nearest minute,
- $T_{dry^{1/2}}$ = programme time for the standard cotton programme at partial load, in minutes and rounded to the nearest minute.

1.5. For gas-fired household tumble driers, the energy consumption for the standard cotton programme at full and partial load is calculated in kWh, rounded to two decimal places, as:

$$E_{dry} = \frac{Eg_{dry}}{f_g} + Eg_{dry,a}$$

$$E_{dry^{1/2}} = \frac{Eg_{dry^{1/2}}}{f_g} + Eg_{dry^{1/2},a}$$

where:

- Eg_{dry} = gas consumption of the standard cotton programme at full load, in kWh and rounded to two decimal places,
- $Eg_{dry^{1/2}}$ = gas consumption of the standard cotton programme at partial load, in kWh and rounded to two decimal places,
- $Eg_{dry,a}$ = auxiliary electricity consumption of the standard cotton programme at full load, in kWh and rounded to two decimal places,
- $Eg_{dry^{1/2},a}$ = auxiliary electricity consumption of the standard cotton programme at partial load, in kWh and rounded to two decimal places,
- $f_g = 2,1$.

2. WEIGHTED CONDENSATION EFFICIENCY

The condensation efficiency of a programme is the ratio between the mass of moisture condensed and collected in the container of a condenser household tumble drier and the mass of moisture removed from the load by the programme, the latter being the difference between the mass of the wet test load before drying and the mass of the test load after drying. For calculating the weighted condensation efficiency, the average condensation efficiency of the standard cotton programme at both full and partial load is considered.

The weighted condensation efficiency (C_t) of a programme is calculated as a percentage and rounded to the nearest whole percent as:

$$C_t = 0,24 \times C_{dry} + 0,76 \times C_{dry^{1/2}}$$

where:

- C_{dry} = average condensation efficiency of the standard cotton programme at full load,
- $C_{dry^{1/2}}$ = average condensation efficiency of the standard cotton programme at partial load.

The average condensation efficiency C is calculated from the condensation efficiencies of test runs and expressed as a percentage:

$$C = \frac{1}{(n-1)} \sum_{j=2}^n \left(\frac{W_{Wj}}{W_i - W_f} \times 100 \right)$$

where:

- n is the number of test runs, comprising at least four valid test runs for the selected programme,

- j is the test run number,
- W_{wj} is the mass of water collected in the condenser reservoir during test run j ,
- W_i is the mass of the wet test load before drying,
- W_f is the mass of the test load after drying.

3. LOW POWER MODES

The power consumption of the off mode (P_o), standby mode (P_{sm}), networked standby mode (P_{nsm}), and where applicable delay start (P_{ds}) are measured. The measured values are expressed in W and rounded to two decimal places.

During measurements of the power consumption in low power modes, the following shall be checked and recorded:

- the display or not of information;
- the activation or not of a network connection.

If the household tumble drier provides for a wrinkle guard function, this operation shall be interrupted by opening the household tumble drier's door, or any other appropriate intervention 15 minutes before the measurement of energy consumption.

4. ACOUSTIC AIRBORNE NOISE EMISSION

The acoustic airborne noise emission of the drying phase of household tumble driers shall be calculated for the standard cotton programme at full load, using harmonised standards the reference numbers of which have been published for this purpose in the *Official Journal of the European Union*, or other reliable, accurate and reproducible methods, which take into account the generally recognised state-of-the-art, and rounded to the nearest integer.

ANNEX IV

Verification procedure for market surveillance purpose

The verification tolerances defined in this Annex relate only to the verification of the declared parameters by Member State authorities and shall not be used by the manufacturer, importer or authorised representatives as an allowed tolerance to establish the values in the technical documentation or in interpreting these values with a view to achieving compliance or to communicate better performance by any means.

Where a model has been designed to be able to detect it is being tested (e.g. by recognizing the test conditions or test cycle), and to react specifically by automatically altering its performance during the test with the objective of reaching a more favourable level for any of the parameters specified in this Regulation or included in the technical documentation or included in any of the documentation provided, the model and all equivalent models shall be considered not compliant.

When verifying the compliance of a product model with the requirements laid down in this Regulation pursuant to Article 3(2) of Directive 2009/125/EC, for the requirements referred to in this Annex, the authorities of the Member States shall apply the following procedure:

