DRAFT ANNEXES

OF

COMMISSION REGULATION (EU) …/…

implementing Directive 2009/125/EC of the European Parliament and of the Council with regard to ecodesign requirements for household washing machines and household washer-dryers

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 discussions and may contain confidential and/or privileged material.

ANNEX I

Ecodesign requirements

1. GENERIC ECODESIGN REQUIREMENTS FOR HOUSEHOLD WASHING MACHINES AND FOR THE WASHING PROCESS OF HOUSEHOLD WASHER-DRYERS

From [1 December 2020],

(1) Household washing machines and the washing process of household washer-dryers shall offer to end-users:

(a) a washing cycle which cleans normally soiled cotton laundry that is declared on the textile label to be washable at 60 °C. This programme shall be indicated as 'cotton 60 °C'.

(b) a washing cycle which is able to clean normally soiled cotton laundry declared to be washable at 40 °C or 60 °C, together in the same cycle. This programme shall be indicated as 'cotton 40 °C'. The name 'cotton 40 °C' shall be used exclusively for this programme. Other programme indications displayed together with the term '40 °C' for normally soiled cotton laundry declared to be washable at 40 °C and 60 °C such as ‘normal’, ‘daily’ or ‘standard’ that could divert the end user from using 'cotton 40 °C' shall not be used. Only in those cases where the programme has a better performance than the 'cotton 40°C' programme additional indications can be displayed.

(c) a washing cycle at 20 °C.

These cycles shall be clearly identifiable on the programme selection device or the display or the network-connection application, if any, or all of them, of the household washing machine or household washer-dryer.

(2) For the purpose of calculating the energy efficiency index, water consumption, programme time and acoustic airborne noise emissions for household washing machines and for the washing process of household washer-dryers, the 'cotton 40 °C' programme cycle shall be used.

This programme shall be clearly identifiable on the programme selection device(s) of the household washing machine or the household washing machine display or the network-connection application, if any.

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

(a) for the main washing programmes at full load and/or partial loads, and for the ‘cotton 40 °C’ programme for full load, half load and quarter load, the indicative information on the following parameters per cycle shall be provided:

i. programme time, expressed in hours: minutes;
ii. energy consumption, expressed in kWh/cycle;
iii. water consumption, expressed in litres/cycle;

iv. maximum temperature reached in the laundry core, expressed in degrees centigrade and for the "cotton 60 °C" the time during which this temperature is maintained;
v. remaining moisture content after cycle finalisation, expressed in percentage of water content.

(b) information that the ‘cotton 40 °C’ programme is able to clean normally soiled cotton laundry declared to be washable at 40 °C or 60 °C, together in the same cycle, and that this programme is the standard for testing. The most efficient programmes in terms of energy and water consumption are those that perform at lower temperatures and longer duration;

(c) information that loading the machine up to the capacity indicated by the manufacturer for the respective programmes will contribute to energy and water savings;

(d) recommendations on the type of detergents suitable for the various washing temperatures and washing programmes;

(e) information on the power consumption of the low-power modes (left-on mode, off mode and any mode before the starting of the washing cycle including the delay start mode).

(4) Moreover, the booklet of instructions shall contain instructions for the user to perform maintenance operations for the purpose of ensuring durability and repair, in addition to any instructions automatically delivered by the appliance when equipped with this feature. Such maintenance instructions shall as a minimum include instructions for:

(a) correct installation (including removal of transport screws when applicable, level positioning, connection to mains, connection to hot or cold water inlets).

(b) correct loading of household laundry and consequences of incorrect loading.

(c) correct dosage of detergent and additives, such as softeners and consequences of inadequate dosage.

(d) energy and water saving, including programme and sub-programme option selection.

(e) foreign object removal from the appliance.

(f) periodical cleaning, including optimal frequency, and procedure.

(g) door opening between cycles, if applicable.

(h) periodical checks of filters, including optimal frequency, and procedure.

(i) identification of errors, the meaning of the errors, and the action required, including identification of errors requiring professional assistance.

(j) access to professional repair (internet webpages, addresses, contact details).

(k) implications of self-repair or non-professional repair for the legal guarantee [*reference to the Consumer Sales and Guarantee Directive may be needed*], and when applicable, also for the commercial guarantee.

(l) Information on the period during which or the date until which the spare parts necessary for the use of the household washing machine are available.

The requirements under (3) and (4) above are without prejudice that at the point of sale, further information may be added, complementing or adapting to local conditions the information contained in the booklet.

