

Technical Regulation Laying Down Energy Labelling Requirements for Household Washing Machines and Household Washer-Dryers in Lebanon (November 2023)

Notes

This section shall be removed prior to the promulgation of this Technical Regulation!

The Regulation establishing a **framework** for the setting of Energy Labelling Requirements for Energy-related Products is presented in the **Overarching Policy** Document (Annex 2). It will be promulgated before or at the same time as this Technical Regulation, as it is a Regulatory Framework on which this Technical Regulation is based.

In order for this Technical Regulation to be effective, the competent authority shall complete or adapt or confirm or amend the following key information in the document:

- The proposed date of entry into force and enforcement schedule in Article 9;
- The EU Energy Labels provided in Annex 3 as examples only. (Lebanese Energy Labels could be designed considering similar design aspects.);
- The number of this Technical Regulation in Annex 3, (A, 1., 1.2, XII) and (B, 1., 1.1, XIII);
- The code colours of the National Flag of Lebanon in Annex 3, (A, 2., (f), 1) and (B, 2., (f), 1).
- The number of this Technical Regulation in Annex IV, 2nd paragraph and section 2;
- The number/date of this Technical Regulation in Annex V, Table 4;
- The proposed energy efficiency index for the different classes in Annex 2 section A.

Background

This document is a technical regulation establishing energy labelling requirements for Household Washing Machines and Household Washer-dryers in Lebanon. Considering the extensive experience with MEPS and labels implementation in the European Union, and its influence on the Lebanese market, this technical regulatory document is based on the Commission Delegated Regulation (EU) 2019/2014 of 11 March 2019.

Article 1 – Purpose and scope

- 1.1 This Technical Regulation establishes requirements for the labelling of, and the provision of supplementary product information on, electric mains-operated household washing machines and electric mains-operated household washer-dryers including built-in household washing machines and built-in household washer-dryers.
- 1.2 This Technical Regulation shall not apply to:
- (a) washing machines and washer-dryers which are classified as professional appliances;
 - (b) battery-operated household washing machines and battery-operated household washer-dryers that can be connected to the mains through an AC/DC converter purchased separately;
 - (c) household washing machines with a rated capacity lower than 2 kg and household washer-dryers with a rated washing capacity lower than or equal to 2 kg.

Article 2 – Legal Basis

This Regulation is based on the Regulation establishing a framework for the setting of Energy Labelling requirements for Energy related Products (ErPs).

Article 3 – Definitions

The following definitions shall apply for the purposes of this Technical Regulation:

- (3.1) ‘mains’ or ‘electric mains’ means the electricity supply from the grid of 230 ($\pm 10\%$) volts of alternating current at 50 Hz;
- (3.2) ‘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;
- (3.3) ‘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;
- (3.4) ‘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;
- (3.5) ‘built-in household washing machine’ means a household washing machine 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;
- (3.6) ‘built-in household washer-dryer’ means a household washer-dryer that is designed, tested and marketed exclusively:
 - to be installed in cabinetry or encased (top and/or bottom, and sides) by panels;
 - (a) to be securely fastened to the sides, top or floor of the cabinetry or panels; and
 - (b) to be equipped with an integral factory-finished face or to be fitted with a custom front panel;
- (3.7) ‘multi-drum household washing machine’ means a household washing machine equipped with more than one drum, whether in separate units or in the same casing;
- (3.8) ‘multi-drum household washer-dryer’ means a household washer-dryer equipped with more than one drum, whether in separate units or in the same casing;
- (3.9) ‘point of sale’ means a location where household washing machines or household washer-dryers, or both, are displayed or offered for sale, hire or hire-purchase.

For the purposes of the annexes, additional definitions are set out in Annex I.

Article 4 – Obligations of suppliers

4.1 Suppliers shall ensure that:

- (a) each household washing machine and household washer-dryer is supplied with a printed label in the format as set out in Annex 3 and, for a multi-drum household washing machine or a multi-drum household washer-dryer, in accordance with Annex 10;
- (b) the values of the parameters included in the product information sheet, as set out in Annex 5, are entered into the public part of the product database;
- (c) if specifically requested by the dealer of household washing machines and household washer-dryers, the product information sheet shall be made available in printed form;
- (d) the contents of the technical documentation, set out in Annex 6, is entered into the product database;
- (e) any visual advertisement for a specific model of household washing machine or household washer-dryer contains the energy efficiency class and the range of energy efficiency classes available on the label in accordance with Annex 7 and Annex 8;
- (f) any technical promotional material concerning a specific model of household washing machine or household washer-dryer, including on the internet, which describes its specific technical parameters includes the energy efficiency class of that model and the range of energy efficiency classes available on the label, in accordance with Annex 7;
- (g) an electronic label in the format and containing the information as set out in Annex 3 is made available to dealers for each model of household washing machine and of household washer-dryer;
- (h) an electronic product information sheet, as set out in Annex 5, is made available to dealers for each model of household washing machine and of household washer-dryer.

- 4.2 The energy efficiency class and the acoustic airborne noise emission class are defined in Annex 2 and shall be calculated in accordance with Annex 4.

Article 5 – Obligations of dealers

Dealers shall ensure that:

- (a) each household washing machine or household washer-dryer, at the point of sale, including at trade fairs, bears the label provided by suppliers in accordance with point 1(a) of Article 4, with the label being displayed for built-in appliances in such a way as to be clearly visible, and for all other appliances in such a way as to be clearly visible on the outside on the front or top of the household washing machine or household washer-dryer;
- (b) in the case of distance selling and sale through the internet, the label and product information sheet are provided in accordance with Annexes 7 and 8;
- (c) any visual advertisement for a specific model of household washing machine or household washer-dryer contains the energy efficiency class of that model and the range of energy efficiency classes available on the label, in accordance with Annex 7;
- (d) any technical promotional material concerning a specific model of household washing machine or household washer-dryer, including on the internet, which describes its specific technical parameters, includes the energy efficiency class of that model and the range of energy efficiency classes available on the label, in accordance with Annex 7.

Article 6 – Obligations of internet hosting platforms

Where a hosting service provider allows the direct selling of household washing machines or household washer-dryers through its internet website, the service provider shall enable the showing of the electronic label and electronic product information sheet provided by the dealer on the display mechanism in accordance with the provisions of Annex 8 and shall inform the dealer of the obligation to display them.

Article 7 – Measurement methods

The information to be provided pursuant to Articles 4 and 5 shall be obtained by reliable, accurate and reproducible measurement and calculation methods, which take into account the recognised state-of-the-art measurement and calculation methods set out in Annex 4.

Article 8 – Verification procedure for market surveillance purposes

The market surveillance authority shall apply the verification procedure laid down in Annex 9 when performing the market surveillance checks referred to in Regulation establishing a framework for the setting of energy labelling requirements for energy related products.

Article 9 – Entry into force and application

This Technical Regulation shall enter into force on, 2 January 2025 according to the following schedule:

- From 2 January 2025, only household washing machines with Energy Efficiency classes A to E and household washer-dryers with Energy Efficiency classes A to E for the washing cycle and for the complete cycle shall be allowed to be placed on the market or put into service.
- From 2 January 2026, only household washing machines with Energy Efficiency classes A to D and household washer-dryers with Energy Efficiency classes A to D for the washing cycle and for the complete cycle shall be allowed to be placed on the market or put into service.
- From 2 January 2027, only household washing machines with Energy Efficiency classes A to C and household washer-dryers with Energy Efficiency classes A to C for the washing cycle and for the complete cycle shall be allowed to be placed on the market or put into service.