- (1) The Member State authorities shall verify one single unit of the model.
- (2) The model shall be considered to comply with the applicable requirements if:
 - (a) the values given in the technical documentation pursuant to point 2 of Annex IV to Directive 2009/125/EC (declared values), and, where applicable, the values used to calculate these values, are not more favourable for the manufacturer, importer or authorised representative than the results of the corresponding measurements carried out pursuant to paragraph (g) thereof; and
 - (b) the declared values meet any requirements laid down in this Regulation, and any required product information published by the manufacturer, importer or authorised representative does not contain values that are more favourable for the manufacturer or importer than the declared values; and
 - (c) when the Member State authorities check the unit of the model, they find that the manufacturer, importer or authorised representative has put in place a system that complies with the requirements in the second paragraph of Article 6; and
 - (d) when the Member State authorities check the unit of the model, it complies with the programme requirements in point 1, resource efficiency requirements in point 5 and information requirements in point 6 of Annex II; and
 - (e) when the Member State authorities test the unit of the model, the determined values (the values of the relevant parameters as measured in testing and the values calculated from these measurements) comply with the respective verification tolerances as given in Table 1.
- (3) If the results referred to in point (2)(a),(b), (c) or (d) are not achieved, the model and all equivalent models shall be considered not to comply with this Regulation.
- (4) If the result referred to in point (2)(e) is not achieved, the Member State authorities shall select three additional units of the same model for testing. As an alternative, the three additional units selected may be of one or more equivalent models.
- (5) The model shall be considered to comply with the applicable requirements if, for these three units, the arithmetical mean of the determined values complies with the respective verification tolerances given in Table 1.
- (6) If the result referred to in point (5) is not achieved, the model and all equivalent models shall be considered not to comply with this Regulation.
- (7) The Member State authorities shall provide all relevant information to the authorities of the other Member States and to the Commission without delay after a decision being taken on the non-compliance of the model according to points (3) or (6).

The Member State authorities shall use the measurement and calculation methods set out in Annex III.

The Member State authorities shall only apply the verification tolerances that are set out in Table 1 and shall use only the procedure described in points 1 to 7 for the requirements referred to in this Annex. For the parameters in table 1 no other tolerances, such as those set out in harmonised standards or in any other measurement method, shall be applied.

Table 1 - Verification tolerances

Parameter	Verification tolerances
E_{dry} and $E_{dry/2}$	The determined value* shall not exceed the declared value of E_{dry} and $E_{dry/2}$ by more than 6 %.
$E_{g,dry}$ and $E_{g,dry/2}$	The determined value* shall not exceed the declared value of $E_{g,dry}$ and $E_{g,dry/2}$ by more than 6 %.
$E_{g,dry,a}$ and $E_{g,dry/2,a}$	The determined value* shall not exceed the declared value of $E_{g,dry,a}$ and $E_{g,dry/2,a}$ by more than 6 %.
Weighted average energy consumption per cycle (E_{tC})	The determined value* shall not exceed the declared value of E_t by more than 6 %.
Weighted condensation efficiency (C_t)	The determined value* shall not be less than the declared value of C_t by more than 6 %.
T_{dry} and $T_{dry/2}$	The determined value* shall not exceed the declared value of T_{dry} and $T_{dry/2}$ by more than 6 %.
Weighted programme time (T_t)	The determined value* shall not exceed the declared values of T_t by more than 6 %.
Power consumption in off mode (P_o)	The determined value* of power consumption P_o shall not exceed the declared value by more than 0,10 W.
Power consumption in standby mode (P_{sm})	The determined value* of power consumption P_{sm} shall not exceed the declared value by more than 10 % if the declared value is higher than 1,00 W, or by more than 0,10 W if the declared value is lower than or equal to 1,00 W.
Power consumption in delay start mode (P_{ds})	The determined value* of power consumption P_{ds} shall not exceed the declared value by more than 10 % if the declared value is higher than 1,00 W, or by more than 0,10 W if the declared value is lower than or equal to 1,00 W.

Airborne acoustical noise emissions	The determined value* shall not exceed the declared value by more than 2 dB re 1 pW.
-------------------------------------	--

* In the case of three additional units tested as prescribed in point 4, the determined value means the arithmetical mean of the values determined for these three additional units.

DRAFT

ANNEX V
Benchmarks

At the time of entry into force of this Regulation, the best available technology on the market for household tumble driers, in terms of their energy consumption, cycle time, and airborne acoustical noise emissions during drying for the standard cotton programme, is identified as follows:

- (1) Condenser heating element household tumble drier with a rated capacity of 7 kg:
 - (a) energy consumption: 3.07 kWh/cycle for the standard cotton cycle (*)
 - (b) cycle time: 89 minutes for the standard cotton cycle (*)
 - (c) airborne acoustical noise emissions: 66 dB(A)
- (2) Condenser heat pump household tumble drier with a rated capacity of 7 kg:
 - (d) energy consumption: 0.95 kWh/cycle for the standard cotton cycle (*)
 - (e) cycle time: 124 minutes for the standard cotton cycle (*)
 - (f) airborne acoustical noise emissions: 66 dB(A)
- (3) Air-vented heating element household tumble drier with a rated capacity of 7 kg:
 - (g) energy consumption: 2.91 kWh/cycle for the standard cotton cycle (*)
 - (h) cycle time: 98 minutes for the standard cotton cycle (*)
 - (i) airborne acoustical noise emissions: 69 dB(A)
- (4) Air-vented gas fired household tumble drier with a rated capacity of 7 kg:
 - (j) energy consumption: 1.38 kWh/cycle for the standard cotton cycle (*)
 - (k) cycle time: 94 minutes for the standard cotton cycle (*)
 - (l) airborne acoustical noise emissions: 62 dB(A)

(*) Calculated based on a weighted average between 3 cycles at full load (at the rated capacity), and 4 cycles at 50% of the rated capacity.