2. GENERIC ECODESIGN REQUIREMENTS FOR HOUSEHOLD WASHER-DRYERS

From [1 December 2020],

For the calculation of the energy consumption and other parameters for household washer-dryers in a complete washing and drying cycle, the appliance shall offer to end-users a complete operation cycle for cotton laundry, be it continuous or segmented, where the washing cycle of the complete operation cycle is a 'cotton 40C' cycle as defined in point 1 of Annex I and the drying cycle achieves the 'cupboard dry' status (at the end of this complete operation cycle the laundry shall be dried to a remaining moisture content of the load of 0 %). If the household washer-dryer offers continuous complete operation cycles, the ‘cupboard dry cotton' cycle shall be selected automatically.

This cycle shall be clearly identifiable on the programme selection device(s) of the household washer-dryer or the household washer-dryer display or the network-connection application, if any, or all of them, and indicated as ‘cupboard dry cotton' cycle

(1) The booklet of instructions provided by the manufacturer shall provide, in addition to the requirements of point 1.(3) of Annex I:

(a) for the main complete operation cycles at full load, and for the ‘cupboard dry cotton’ cycle also for half load, the indicative information on the following parameters per cycle shall be provided:

i. programme time, expressed in hours: minutes;
ii. energy consumption, expressed in kWh/cycle/kg;
iii. water consumption, expressed in litres/cycle;
iv. maximum temperature reached in the laundry core, expressed in degrees centigrade;
v. remaining moisture content after cycle finalisation, expressed in percentage of water content.

(b) Information that the ‘cupboard dry cotton’ cycle able to wash and dry normally soiled cotton laundry declared to be washable at 40 °C or 60 °C, together in the same cycle, and that this cycle the standard for testing optimized programme. The most efficient programmes in terms of energy and water consumption are those that perform at lower temperatures and longer durations;

(c) information that loading the machine up to the capacity indicated by the manufacturer for the respective cycles will contribute to energy and water savings;

(d) Information on the power consumption of the low-power modes (left-on mode, off mode and any mode before the starting of the washing cycle including the delay start mode).

(2) Moreover, the booklet of instructions shall also cover for the complete operation cycle and the drying cycle of a household washer-dryer the requirements set in point 1.1.4 of this annex.

The requirements under (1) and (2) above are without prejudice that at the point of sale, further information may be added complementing or adapting to local conditions the information contained in the booklet.

3. ADDITIONAL GENERIC REQUIREMENTS ON THE REPAIR AND END-OF-LIFE ASPECTS OF HOUSEHOLD WASHING MACHINES AND HOUSEHOLD WASHER-DRYERS

From [1 December 2020], household washing machines and household washer-dryers shall be provided with the following information:

(1) Information requirements for refrigeration gases

Manufacturers of household washing machines and household washer-dryers equipped with a heat pump shall mark clearly on the back panel of the appliances the chemical name of the principal component of the refrigerant gas used.

(2) Requirements for dismantling for the purpose of avoiding pollution and for material recovery and recycling of the household washing machine and household washer-dryer

Manufacturers shall ensure that household washing machines and household washer-dryers are designed so that the access to and the extraction of the following components (when present) must be possible without proprietary or not commonly available tools:

- Printed circuit boards (larger than 10 cm^2);
- Electrolyte capacitors containing substances of concern (height > 25 mm, diameter > 25 mm or proportionately similar volume);
- Liquid crystal displays (larger than 100 cm^2);
- Batteries;
- Heat pumps.

Accessing components shall be facilitated by documenting the sequence of dismantling operations needed to access the targeted components, including for each of these operations, the type and the number of fastening techniques(s) to be unlocked, and tool(s) required.

(3) Spare part availability

Information issued by the manufacturer or importer of household washing machines and household washer-dryers to the retailer, on the period during which or the date until which the spare parts necessary for the repair of the appliance are available, shall be shown on any commercial document accompanying the sale of the appliance. The minimum period during which the spare parts for household dishwashers are available shall be seven years, counting from the production date of the machine.

Such information shall be disclosed to the consumer by the retailer, visibly and legibly, before concluding the sale, in the booklet of instructions, as stated in point 1(4) of this Annex.

(4) Spare part maximum delivery time

Until the date or during the period declared in application of point 3 of this Annex, the manufacturer or importer shall supply the spare parts necessary for the repair of the household washing machine and household washer-dryer within three weeks to retailers, to repairers, or directly to consumers.

(5) Access to Repair and Maintenance Information

1. Manufacturers' obligations

Manufacturers shall provide unrestricted access to appliance repair and maintenance information to independent operators through websites or other easily accessible means of information using a standardised format for requesting and accessing the information, in a manner which is non-discriminatory compared to the provision given or access granted to authorised retailers and repairers. With a view to facilitating the achievement of this objective, the information shall be provided consistently and continuously.