This Technical Regulation shall be binding in its entirety and directly applicable.

Annex 1: Definitions applicable for the annexes

The following definitions shall apply:

- (1) *'Energy Efficiency Index (EEI)'* means the ratio of the weighted energy consumption to the standard cycle energy consumption;
- (2) *'programme'* means a series of operations that are pre-defined, and which are declared by the supplier as suitable for washing, drying or continuously washing and drying certain types of textile;
- (3) *'washing cycle'* means a complete washing process as defined by a selected programme, consisting of a series of different operations including washing, rinsing, and spinning;
- (4) *'drying cycle'* means a complete drying process as defined by the required programme, consisting of a series of different operations including heating and tumbling;
- (5) *'complete cycle'* means a washing and drying process, consisting of a washing cycle and a drying cycle;
- (6) *'continuous cycle'* means a complete cycle without interruption of the process and with no need for user intervention at any point during the programme;
- (7) *'quick response (QR)'* code means a matrix barcode included on the energy label of a product model that links to that model's information in the public part of the product database;
- (8) *'rated capacity'* means the maximum mass in kilogram stated by the supplier at 0.5 kg intervals of dry textiles of a particular type, which can be treated in one washing cycle of a household washing machine, or in one complete cycle of a household washer-dryer respectively, on the selected programme, when loaded in accordance with the supplier's instructions;
- (9) *'rated washing capacity'* means the maximum mass in kilogram stated by the supplier at 0.5 kg intervals of dry textiles of a particular type, which can be treated in one washing cycle of a household washing machine, or in one washing cycle of a household washer-dryer respectively, on the selected programme, when loaded in accordance with the supplier's instructions;
- (10) *'rated drying capacity'* means the maximum mass in kilogram stated by the supplier at 0.5 kg intervals of dry textiles of a particular type, which can be treated in one drying cycle of a household washer-dryer on the selected programme, when loaded in accordance with the supplier's instructions;
- (11) *'eco 40-60'* means the name of the programme declared by the supplier as able to clean normally soiled cotton laundry declared to be washable at 40 °C or 60 °C, together in the same washing cycle, and to which the information on the energy label and in the product information sheet relates;
- (12) *'rinsing effectiveness'* means the concentration of the residual content of linear alkylbenzene sulfonate (LAS) in the treated textiles after the washing cycle of a household washing machine or household washer-dryer (IR) or the complete cycle of a household washer-dryer (JR), expressed in gram per kilogram of dry textile;
- (13) *'weighted energy consumption (E_w)'* means the weighted average of the energy consumption of the washing cycle of a household washing machine or a household washer-dryer for the eco 40-60 programme at rated washing capacity, and at half and at a quarter of the rated washing capacity, expressed in kilowatt hour per cycle;
- (14) *'weighted energy consumption (E_{wd})'* means the weighted average of the energy consumption of the household washer-dryer for the wash and dry cycle at rated capacity and at half of the rated capacity, expressed in kilowatt hour per cycle;

- (15) *'standard cycle energy consumption (SCE)'* means the energy consumption taken as a reference, as a function of the rated capacity of a household washing machine or of a household washer-dryer, expressed in kilowatt hour per cycle;
- (16) *'weighted water consumption (W_w)'* means the weighted average of the water consumption of the washing cycle of a household washing machine or of a household washer-dryer for the eco 40-60 programme at rated washing capacity, and at half and at a quarter of the rated washing capacity, expressed in litre per cycle;
- (17) *'weighted water consumption (W_{wd})'* means the weighted average of the water consumption of a household washer-dryer for the wash and dry cycle at rated capacity and at half of the rated capacity, expressed in litre per cycle;
- (18) *'remaining moisture content'* means for household washing machines and for the washing cycle of household washer-dryers, the amount of moisture contained in the load at the end of the washing cycle;
- (19) *'final moisture content'* means for household washer-dryers the amount of moisture contained in the load at the end of the drying cycle;
- (20) *'cupboard dry'* means the status of treated textiles dried in a drying cycle to a final moisture content of 0 %;
- (21) *'programme duration (t_w)'* means the length of time beginning with the initiation of the programme selected, excluding any user programmed delay, until the end of the programme is indicated and the user has access to the load.
- (22) *'cycle duration (t_{wd})'* means, for the complete cycle of a household washer-dryer, the length of time beginning with the initiation of the programme selected for the washing cycle, excluding any user programmed delay, until the end of the drying cycle is indicated and the user has access to the load;
- (23) *'off mode'* means a condition in which the household washing machine or the household washer-dryer is connected to the mains and is not providing any function; the following shall also be considered as off mode:
- a condition providing only an indication of off mode;
 - a condition providing only functionalities intended to ensure electromagnetic compatibility;
- (24) *'standby mode'* means a condition where the household washing machine or the household washer-dryer 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 a mere 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;
- (25) *'network'* means a communication infrastructure with a topology of links, an architecture, including the physical components, organisational principles, communication procedures and formats (protocols);
- (26) *'wrinkle guard function'* means an operation of the household washing machine or of the household washer-dryer after completion of a programme to prevent excessive wrinkle building in the laundry;
- (27) *'delay start'* means a condition where the user has selected a specified delay to the beginning or end of the cycle of the selected programme;

- (28) *'guarantee'* means any undertaking by the retailer or supplier to the consumer to:
- (a) reimburse the price paid; or
 - (b) replace, repair or handle the household washing machine and the household washer-dryer in any way if they do not meet the specifications set out in the guarantee statement or in the relevant advertising;
- (29) *'display mechanism'* means any screen, including tactile screen, or other visual technology used for displaying internet content to users;
- (30) *'nested display'* means visual interface where an image or data set is accessed by a mouse click, mouse roll-over or tactile screen expansion of another image or data set;
- (31) *'tactile screen'* means a screen responding to touch, such as that of a tablet computer, slate computer or a smartphone;
- (32) *'alternative text'* means text provided as an alternative to a graphic allowing information to be presented in non-graphical form where display devices cannot render the graphic or as an aid to accessibility such as input to voice synthesis applications;
- (33) *'declared values'* means the values provided by the supplier for the stated, calculated or measured technical parameters, pursuant to Article 5(3) of Regulation establishing a framework for the setting of energy labelling requirements for energy related products, and in accordance with Article 4(1)(d) and Annex 6 of this Technical Regulation, for the verification of compliance by the market surveillance authority.

Annex 2

A. Energy efficiency classes

The energy efficiency class of a household washing machine and of the washing cycle of a household washer-dryer shall be determined on the basis of its Energy Efficiency Index (EEl_w) as set out in Table 1.

The EEl_w of a household washing machine and of the washing cycle of a household washer-dryer shall be calculated in accordance with Annex 4.

Table 1

Energy efficiency classes of household washing machines and of the washing cycle of household washer-dryers

Energy Efficiency Class	Energy Efficiency Index (EEl_w)
A	$EEl_w \leq 52$
B	$52 < EEl_w \leq 60$
C	$60 < EEl_w \leq 69$
D	$69 < EEl_w \leq 80$
E	$80 < EEl_w \leq 91$
F	$91 < EEl_w \leq 102$
G	$EEl_w > 102$

The energy efficiency class of the complete cycle of a household washer-dryer shall be determined on the basis of its Energy Efficiency Index (EEl_{WD}) as set out in Table 2.

The EEl_{WD} of the complete cycle of a household washer-dryer shall be calculated in accordance with Annex 4.