The appliance repair and maintenance information referred to in the previous paragraph shall include:

(a) an unequivocal appliance identification;

(b) a disassembly map and exploded view;

(c) technical manuals;

(d) component and diagnosis information (such as minimum and maximum theoretical values for measurements);

(e) wiring and connection diagrams;

(f) diagnostic trouble codes (including manufacturer specific codes);

(g) information concerning, and delivered by means of, proprietary tools and equipment; and

(h) data record information.

Authorised retailers or repairers within the distribution system of a given appliance manufacturer shall be regarded as independent operators for the purposes of this Regulation to the extent that they provide repair or maintenance services for appliances in respect of which they are not members of the appliance manufacturer's distribution system.

The information on diagnostic tools, repair and test equipment necessary for the appliance repair shall be provided by the manufacturer or importer on a non-discriminatory basis to any repairer and for any requested component, diagnostic tools or test equipment.

2. Fees for access to appliance repair and maintenance information

Manufacturers may charge reasonable and proportionate fees for access to household dishwasher's repair and maintenance information covered under point

5(1). A fee is not reasonable or proportionate if it discourages access by failing to take into account the extent to which the independent operator uses it.

Manufacturers shall make available appliance repair and maintenance information on a daily, monthly, and yearly basis, with fees for access to such information that may vary in accordance with the respective periods of time for which access is granted.

4. SPECIFIC ECODESIGN REQUIREMENTS HOUSEHOLD WASHING MACHINES AND THE WASHING PROCESS OF HOUSEHOLD WASHER-DRYERS

Household washing machines and the washing process of household washer-dryers shall comply with the following requirements:

(1) From [1 December 2020], the temperature measured in °C in the laundry core, has to reach as minimum and irrespective of the load
- 45 °C for the 'cotton 60 °C' cycle,
- 30 °C for the 'cotton 40 °C' cycle at least for 5 minutes.

(2) From [1 December 2020] the EEI for household washing machines and the washing process of household washer-dryers shall be lower than 135

(3) From [1 December 2024] the EEI for household washing machines and the washing process of household washer-dryers shall be lower than 105

(4) From [1 December 2020] :

Washing performance:
— for household washing machines with a rated capacity higher than 3 kg, the Washing Efficiency Index (I_w) for each individual cycle tested shall be greater than 1.03,

Water consumption:
— for all household washing machines, the Water Consumption (W_t, litres/cycle) shall be:

$$W_t \leq 5 \times c_{1/2} + 35$$

where $c_{1/2}$ is half of the rated washing capacity of the household washing machine for the 'cotton 40 °C' programme.

Low-power modes:
— for all household washing machines, the power consumption of the 'left-on mode' or any other condition of the washing machine after finalisation of the cycle shall not exceed 1,00 W.
— for all household washing machines, the duration of the 'left-on mode' or any other condition of the washing machine after finalisation of the cycle shall not exceed 20 minutes, after which the power management function shall revert the machine automatically to off-mode.

— for all household washing machines, the power consumption of the 'off mode' shall not exceed 0.50 W
— for all household washing machines, the power consumption of any mode before the initiation of the washing cycle, including delay start, shall not exceed 2,00 W

The Washing Efficiency Index (I_w) and the Water Consumption (W_t) of the household washing machine are calculated in accordance with Annex II.

5. SPECIFIC ECODESIGN REQUIREMENTS FOR HOUSEHOLD WASHER-DRYERS

(1) From [1 December 2020]:

For household washer-dryers the energy consumption of a complete operating cycle using 'cotton 40 °C' programme with cupboard drying moisture level shall be less than 0.80 kWh/kg

(2) From [1 December 2022]:

a. For household washer-dryers the energy consumption of a complete operating cycle using 'cotton 40 °C' programme with cupboard drying moisture level shall be less than 0.70 kWh/kg

(3) From [1 December 2020]:

Washing performance:

— for household washer dryers, the Washing Efficiency Index (I_w) for each individual cycle tested shall be greater than 1.03,

Water consumption

a. for all household washer-dryers, the Water Consumption (W_t, litres/cycle) of the continuous operation cycle shall be:

$$W_t \leq 12 \times c + 35$$

where c is the rated capacity of the continuous operation cycle or the segmented operation cycle of the household washer-dryer, whichever is the lowest.

Low-power modes

a. for all household washer-dryers, the power consumption of the 'left-on mode' or any other condition of the washer-dryer after finalisation of any cycle shall not exceed 1,00 W.
b. for all household washer-dryers, the duration of the 'left-on mode' or any other condition of the washer-dryers after finalisation of any cycle shall not exceed 20 minutes, after which the power management function shall revert the machine automatically to off-mode.

c. for all household washer-dryers, the power consumption of the 'off mode' shall not exceed 0,50 W.
d. for all household washer-dryers, the power consumption of any mode before the initiation of any drying or continuous washing-drying cycle shall not exceed 2,00 W.

The Washing Efficiency Index (I_w) and the Water Consumption (W_t) of the household washer-dryer are calculated in accordance with Annex II.

ANNEX II

Measurements

1. CALCULATION OF THE ENERGY EFFICIENCY INDEX

A. Energy Efficiency Index of household washing machines and the washing cycle of household washer-dryers

For the calculation of the Energy Efficiency Index (EEI) of a household washing machine model or the washing cycle of a household washer-dryer model, the weighted energy consumption of the 'cotton 40°C' programme at full and partial loads is compared to its standard energy consumption.

(a) The Energy Efficiency Index (EEI) is calculated as follows, and is rounded to one decimal place:

$$EEI = \frac{E_t}{SCE_c} \text{ x } 100$$

where:

E_t = weighted cycle energy consumption of the household washing machine or the washing cycle of the household washer-dryer;

SCE_C = standard cycle energy consumption of the household washing machine or the washing cycle of the household washer-dryer.

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

$$SCE_{c,\ 40C} = 0.08702\ x\ c + 0.18964$$

where:

c is the rated capacity of the household washing machine or the rated washing capacity of the washer-dryer for the cotton 40 °C programme.

(c) The weighted energy consumption (*Et)* is calculated in kWh per cycle as follows and rounded to three decimal places:

$$E_t = A\ x\ E_{t,40,full} + Bx\ E_{t,40,\frac{1}{2}load} + C\ x\ E_{t,40,\frac{1}{4}}$$

where

$E_{t,40,full}$ is the energy consumption of the cotton 40 °C programme at full rated washing capacity;

$E_{t,40,½}$ is the energy consumption of the cotton 40 °C programme at half rated washing capacity;

$E_{t,40,1/4}$ is the energy consumption of the cotton 40 °C programme at a quarter of the rated washing capacity;

A is the weighting loading factor for the full rated washing capacity;

B is the weighting loading factor for half of the rated washing capacity;

C is the weighting loading factor for a quarter of the rated washing capacity.

The values of the weighting loading factors are as follows:

Table 6. Weighting loading factors depending on the rated capacity of the washing machine

Rated capacity (kg)	A	B	C
c ≤ 5 kg	0,343	0,428	0,229
5 kg < c ≤ 10 kg	0,286	0,428	0,286
> 10 kg	0,229	0,428	0,343

B. Energy Efficiency Index of the complete operation cycle of household washer-dryers

For the calculation of the Energy Efficiency Index (C) of the complete operation cycle of a household washer-dryer, the energy consumption of the 'cotton 40 °C' programme in combination with a drying cycle to cupboard dry at full and half load is compared to the standard cycle energy consumption. Should the washer-dryer offer a continuous operation cycle, this shall be used. If not the segmented operation cycle shall be used.

(d) The Energy Efficiency Index (C) is calculated as follows and rounded to one decimal place:

$$C = \frac{E_t}{c}$$

where:

E_t is cycle energy consumption of the household washer-dryer;

c is the rated washing-drying capacity of a complete operation cycle or the rated drying capacity of a segmented operation cycle of the household washer-dryer.

(e) The weighted energy consumption (*Et)* is calculated in kWh per cycle as follows and rounded to three decimal places:

$$E_t = \frac{[3\ x\ E_{t,40,full} + 2\ x\ E_{t,40,\frac{1}{2}load}]}{5}$$

where:

$E_{t,40,full}$ is the energy consumption of the complete operation cycle ('cotton 40 °C' programme in combination with drying to cupboard dry) of a household washer-dryer, at rated washing-drying capacity; or at rated drying capacity if a segmented operation cycle is used;

$E_{t,40,½}$ is the energy consumption of the complete operation cycle ('cotton 40 °C' programme in combination with drying to cupboard dry) of a household washer-dryer, at half rated washing-drying capacity; or at half rated drying capacity if a segmented operation cycle is used.

2. CALCULATION OF THE WASHING EFFICIENCY INDEX

For the calculation of the Washing Efficiency Index (I_w), the weighted washing efficiency of the household washing machine for the 'cotton 40°C' programme at full, half and a quarter of the rated washing capacity and for the 'cotton 60 °C' programme at full load is compared to

the washing efficiency of a reference washing machine, where the reference washing machine shall have the characteristics indicated in the generally recognised state-of-the-art measurement methods, including methods set out in documents the reference numbers of which have been published for that purpose in the Official Journal of the European Union.