Table 2

Energy efficiency classes of the complete cycle of a household washer-dryer

Energy Efficiency Class	Energy Efficiency Index (EEl_{WD})
A	$EEl_{WD} \leq 37$
B	$37 < EEl_{WD} \leq 45$
C	$45 < EEl_{WD} \leq 55$
D	$55 < EEl_{WD} \leq 67$
E	$67 < EEl_{WD} \leq 82$
F	$82 < EEl_{WD} \leq 100$
G	$EEl_{WD} > 100$

B. Spin-drying efficiency classes

The spin-drying efficiency class of a household washing machine and of the washing cycle of a household washer-dryer shall be determined on the basis of the remaining moisture content (D) as set out in Table 3.

The D of a household washing machine and of the washing cycle of a household washer-dryer shall be calculated in accordance with Annex 4.

Table 3

Spin-drying efficiency class

Spin-drying efficiency class	Remaining moisture content (D) (%)
A	$D < 45$
B	$45 \leq D < 54$
C	$54 \leq D < 63$
D	$63 \leq D < 72$
E	$72 \leq D < 81$
F	$81 \leq D < 90$
G	$D \geq 90$

C. Acoustic airborne noise emission classes

The acoustic airborne noise emission class of a household washing machine and of a washing cycle of a household washer-dryer shall be determined on the basis of the acoustic airborne noise emissions as set out in Table 4.

Table 4

Acoustic airborne noise emission classes

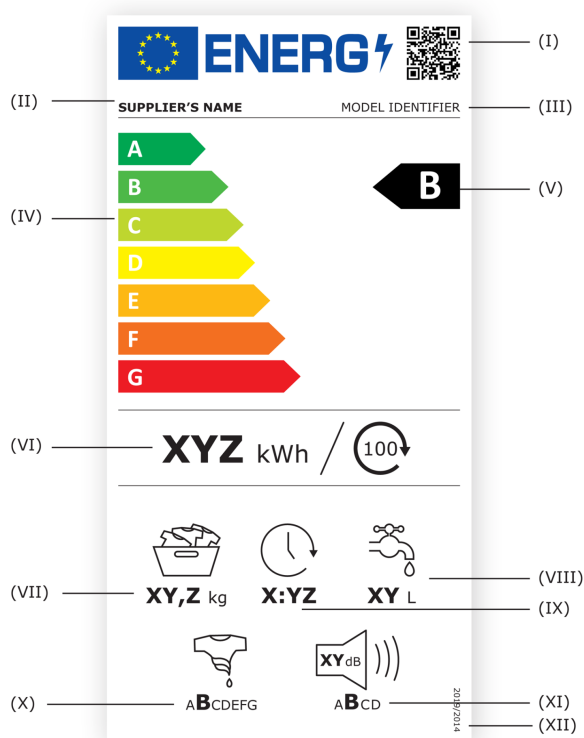
Phase	Acoustic airborne noise emission class	Noise (dB)
Spinning	A	$n < 73$
	B	$73 \leq n < 77$
	C	$77 \leq n < 81$
	D	$n \geq 81$

Annex 3

A. Label for household washing machines

1. LABEL FOR HOUSEHOLD WASHING MACHINES

1.1 Label

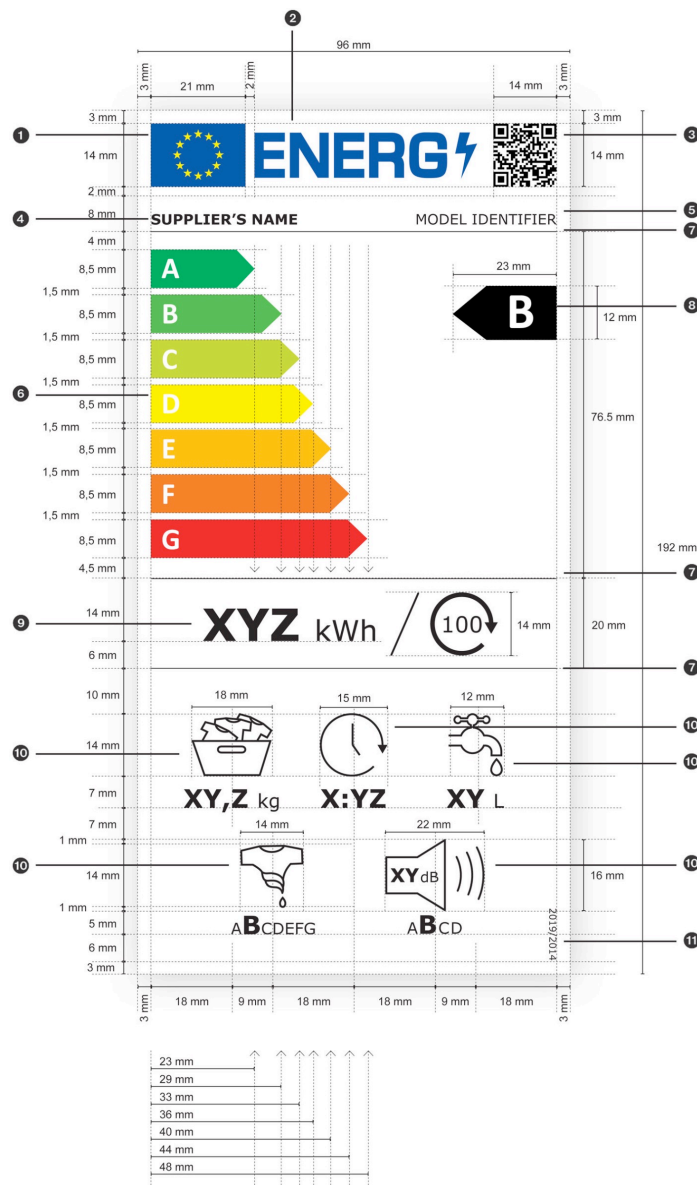


1.2 The following information shall be included in the label:

- I. QR code;
- II. supplier's name or trade mark;
- III. supplier's model identifier;
- IV. scale of energy efficiency classes from A to G;
- V. the energy efficiency class determined in accordance with Annex 2;
- VI. weighted energy consumption per 100 cycles in kWh, rounded to the nearest integer in accordance with Annex 4;
- VII. rated capacity, in kg, for the eco 40-60 programme;
- VIII. weighted water consumption per cycle in litres, rounded to the nearest integer in accordance with Annex 4;
- IX. duration of the eco 40-60 programme at rated capacity in h:min rounded to the nearest minute;
- X. Spin-drying efficiency class, determined in accordance with point B of Annex 2;
- XI. airborne acoustic noise emissions of the spinning phase, expressed in dB(A) re 1 pW and rounded to the nearest integer, and airborne acoustic noise emission class, determined in accordance with point C of Annex 2;
- XII. the number of this Technical Regulation, that is

2. LABEL DESIGN FOR HOUSEHOLD WASHING MACHINES

The design of the label shall be as in the figure below.