(a) The Washing Efficiency Index (I_w) of household washing machines is calculated as follows and rounded to three decimal places

$$I_w = \frac{\left[A\ x\ I_{w,40,full} + B\ x\ I_{W,40,\frac{1}{2}load} + C\ x\ I_{W,40,\frac{1}{4}load}\right]}{}$$

For the 'cotton 40°C' programme:

$I_{W,40,\ full}$ is the Washing Efficiency Index of the 'cotton 40°C' programme at rated washing capacity;

$I_{W,40,\ half}$ is the Washing Efficiency Index of the 'cotton 40°C' programme at half rated washing capacity;

$I_{W,40,\ quater}$ is the Washing Efficiency Index of the 'cotton 40°C' programme at a quarter of the rated washing capacity;

A, B and C are **the weighting loading factors as** described in Annex II(1).

For the 'cotton 60°C' programme:

$I_{W,60,\ full}$ is the Washing Efficiency Index of the 'cotton 60°C' programme at rated washing capacity;

(b) The Washing Efficiency Index of one testing cotton 40 °C programme (p) is calculated as follows:

$$I_{W,P} = \frac{1}{n} \times \sum_{i=1}^{n} \frac{W_{T,i}}{W_{R,a}}$$

where:

$W_{T,i}$ = Washing Efficiency of the household washing machine under test for one test cycle (i);

$W_{R,a}$ = average Washing Efficiency of the reference washing machine;

n = number of test cycles, : $n \geq 1$ for the 'cotton 60 °C' programme at rated washing capacity , $n \geq 2$ for the 'cotton 40 °C' programme at rated washing capacity, $n \geq 3$ for the 'cotton 40 °C' programme at half rated washing capacity, and $n \geq 2$ for the 'cotton 40 °C' programme at a quarter of rated washing capacity.

(c) The Washing Efficiency (W_T) is the reflectance values of each test strip after completion of a test cycle.

3. CALCULATION OF THE WEIGHTED WATER CONSUMPTION

(1) The weighted water consumption (W_t) of a household washing machine or the washing cycle of a household washer-dryer is calculated in litres and rounded to the nearest integer:

$$W_t = (A \times W_{t,40,full} + B \times W_{t,40,1/2} + C \times W_{t,40,1/4})$$

where:

$W_{t,40,\ full}$ is the water consumption of the 'cotton 40 °C' programme at rated washing capacity, in litres and rounded to one decimal place;

$W_{t,\ 40,\ ½\ load}$ is the water consumption of the 'cotton 40 °C' programme at half of the rated washing capacity, in litres and rounded to one decimal place;

$W_{t,\ 40,\ 1/4}$ is the water consumption of the 'cotton 40 °C' programme at a quarter of the rated washing capacity, in litres and rounded to one decimal place;

A, B and C are the weighting loading factors as described in Annex II(1).

(2) The weighted water consumption (W_t) of a complete operation cycle of a household washer-dryer is calculated as follows and rounded to the nearest integer:

$$W_t = \frac{[3 \times W_{t,40,full} + 2 \times W_{t,40,\frac{1}{2}load}]}{5}$$

where:

$W_{t,40,\ full}$ is the water consumption of the complete operation cycle of a household washer-dryer, the water consumption of the 'cotton 40 °C' programme in combination with drying to cupboard dry at full load, in litres and rounded to one decimal place;

$W_{t,\ 40,\ ½\ load}$ is the water consumption of the complete operation cycle of a household washer-dryer, the water consumption of the 'cotton 40 °C' programme in combination with drying to cupboard dry at full load, in litres and rounded to one decimal place.

4. CALCULATION OF THE REMAINING MOISTURE CONTENT

(1) The weighted remaining moisture content (D) of a household washing machine and the washing cycle of a household washer-dryer is calculated in percentage as follows and rounded to the nearest whole percent:

$$D_c = \frac{[A \times D_{t,40,full} + B \times D_{t,40,\frac{1}{2}load} + C \times D_{t,40,\frac{1}{4}load}]}{}$$

where:

$D_{t,\ 40\ full}$ is the residual moisture content for the 40°C cotton programme at rated washing capacity, in percentage and rounded to the nearest whole per cent;

$D_{t,\ 40\ 1/2load}$ is the energy consumption of the 40°C cotton programme at half rated washing capacity in percentage and rounded to the nearest whole per cent;

$D_{t,\ 40\ 1/4load}$ is the energy consumption of the 40°C cotton programme at a quarter of the rated washing capacity in percentage and rounded to the nearest whole per cent;

A, B and C are the weighting loading factors as described in Annex II(1).