Whereby:

- The label shall be at least 96 mm wide and 192 mm high. Where the label is printed in a larger format, its content shall nevertheless remain proportionate to the specifications above.
- The background of the label shall be 100 % white.
- The typefaces shall be Verdana and Calibri.
- The dimensions and specifications of the elements constituting the label shall be as indicated in the label design for household washing machines.
- Colours shall be CMYK – cyan, magenta, yellow and black, following this example: 0,70,100,0: 0 % cyan, 70 % magenta, 100 % yellow, 0 % black.
- The label shall fulfil all the following requirements (numbers refer to the figure above):

- 1 the colours of the National Flag of Lebanon shall be as follows:
 - the background:;
 - the cedar tree:;
- 2 the colour of the energy logo shall be: 100,80,0,0;
- 3 the QR code shall be 100 % black;
- 4 the supplier's name shall be 100 % black and in Verdana Bold, 9 pt;
- 5 the model identifier shall be 100 % black and in Verdana Regular 9 pt;
- 6 the A to G scale shall be as follows:
 - the letters of the energy efficiency scale shall be 100 % white and in Calibri Bold 19 pt; the letters shall be centred on an axis at 4.5 mm from the left side of the arrows;
 - the colours of the A to G scale arrows shall be as follows:
 - o A-class: 100,0,100,0
 - o B-class: 70,0,100,0
 - o C-class: 30,0,100,0
 - o D-class: 0,0,100,0
 - o E-class: 0,30,100,0
 - o F-class: 0,70,100,0
 - o G-class: 0,100,100,0
- 7 the internal dividers shall have a weight of 0.5 pt and the colour shall be 100 % black;
- 8 the letter of the energy efficiency class shall be 100 % white and in Calibri Bold 33 pt. The energy efficiency class arrow and the corresponding arrow in the A to G scale shall be positioned in such a way that their tips are aligned. The letter in the energy efficiency class arrow shall be positioned in the centre of the rectangular part of the arrow which shall be 100 % black;
- 9 the value of the weighted energy consumption per 100 cycles shall be in Verdana Bold font 28 pt; 'kWh' shall be in Verdana Regular font, 18 pt; the number '100' in the icon representing 100 cycles shall be in Verdana Regular 14 pt. The value and unit shall be centred and 100 % black;
- 10 the pictograms shall be as shown as in the label design and as follows:
 - the pictograms' lines shall have a weight of 1.2 pt and they and the texts (numbers and units) shall be 100 % black;
 - the texts under the 3 top pictograms shall be in Verdana Bold 16 pt with the units in Verdana Regular 12 pt, they shall be centred under the pictograms;
 - the spin-drying energy efficiency pictogram: the range of spin-drying energy efficiency classes (A to G) shall be centred under the pictogram, with the letter of the applicable spin-drying energy efficiency class in Verdana Bold 16 pt and the other letters of the spin-drying energy efficiency classes in Verdana Regular 10 pt;
 - the airborne acoustical noise emission pictogram: the number of decibels in the loudspeaker shall be in Verdana Bold 12 pt, with the unit 'dB' in Verdana Regular 9 pt; the range of noise classes (A to D) shall be centred under the pictogram, with the letter of the applicable noise class in Verdana Bold 16 pt and the other letters of the noise classes in Verdana Regular 10 pt;

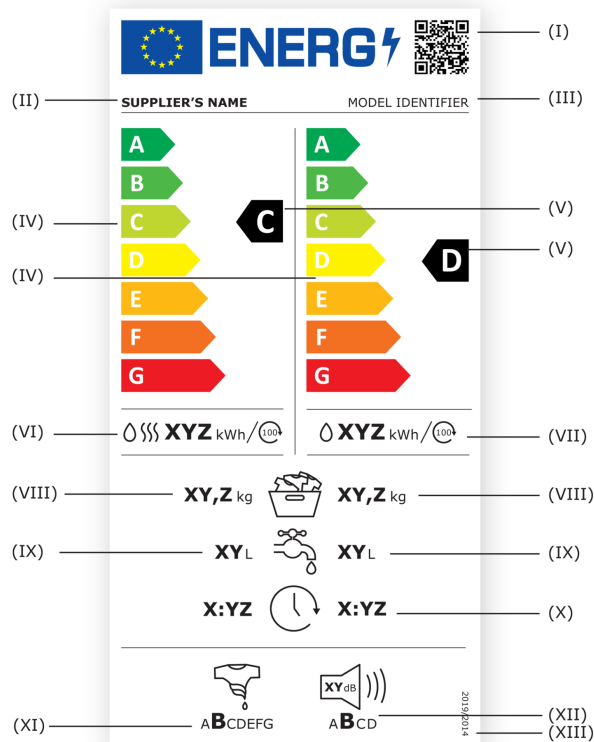
11

the number of the Technical Regulation shall be 100 % black and in Verdana Regular 6 pt.

B. Label for household washer-dryer

1. LABEL FOR HOUSEHOLD WASHER-DRYERS

1.1. Label:

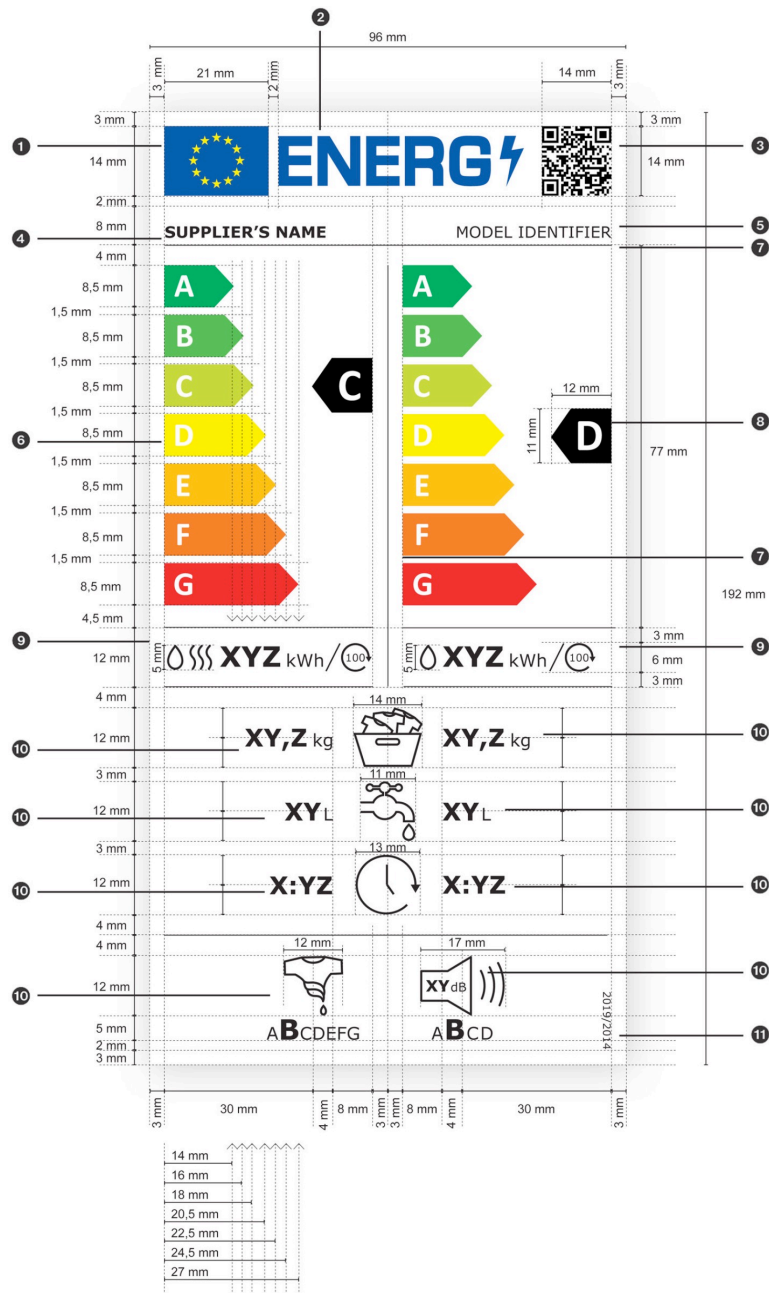


The following information shall be included in the label:

- I. QR code;
- II. supplier's name or trademark;
- III. supplier's model identifier;
- IV. scales of energy efficiency classes from A to G for the complete cycle (on the left side) and for the washing cycle (on the right side);
- V. the energy efficiency class for the complete cycle (on the left side) determined in accordance with Annex 2; and for the washing cycle (on the right side) determined in accordance with Annex 2;
- VI. weighted energy consumption per 100 cycles in kWh, rounded to the nearest integer in accordance with Annex 4, for the complete cycle (on the left side);
- VII. weighted energy consumption per 100 cycles in kWh, rounded to the nearest integer in accordance with Annex 4 for the washing cycle (on the right side);
- VIII. rated capacity for the complete cycle (on the left side) and for the washing cycle (on the right side);

- IX. weighted water consumption per cycle in litre, rounded to the nearest integer in accordance with Annex IV for the complete cycle (on the left side) and for the washing cycle (on the right side);
- X. cycle duration at rated capacity for the complete cycle (on the left side) and for the washing cycle (on the right side);
- XI. Spin-drying efficiency class, determined in accordance with point B of Annex 2;
- XII. airborne acoustic noise emission class of the spinning phase of the eco 40-60 programme and value in dB(A) re 1 pW and rounded to the nearest integer;
- XIII. the number of this Technical Regulation, that is

2. LABEL DESIGN FOR HOUSEHOLD WASHER-DRYERS



Whereby:

- The label shall be at least 96 mm wide and 192 mm high. Where the label is printed in a larger format, its content shall nevertheless remain proportionate to the specifications above.
- The background of the label shall be 100 % white.
- The typefaces shall be Verdana and Calibri.
- The dimensions and specifications of the elements constituting the label shall be as indicated in the label design for household washer dryers.
- Colours shall be CMYK – cyan, magenta, yellow and black, following this example: 0,70,100,0: 0 % cyan, 70 % magenta, 100 % yellow, 0 % black.
- The label shall fulfil all the following requirements (numbers refer to the figure above):

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the colours of the National Flag of Lebanon shall be as follows:

- the background:;
- the Cedar tree:;

- 2 the colour of the energy logo shall be: 100,80,0,0;
- 3 the QR code shall be 100 % black;
- 4 the supplier's name shall be 100 % black and in Verdana Bold, 9 pt;
- 5 the model identifier shall be 100 % black and in Verdana Regular 9 pt;
- 6 the A to G scale shall be as follows:
 - the letters of the energy efficiency scale shall be 100 % white and in Calibri Bold 19 pt; the letters shall be centred on an axis at 4 mm from the left side of the arrows;
 - the colours of the A to G scale arrows shall be as follows:
 - o A-class: 100,0,100,0
 - o B-class: 70,0,100,0
 - o C-class: 30,0,100,0
 - o D-class: 0,0,100,0
 - o E-class: 0,30,100,0
 - o F-class: 0,70,100,0
 - o G-class: 0,100,100,0
- 7 the internal dividers shall have a weight of 0.5 pt and the colour shall be 100 % black;
- 8 the letter of the energy efficiency class shall be 100 % white and in Calibri Bold 26 pt. The energy efficiency class arrow and the corresponding arrow in the A to G scale shall be positioned in such a way that their tips are aligned. The letter in the energy efficiency class arrow shall be positioned in the centre of the rectangular part of the arrow which shall be 100 % black;
- 9 the value of the weighted energy consumption per 100 cycles shall be in Verdana Bold 16 pt; 'kWh' shall be in Verdana Regular, 10 pt; the number '100' in the pictogram representing 100 cycles shall be in Verdana Regular 6 pt. The value and unit shall be centred and 100 % black;
- 10 the pictograms shall be as shown as in the label design and as follows:
 - the pictograms' lines shall have a weight of 1.2 pt and they and the texts (numbers and units) shall be 100 % black;
 - the texts under the 3 top pictograms shall be in Verdana Bold 14 pt with the units in Verdana Regular 10 pt,
 - the spin-drying energy efficiency pictogram: the range of spin-drying energy efficiency classes (A to G) shall be centred under the pictogram, with the letter of the applicable spin-drying energy efficiency class in Verdana Bold 16 pt and the other letters of the spin-drying energy efficiency classes in Verdana Regular 10 pt;
 - the airborne acoustical noise emission pictogram: the number of decibels in the loudspeaker shall be in Verdana Bold 9 pt, with the unit 'dB' in Verdana Regular 7 pt; the range of noise classes (A to D) shall be centred under the pictogram, with the letter of the applicable noise class in Verdana Bold 16 pt and the other letters of the noise classes in Verdana Regular 10 pt;
- 11 the number of this Technical Regulation shall be 100 % black and in Verdana Regular 6 pt.

Annex 4: Measurement methods and calculations

For the purposes of compliance and verification of compliance with the requirements of this Technical Regulation, measurements and calculations shall be made using referenced standards if available or other reliable, accurate and reproducible methods, which takes into account the generally recognised state-of-the-art, and in line with the following provisions.

Where a parameter is declared pursuant to Article 5(3) of Regulation establishing a framework for the setting of energy labelling requirements for energy related products and in accordance with Annex 6 Table 7 for household washing machines or Annex 6 Table 8 for household washer-dryers, its declared value shall be used by the supplier for the calculations in this Annex.

The eco 40-60 programme shall be used for the measurement and calculation of the energy consumption, Energy Efficiency Index (EEl_w), maximum temperature, water consumption, remaining moisture content, programme duration, washing efficiency, rinsing effectiveness, spin-drying efficiency and airborne acoustical noise emissions in the spinning phase for household washing machines and the washing cycle of household washer-dryers. The energy consumption, maximum temperature, water consumption, remaining moisture content, programme duration, washing efficiency and rinsing effectiveness shall be measured concurrently.

The wash and dry cycle shall be used for the measurement and calculation of the energy consumption, Energy Efficiency Index (EEl_{wD}), maximum temperature in the washing phase, water consumption, final moisture content, cycle duration, washing efficiency and rinsing effectiveness for household washer-dryers. The energy consumption, maximum temperature, water consumption, final moisture content, cycle duration, washing efficiency and rinsing effectiveness shall be measured concurrently.

When measuring the parameters of this annex for the eco 40-60 programme and for the wash and dry cycle, the highest spin speed option for the eco 40-60 programme shall be used at rated capacity, at half of the rated capacity and, where relevant, at a quarter of the rated capacity.

For household washing machines with a rated capacity lower than or equal to 3 kg and for household washer-dryers with a rated washing capacity lower than or equal to 3 kg, the parameters for the eco 40-60 programme and for the wash and dry cycle shall be measured at rated capacity only.

The duration of the eco 40-60 programme (t_w) at rated washing capacity, at half of the rated washing capacity and at a quarter of the rated washing capacity, and the duration of the wash and dry cycle (t_{wD}) at rated capacity and at half of the rated capacity, are expressed in hours and 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. RATED CAPACITY OF HOUSEHOLD WASHER-DRYERS

The rated capacity of household washer-dryers is the rated capacity of the wash and dry cycle.

If the household washer-dryer provides a continuous cycle, the rated capacity of the wash and dry cycle shall be the rated capacity for this cycle.