(2) The weighted remaining moisture content (D) of a complete operation cycle of a household washer-dryer is calculated in percentage as follows and rounded to the nearest whole percent:

$$D_c = \frac{[3\ x\ D_{t,40,full} + 2\ x\ D_{t,40,\frac{1}{2}load}]}{5}$$

where:

$D_{t,40,\ full}$ is the residual moisture content for the complete operation cycle of a household washer-dryer of the 'cotton 40 °C' programme in combination with drying to cupboard dry at rated washing-drying capacity in percentage and rounded to the nearest whole per cent;

$D_{t,\ 40,\ ½\ load}$ is the residual moisture content for the complete operation cycle of a household washer-dryer of the 'cotton 40 °C' programme in combination with drying to cupboard dry at half rated washing-drying capacity in percentage and rounded to the nearest whole per cent.

5. CALCULATION OF THE DURATION OF THE LEFT-ON MODE

(1) The weighted duration of the left-on mode (t_l) of a household washing machine and the washing cycle of a household washer-dryer is calculated in minutes as follows and rounded to the nearest integer (minute):

$$t_l = \frac{[A\ x\ t_{l,40,full} + B\ x\ t_{l,40,\frac{1}{2}load} + C\ x\ t_{l,40,\frac{1}{4}load}]}{}$$

where:

$t_{l,\ 40\ full}$ is the duration of the left-on mode of the 40°C cotton programme at rated washing capacity , in minutes and rounded to the nearest minute;

$t_{l,\ 40\ 1/2load}$ is the duration of the left-on mode of the 40°C cotton programme at half rated washing capacity, in minutes and rounded to the nearest minute;

$t_{l,40\ 1/4load}$ is is the duration of the left-on mode of the 40°C cotton programme at a quarter of the rated washing capacity, in minutes and rounded to the nearest minute;

A, B and C are the weighting loading factors as described in Annex II(1).

(2) The weighted duration of the left-on mode (t_l) of a complete operation cycle of a household washer-dryer is calculated in watts as follows and rounded to the nearest integer:

$$t_l = \frac{[3\ x\ t_{l,40,full} + 2\ x\ t_{l,40,\frac{1}{2}load}]}{5}$$

where;

$t_{l,40,\ full}$ is the duration of the left-on mode of a household washer-dryer of the 'cotton 40 °C' programme in combination with drying to cupboard dry at rated washing drying capacity, in minutes and rounded to the nearest minute;

$t_{l,\ 40,\ ½\ load}$ is the duration of the left-on mode of a household washer-dryer of the 'cotton 40 °C' programme in combination with drying to cupboard dry at half rated washing drying capacity, in minutes and rounded to the nearest minute.

ANNEX III

Product compliance verification by market surveillance authorities

The verification tolerances defined in this Annex relate only to the verification of the measured parameters by Member State authorities and shall not be used by the manufacturer or importer 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.

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 or importer 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 or importer does not contain values that are more favourable for the manufacturer or importer than the declared values; and

(c) 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) or (b) are not achieved, the model and all models that have been listed as equivalent washing machine or washer-dryer models in the manufacturer's or importer's technical documentation shall be considered not to comply with this Regulation.

(4) If the result referred to in point 2(c) 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 different models that have been listed as equivalent models in the manufacturer's or importer's technical documentation.

(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 models that have been listed as equivalent washing machine or washer-dryer models in the manufacturer's or importer's technical documentation 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 and 6.

Member States' authorities shall use measurement procedures which take into account the generally recognised, state- of-the-art, reliable, accurate and reproducible measurement methods, including methods set out in documents whose reference numbers have been published for that purpose in the Official Journal of the European Union. The Member State authorities shall use the measurement and calculation methods set out in Annex II.

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. No other tolerances, such as those set out in harmonised standards or in any other measurement method, shall be applied.

Table 1

Measured parameter	**Verification tolerances**
Weighted energy consumption (E_t)	The determined value shall not exceed the declared value of E_t by more than 10 %. Where three additional units need to be selected, the arithmetic mean of the determined values of these three units shall not exceed the declared value of Et by more than 6 %.
Weighted water consumption (W_t)	The determined values shall not exceed the declared values of W_t by more than 10 %.
Washing efficiency index (I_W)	The determined value shall not be less than the declared value of I_W by more than 4 %.
Power consumption in off mode and left-on mode (P_o and P_l)	The determined values of power consumption P_o and P_l of more than 0.50 W shall not exceed the declared values of P_o and P_l by more than 10 %. The determined values of power consumption P_o and P_l of less than or equal to 0.50 W shall not exceed the declared values of P_o and P_l by more than 0.050 W.
Power consumption in modes before the initation of the cleaning programme (P_b)	The determined values of power consumption P_b of more than 1.00 W shall not exceed the declared values of P_b by more than 10%. The determined values of power consumption P_b of less than or equal to 1.00 W shall not exceed the declared values of P_b by more than 0.10W
Power consumption in networked-standby mode (P_n)	The determined values of power consumption P_n of more than 2.00 W shall not exceed the declared values of P_n by more than 10%. The determined values of power consumption P_n of less than or equal to 2.00 W shall not exceed the declared values of P_n by more than 0.20W
Duration of left-on mode (T_l)	The determined value shall not exceed the declared value of T_l by more than 10 %.