If the household washer-dryer does not provide a continuous cycle, the rated capacity of the wash and dry cycle shall be the lower value of the rated washing capacity of the eco 40-60 programme and the rated drying capacity of the drying cycle achieving cupboard dry status.

2. ENERGY EFFICIENCY INDEX

2.1. Energy Efficiency Index (EEl_w) of household washing machines and the washing cycle of household washer-dryers.

For the calculation of the EEl_w , the weighted energy consumption of the eco 40-60 programme at the rated washing capacity, half of the rated washing capacity and a quarter of the rated washing capacity is compared to its standard energy consumption.

(a) The EEl_w is calculated as follows, and is rounded to one decimal place:

$$EEl_w = (E_w/SCE_w) \times 100$$

where:

E_w is the weighted energy consumption of the household washing machine or the washing cycle of the household washer-dryer;

SCE_w is the standard cycle energy consumption of the household washing machine or the washing cycle of the household washer-dryer.

(b) The SCE_w is calculated in kWh per cycle and rounded to three decimal places as follows:

$$SCE_w = -0.0025 \times c^2 + 0.0846 \times c + 0.3920$$

where c is the rated capacity of the household washing machine or the rated washing capacity of the household washer-dryer for the eco 40-60 programme.

(c) The E_w is calculated in kWh per cycle as follows and rounded to three decimal places:

$$E_w = A \times E_{w,full} + B \times E_{w,1/2} + C \times E_{w,1/4}$$

where:

$E_{w,full}$ is the energy consumption of the household washing machine or of the washing cycle of the household washer-dryer for the eco 40-60 programme at the rated washing capacity and rounded to three decimal places;

$E_{w,1/2}$ is the energy consumption of the household washing machine or of the washing cycle of the household washer-dryer for the eco 40-60 programme at half of the rated washing capacity and rounded to three decimal places;

$E_{w,1/4}$ is the energy consumption of the household washing machine or of the washing cycle of the household washer-dryer for the eco 40-60 programme at a quarter of the rated washing capacity and rounded to three decimal places;

A is the weighting factor for rated washing capacity and rounded to three decimal places;

B is the weighting factor for half of the rated washing capacity and rounded to three decimal places;

C is the weighting factor for a quarter of the rated washing capacity and rounded to three decimal places.

For household washing machines with a rated capacity lower than or equal to 3 kg and for household washer-dryers with a rated washing capacity lower than or equal to 3 kg, A shall be equal to 1; B and C shall be equal to 0.

For other household washing machines and household washer-dryers, the values of the weighting factors depend on the rated capacity according to the following equations:

$$A = -0.0391 \times c + 0.6918$$

$$B = -0.0109 \times c + 0.3582$$

$$C = 1 - (A + B)$$

where c is the rated capacity of the household washing machine or the rated washing capacity of the household washer dryer.

- (d) The weighted energy consumption per 100 cycles of the household washing machine or of the washing cycle of the household washer-dryer is calculated as follows and rounded to the nearest integer:

$$E_w \times 100$$

2.2. Energy Efficiency Index ($E_{EI_{WD}}$) of the complete cycle of household washer-dryers

For the calculation of the $E_{EI_{WD}}$ of a household washer-dryer model, the weighted energy consumption of the wash and dry cycle at the rated capacity and half of the rated capacity is compared to its standard cycle energy consumption.

- (a) The $E_{EI_{WD}}$ is calculated as follows, and is rounded to one decimal place:

$$E_{EI_{WD}} = (E_{WD}/SCE_{WD}) \times 100$$

where:

E_{WD} is the weighted energy consumption of the complete cycle of the household washer-dryer;

SCE_{WD} is the standard cycle energy consumption of the complete cycle of the household washer-dryer.

- (b) The SCE_{WD} is calculated in kWh per cycle and rounded to three decimal places as follows:

$$SCE_{WD} = -0.0502 \times d^2 + 1.1742 \times d - 0.644$$

where d is the rated capacity of the household washer-dryer for the wash and dry cycle.

- (c) For household washer-dryers with a rated washing capacity lower than or equal to 3 kg, the E_{WD} is the energy consumption at rated capacity and rounded to three decimal places.

For other household washer-dryers, the E_{WD} is calculated in kWh per cycle as follows and rounded to three decimal places:

$$E_{WD} = [3 \times E_{WD,full} + 2 \times E_{WD,1/2}] / 5$$

where:

$E_{WD,full}$ is the energy consumption of the household washer-dryer for the wash and dry cycle at rated capacity and rounded to three decimal places;

$E_{WD,1/2}$ is the energy consumption of the household washer-dryer for the wash and dry cycle at half the rated capacity and rounded to three decimal places.

- (d) The weighted energy consumption per 100 cycles of the complete cycle of the washer-dryer is calculated as follows and rounded to the nearest integer:

$$E_{WD} \times 100$$

3. WASHING EFFICIENCY INDEX

The washing efficiency index of household washing machines and of the washing cycle of household washer-dryers (I_w) and the washing efficiency index of the complete cycle of household washer-dryers (J_w) shall be calculated using referenced standards if available or other reliable, accurate and reproducible methods, which take into account the generally recognised state-of-the-art, and rounded to three decimal places.

For household washing machines with a rated capacity higher than 3 kg and for the washing cycle of household washer-dryers with a rated capacity higher than 3 kg, the I_w indicated on the Product Information Sheet shall be the lowest value between the washing efficiency index at rated washing capacity, half of the rated washing capacity, and quarter of the rated washing capacity.

For household washing machines with a rated capacity lower than or equal to 3 kg and for the washing cycle of household washer-dryers with a rated capacity lower than or equal to 3 kg, the I_w indicated on the Product Information Sheet shall be the washing efficiency index at rated washing capacity.

For household washer-dryers with a rated capacity higher than 3 kg, the J_w indicated on the Product Information Sheet shall be the lower value between the washing efficiency index at rated capacity and half of the rated capacity.

For household washer-dryers with a rated capacity lower than or equal to 3 kg, the J_w indicated on the Product Information Sheet shall be the washing efficiency index at rated capacity.

4. RINSING EFFECTIVENESS

The rinsing effectiveness of household washing machines and of the washing cycle of household washer-dryers (I_r) and the rinsing effectiveness of the complete cycle of household washer-dryers (J_r) shall be calculated using referenced standards if available or other reliable, accurate and reproducible method based on the detection of the linear alkylbenzene sulfonate (LAS) marker, and rounded to one decimal place.

For household washing machines with a rated capacity higher than 3 kg and for the washing cycle of household washer-dryers with a rated capacity higher than 3 kg, the I_r indicated on the Product Information Sheet shall be the highest value between the rinsing effectiveness at rated washing capacity, half of the rated washing capacity, and quarter of the rated washing capacity.

For household washing machines with a rated capacity lower than, or equal to 3 kg and for the washing cycle of household washer-dryers with a rated capacity lower than, or equal to 3 kg, no value shall be indicated for I_r on the Product Information Sheet.

For household washer-dryers with a rated capacity higher than 3 kg, the J_r indicated on the Product Information Sheet shall be the higher value between the rinsing effectiveness at rated capacity and half of the rated capacity.

For household washer-dryers with a rated capacity lower than, or equal to 3 kg, no value shall be indicated for J_r on the Product Information Sheet.

5. MAXIMUM TEMPERATURE

The maximum temperature reached for 5 minutes inside the laundry being treated in household washing machines and in the washing cycle of household washer-dryers shall be determined using referenced standards if available or other reliable, accurate and reproducible method, and rounded to the nearest integer.

6. WEIGHTED WATER CONSUMPTION

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

$$W_w = (A \times W_{w,full} + B \times W_{w,1/2} + C \times W_{w,1/4})$$

where:

$W_{W,full}$ is the water consumption of the household washing machine or of the washing cycle of a household washer-dryer for the eco 40-60 programme at rated washing capacity, in litres and rounded to one decimal place;

$W_{W,1/2}$ is the water consumption of the household washing machine or of the washing cycle of a household washer-dryer for the eco 40-60 programme at half of the rated washing capacity, in litres and rounded to one decimal place;

$W_{W,1/4}$ is the water consumption of the household washing machine or of the washing cycle of a household washer-dryer for the eco 40-60 programme at a quarter of the rated washing capacity, in litres and rounded to one decimal place;

A, B and C are the weighting factors as described in point 2.1(c).

- (2) For household washer-dryers with a rated washing capacity lower than or equal to 3 kg, the weighted water consumption of the wash and dry cycle is the water consumption at rated capacity and rounded to the nearest integer.

For other household washer-dryers, the weighted water consumption (W_{WD}) of the wash and dry cycle of a household washer-dryer is calculated as follows and rounded to the nearest integer:

$$W_{WD} = [3 \times E_{WD,full} + 2 \times E_{WD,1/2}] / 5$$

where:

$W_{WD,full}$ is the water consumption of the wash and dry cycle of a household washer-dryer at rated capacity, in litres and rounded to one decimal place;

$W_{WD,1/2}$ is the water consumption of the wash and dry cycle of a household washer-dryer at half of the rated capacity, in litres and rounded to one decimal place.

7. REMAINING MOISTURE CONTENT

The weighted remaining moisture content after washing (D) of a household washing machine and of the washing cycle of a household washer-dryer is calculated in percentage as follows and rounded to one decimal place:

$$D = [A \times D_{full} + B \times D_{1/2} + C \times D_{1/4}]$$

where:

D_{full} is the remaining moisture content for the eco 40-60 programme at rated washing capacity, in percentage and rounded to two decimal places;

$D_{1/2}$ is the remaining moisture content for the eco 40-60 programme at half of the rated washing capacity in percentage and rounded to two decimal places;

$D_{1/4}$ is the remaining moisture content for the eco 40-60 programme at a quarter of the rated washing capacity in percentage and rounded to two decimal places;

A, B and C are the weighting factors as described in point 2.1(c).

8. FINAL MOISTURE CONTENT

For the drying cycle of a household washer-dryer, cupboard dry status corresponds to 0% final moisture content, which is the thermodynamic equilibrium of the load with the ambient air conditions of temperature (tested at 20 ± 2 °C) and relative humidity (tested at 65 ± 5 %).

The final moisture content is calculated in accordance with applicable relevant standards and rounded to one decimal place.

9. LOW POWER MODES

Where applicable, the power consumption of the off mode (P_o), standby mode (P_{sm}) and delay start (P_{ds}) are measured, 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 a household washing machine or a household washer-dryer provides for a wrinkle guard function, this operation shall be interrupted by opening the household washing machine or household washer-dryer door, or any other appropriate intervention 15 minutes before the measurement of the power consumption.

10. ACOUSTIC AIRBORNE NOISE EMISSION

The acoustic airborne noise emission of the spinning phase of household washing machines and household washer-dryers shall be calculated for the eco 40-60 programme at rated washing capacity, using referenced standards if available or other reliable, accurate and reproducible methods, which take into account the generally recognised state-of-the-art, and rounded to the nearest integer.

11. SPIN SPEED

The spin speed of a household washing machine and of the washing cycle of a household washer-dryer shall be measured or calculated at the highest spin speed option for the eco 40-60 programme using referenced standards if available 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 5: Product information sheet

1. Household washing machines

Pursuant to point 1(b) of Article 4, the supplier shall enter into its online product public information source the information as set out in Table 5.

The user manual or other literature provided with the product shall clearly indicate the link to the model in the product database as a human-readable Uniform Resource Locator (URL) or as QR code or by providing the product registration number.

Table 5
Content, order and format of the product information sheet

Supplier's name or trademark ^(a) , ^(c) :					
Supplier's address ^(a) , ^(c) :					
Model identifier ^(a) :					
General product parameters:					
Parameter	Value		Parameter	Value	
Rated capacity ^(b) (kg)	x,x		Dimensions in cm ^(a) , ^(c)	Height	x
				Width	x
				Depth	x
Energy Efficiency Index ^(b) (EEI _w)	x,x		Energy efficiency class ^(b)	[A/B/C/D/E/F/G] ^(d)	
Washing efficiency index ^(b)	x,xxx		Rinsing effectiveness (g/kg) ^(b)	x,x	
Energy consumption in kWh per cycle, based on the eco 40-60 programme at a combination of full and partial loads. Actual energy consumption will depend on how the appliance is used.	x,xxx		Water consumption in litre per cycle, based on the eco 40-60 programme at a combination of full and partial loads. Actual water consumption will depend on how the appliance is used and on the hardness of the water.	x	
Maximum temperature inside the treated textile ^(b) (°C)	Rated capacity	x	Weighted remaining moisture content ^(b) (%)	x,x	
	Half	x			
	Quarter	x			
Spin speed ^(b) (rpm)	Rated capacity	x	Spin-drying efficiency class ^(b)	[A/B/C/D/E/F/G] ^(d)	
	Half	x			
	Quarter	x			
Programme duration ^(b) (h:min)	Rated capacity	x:xx	Type	[built-in/free-standing]	
	Half	x:xx			
	Quarter	x:xx			
Airborne acoustical noise emissions in the spinning phase ^(b) (dB(A) re 1 pW)	x		Airborne acoustical noise emission class ^(b) (spinning phase)	[A/B/C/D] ^(d)	
Off-mode (W) (if applicable)	x,xx		Standby mode (W) (if applicable)	x,xx	
Delay start (W) (if applicable)	x,xx		Networked standby (W) (if applicable)	x,xx	
Minimum duration of the guarantee offered by the supplier ^(a) , ^(c) :					

This product has been designed to release silver ions during the washing cycle	[YES/NO]
Additional information ^(a), ^(c):	
Weblink to the supplier's website, where the information in point 9 of Annex 2 to Technical Regulation laying down Minimum Energy Performance (Ecodesign) Requirements for Household Washing Machines and Household Washer-dryers is found:	
<p>^(a) this item shall not be considered relevant for the purposes of Article 4(6) of Regulation establishing a framework for the setting of Minimum Energy Labelling Requirements of Energy related Products.</p> <p>^(b) for the eco 40-60 programme.</p> <p>^(c) changes to this item shall not be considered relevant for the purposes of paragraph 2 of Article 6 of Regulation establishing a framework for the setting of Minimum Energy Labelling Requirements of Energy related Products.</p> <p>^(d) if the product database automatically generates the definitive content of this cell, the supplier shall not enter these data.</p>	

2. Household washer-dryers

Pursuant to point 1(b) of Article 4, the supplier shall enter into the product database the information as set out in Table 6.

The user manual or other literature provided with the product shall clearly indicate the link to the model in the product database as a human-readable Uniform Resource Locator (URL) or as QR code or by providing the product registration number.