ANNEX IV

Indicative benchmarks

1. INDICATIVE BENCHMARKS FOR HOUSEHOLD WASHING MACHINES ON WATER AND ENERGY CONSUMPTION, WASHING EFFICIENCY AND AIRBORNE ACOUSTICAL NOISE EMISSIONS

At the time of entry into force of this Regulation, the best available technology on the market for household washing machines, in terms of their water and energy consumptions, washing efficiency and airborne acoustical noise emissions during washing/spinning for the standard 60 °C cotton programme at full and partial load and for the standard 40 °C cotton programme at partial load, is identified as follows[1]:

(1) Household washing machine with a rated capacity of 5 kg:

(a) energy consumption: 0.56 kWh/cycle (or 0.11 kWh/kg) corresponding to an overall annual consumption of 82 kWh/year;

(b) water consumption: 40 liters/cycle, corresponding to 8800 litres/year for 220 cycles;

(c) washing efficiency index of $1.03 \geq I_w > 1.00$;

(d) airborne acoustical emissions during washing/spinning: 58/82.

(2) Household washing machine with a rated capacity of 6 kg:

(a) energy consumption: 0.47 kWh/cycle (or 0.067 kWh/kg) corresponding to an overall annual consumption of 104 kWh/year;

(b) water consumption: 33 liters/cycle, corresponding to 7300 litres/year for 220 cycles;

(c) washing efficiency index of $1.03 \geq I_w > 1.00$;

(d) airborne acoustical emissions during washing/spinning: 52/73.

(3) Household washing machine with a rated capacity of 7 kg:

(a) energy consumption: 0.6 kWh/cycle (or 0.15 kWh/kg) corresponding to an overall annual consumption of 124 kWh/year;

(b) water consumption: 39 liters/cycle, corresponding to 8500 litres/year for 220 cycles;

(c) washing efficiency index of $1.03 \geq I_w > 1.00$;

(d) airborne acoustical emissions during washing/spinning: 52/73.

(4) Household washing machine with a rated capacity of 8 kg:

(a) energy consumption: 0.42 kWh/cycle (or 0.05 kWh/kg) corresponding to an overall annual consumption of 92.4 kWh/year;

[1] For evaluation of the water and energy consumptions and washing efficiency, the calculation methods set out in Annex II of Regulation 1015/2010 with regard to ecodesign requirements for household washing-machines was used; for airborne acoustical noise emissions during washing/spinning, the standard measurement according to EN 60704 was used.

(b) water consumption: 46 liters/cycle, corresponding to 10120 litres/year for 220 cycles;

(c) washing efficiency index of $1.03 \geq I_w > 1.00$;

(d) airborne acoustical emissions during washing/spinning: 48/73.

(5) Household washing machine with a rated capacity of 9 kg:

(a) energy consumption: 0.57 kWh/cycle (or 0.063 kWh/kg) corresponding to an overall annual consumption of 130 kWh/year;

(b) water consumption: 47 liters/cycle, corresponding to 10340 litres/year for 220 cycles;

(c) washing efficiency index of $1.03 \geq I_w > 1.00$;

(d) airborne acoustical emissions during washing/spinning: 52/73.

2. INDICATIVE BENCHMARKS FOR HOUSEHOLD WASHER-DRYERS ON WATER AND ENERGY CONSUMPTION, WASHING EFFICIENCY AND AIRBORNE ACOUSTICAL NOISE EMISSIONS

At the time of entry into force of this Regulation, the best available technology on the market for household washer-dryers, in terms of their water and energy consumptions, washing efficiency and airborne acoustical noise emissions during washing/spinning/drying for the standard 60 °C cotton washing cycle at full capacity and the 'dry cotton' drying cycle, is identified as follows[2]:

(1) Household washer dryer with a washing rated capacity of 6 kg:

(a) energy consumption of a complete cycle (washing, spinning and drying) at full load and at standard 60°C cotton programme: 4.08 kWh/cycle corresponding to an overall annual consumption of 898 kWh/year;

(b) energy consumption of a washing cycle (washing and spinning only) at full load and at standard 60°C cotton programme: 0.8 kWh/cycle corresponding to an overall annual consumption of176 kWh/year;

(c) water consumption of a complete cycle (washing, spinning and drying) at full load and at standard 60°C cotton programme: 79 liters/cycle, corresponding to 17380 litres/year for 220 cycles;

(d) washing efficiency index of $1.03 \geq I_w > 1.00$;

(e) airborne acoustical emissions during washing/spinning/drying : 47/73/58.

(2) Household washer dryer with a washing rated capacity of 7 kg:

(a) energy consumption of a complete cycle (washing, spinning and drying) at full load and at standard 60°C cotton programme: 4.76 kWh/cycle corresponding to an overall annual consumption of 1047kWh/year;

[2] For evaluation of the water and energy consumptions and washing performance, the calculation methods set out in Directive 96/60/EC with regard to energy labelling of washer-dryers was used; for airborne acoustical noise emissions during washing/spinning/drying, the standard measurement according to EN 60704 was used

(b) energy consumption of a washing cycle (washing and spinning only) at full load and at standard 60°C cotton programme: 0.8 kWh/cycle corresponding to an overall annual consumption of176 kWh/year;

(c) water consumption of a complete cycle (washing, spinning and drying) at full load and at standard 60°C cotton programme: 72 liters/cycle, corresponding to 15840 litres/year for 220 cycles;

(d) washing efficiency index of $1.03 \geq I_w > 1.00$;

(e) airborne acoustical emissions during washing/spinning/drying: 47/73/58.

(3) Household washer dryer with a washing rated capacity of 8 kg:

(a) energy consumption of a complete cycle (washing, spinning and drying) at full load and at standard 60°C cotton programme: 3.8 kWh/cycle corresponding to an overall annual consumption of 836 kWh/year;

(b) energy consumption of a washing cycle (washing and spinning only) at full load and at standard 60°C cotton programme: 1.04 kWh/cycle corresponding to an overall annual consumption of 229 kWh/year;

(c) water consumption of a complete cycle (washing, spinning and drying) at full load and at standard 60°C cotton programme: 70 liters/cycle, corresponding to 15400 litres/year for 220 cycles;

(d) washing efficiency index of $1.03 \geq I_w > 1.00$;

(e) airborne acoustical emissions during washing/spinning/drying: 49/73/66.

(4) Household washer dryer with a washing rated capacity of 9 kg:

(a) energy consumption of a complete cycle (washing, spinning and drying) at full load and at standard 60°C cotton programme: 3.67 kWh/cycle corresponding to an overall annual consumption of 807 kWh/year;

(b) energy consumption of a washing cycle (washing and spinning only) at full load and at standard 60°C cotton programme: 1.09 kWh/cycle corresponding to an overall annual consumption of 240 kWh/year;

(c) water consumption of a complete cycle (washing, spinning and drying) at full load and at standard 60°C cotton programme: 69 liters/cycle, corresponding to 15180 litres/year for 220 cycles;

(d) washing efficiency index of $1.03 \geq I_w > 1.00$;

(e) airborne acoustical emissions during washing/spinning/drying: 49/75/66.

3. INDICATIVE BENCHMARKS FOR HOUSEHOLD WASHING MACHINES AND HOUSEHOLD WASHER-DRYERS ON SPARE PARTS AVAILABILITY AND DELIVERABLE TIME OF SPARE PARTS

At the time of entry into force of this Regulation, the fastest delivery times of spare parts necessary for the use of the household washing machines and household washer-dryers are between 7 and 10 days. The longest availability of spare parts necessary for the use of the washing machines and household washer-dryers is around 11 years.

ANNEX V

Multi-drum washing machines

The provisions of points 1 to 4 of Article 3 of this Regulation are applicable to each of the drums of multi-drum washing machines, except when the drum only offers a reduced number of programmes compared to the other drums in the machine, and is thus not suited for the most commonly used programme cycles, including the textile types and programme cycles used for the determination of compliance according to Annex I of this Regulation.

The provisions of points 1 to 4 of Article 3 are applicable to each of the drums independently, except when the drums are built in the same casing and can only operate simultaneously in all programmes, in which case the provisions of points 1 to 4 of Article 3 are applicable to the multi-drum washing machine as a whole, as follows:

(a) the energy and water consumption of the overall washing machine should be evaluated as the total performance of all those drums (summing up rated capacity and considering overall energy);

(b) the Energy Efficiency Index (EEI) shall be calculated considering the overall rated capacity and energy consumption;

(c) the low power modes and noise declarations apply to the whole washing machine;

(d) the spinning performance is calculated as the weighted average, according to each drum load capacity;

(e) each drum shall comply individually and separately with minimum washing performance requirements according to individual load capacity of the drums.

ANNEX VI

List of energy-using products covered by Annex I, point 1 to Regulation (EC) No 1275/2008

1. Household appliances

Dishwashers

Clothes dryers

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