Table 6

Content, order and format of the product information sheet

Supplier's name or trade mark ^(a), ^(d):					
Supplier's address ^(a), ^(d):					
Model identifier^(a):					
General product parameters:					
Parameter	Value		Parameter	Value	
Rated capacity (kg)	Rated capacity ^(c)	x,x	Dimensions in cm ^(a) , ^(d)	Height	x
	Rated washing capacity ^(b)	x,x		Width	x
				Depth	x
Energy Efficiency Index	EEl _w ^(b)	x,x	Energy efficiency class	EEl _w ^(b)	[A/B/C/D/E/F/G] ^(e)
	EEl _{wd} ^(c)	x,x		EEl _{wd} ^(c)	[A/B/C/D/E/F/G] ^(e)
Washing efficiency index	I _w ^(b)	x,xxx	Rinsing effectiveness (g/kg dry textile)	I _R ^(b)	x,x
	J _w ^(c)	x,xxx		J _R ^(c)	x,x
Energy consumption in kWh per cycle, for the washing cycle of the household washer-dryer, using the eco 40-60 programme at a combination of full and partial loads. Actual energy consumption will	x,xxx		Energy consumption in kWh per cycle, for the wash and dry cycle of the household washer-dryer at a combination of full and half loads. Actual energy consumption will depend on how the appliance is used	x,xxx	

depend on how the appliance is used					
Water consumption in litre per cycle, for the eco 40-60 programme at a combination of full and partial loads. Actual water consumption will depend on how the appliance is used and on the hardness of the water	x		Water consumption in litre per cycle, for the wash and dry cycle of the household washer-dryer at a combination of full and half loads. Actual water consumption will depend on how the appliance is used and on the hardness of the water	x	
Maximum temperature inside the treated textile (°C) for the washing cycle of the household washer-dryer, using the eco 40-60 programme	Rated washing capacity	x	Maximum temperature inside the treated textile (°C) for the washing cycle of the household washer-dryer, using the wash and dry cycle	Rated capacity	x
	Half	x		Half	x
	Quarter	x			
Spin speed (rpm) ^(b)	Rated washing capacity	x	Weighted remaining moisture content (%) ^(b)	x,x	
	Half	x			
	Quarter	x			
Eco 40-60 programme duration (h:min)	Rated washing capacity	x:xx	Spin-drying efficiency class ^(b)	[A/B/C/D/E/F/G] ^(e)	
	Half	x:xx			
	Quarter	x:xx			
Airborne acoustical noise emissions during the spinning phase for the eco 40-60 washing cycle at rated washing capacity (dB(A) re 1 pW)	x		wash and dry cycle duration (h:min)	Rated capacity	x:xx
				Half	x:xx
Type	[built-in/free-standing]		Airborne acoustical noise emission class for the spinning phase for the eco 40-60 programme at rated washing capacity	[A/B/C/D] ^(e)	
Off-mode (W) (if applicable)	x,xx		Standby mode (W) (if applicable)	x,xx	
Delay start (W) (if applicable)	x,xx		Networked standby (W) (if applicable)	x,xx	
Minimum duration of the guarantee offered by the supplier ^(a), ^(d):					
This product has been designed to release silver ions during the washing cycle			[YES/NO]		

Additional information ^(a), ^(d):
Weblink to the supplier's website, where the information in point 9 Annex 2 to Technical Regulation laying down Minimum Energy Performance (Ecodesign) Requirements for Household Washing Machines and Household Washer-dryers is found:
(^a) this item shall not be considered relevant for the purposes of Article 4(6) of Regulation establishing a framework for the setting of Minimum Energy Labelling Requirements of Energy related Products. (^b) for the eco 40-60 programme. (^c) for the wash and dry cycle. (^d) changes to this item shall not be considered relevant for the purposes of paragraph 2 of Article 6 of Regulation establishing a framework for the setting of Minimum Energy Labelling Requirements of Energy related Products. (^e) if the product database automatically generates the definitive content of this cell the supplier shall not enter these data.

Annex 6: Technical documentation

1. For household washing machines, the technical documentation referred to in point 1(d) of Article 4 shall include the following elements:
 - (a) a general description of the model allowing it to be unequivocally and easily identified;
 - (b) references to the national standards applied or other measurement standards used;
 - (c) specific precautions to be taken when the model is assembled, installed, maintained or tested;
 - (d) the values for the technical parameters set out in Table 7; these values are considered as the declared values for the purpose of the verification procedure in Annex 9;
 - (e) the details and the results of calculations performed in accordance with Annex 4;
 - (f) testing conditions if not described sufficiently in point (b);
 - (g) equivalent models, if any, including model identifiers.

These elements shall also constitute the mandatory specific parts of the technical documentation that the supplier shall enter into the database, pursuant to point 5 of Article 10 of Regulation establishing a framework for the setting of Energy Labelling Requirements for Energy related Products.

Table 7

Technical parameters of the model and their declared values for household washing machines

PARAMETER	DECLARED VALUE	UNIT
Rated capacity for the eco 40-60 programme, at 0.5 kg intervals (c)	X,X	kg
Energy consumption of the eco 40-60 programme at rated capacity ($E_{W,full}$)	X,XXX	kWh/cycle
Energy consumption of the eco 40-60 programme at half rated capacity ($E_{W,1/2}$)	X,XXX	kWh/cycle
Energy consumption of the eco 40-60 programme at quarter rated capacity ($E_{W,1/4}$)	X,XXX	kWh/cycle
Weighted energy consumption of the eco 40-60 programme (E_w)	X,XXX	kWh/cycle
Standard energy consumption of the eco 40-60 programme (SCE_w)	X,XXX	kWh/cycle
Energy Efficiency Index (EEl_w)	X,X	—
Water consumption of the eco 40-60 programme at rated capacity ($W_{W,full}$)	X,X	L/cycle
Water consumption of the eco 40-60 programme at half rated capacity ($W_{W,1/2}$)	X,X	L/cycle
Water consumption of the eco 40-60 programme at quarter rated capacity ($W_{W,1/4}$)	X,X	L/cycle
Weighted water consumption (W_w)	X	L/cycle
Washing efficiency index of the eco 40-60 programme at rated capacity (l_w)	X,XXX	—
Washing efficiency index of the eco 40-60 programme at half rated capacity (l_w)	X,XXX	—
Washing efficiency index of the eco 40-60 programme at quarter rated capacity (l_w)	X,XXX	—

Rinsing effectiveness of the eco 40-60 programme at rated capacity (I_R)	X,X	g/kg
Rinsing effectiveness of the eco 40-60 programme at half rated capacity (I_R)	X,X	g/kg
Rinsing effectiveness of the eco 40-60 programme at quarter rated capacity (I_R)	X,X	g/kg
Programme duration of the eco 40-60 programme at rated capacity (t_w)	X:XX	h:min
Programme duration of the eco 40-60 programme at half rated capacity (t_w)	X:XX	h:min
Programme duration of the eco 40-60 programme at quarter rated capacity (t_w)	X:XX	h:min
Temperature reached for minimum 5 min inside the load during eco 40-60 programme at rated capacity (T)	X	°C
Temperature reached for minimum 5 min inside the load during eco 40-60 programme at half rated capacity (T)	X	°C
Temperature reached for minimum 5 min inside the load during eco 40-60 programme at quarter rated capacity (T)	X	°C
Spin speed in the spinning phase of the eco 40-60 programme at rated capacity (S)	X	rpm
Spin speed in the spinning phase of the eco 40-60 programme at half rated capacity (S)	X	rpm
Spin speed in the spinning phase of the eco 40-60 programme at quarter rated capacity (S)	X	rpm
Weighted remaining moisture content (D)	X,X	%
Airborne acoustical noise emissions during eco 40-60 programme (spinning phase)	X	dB(A) re 1 pW
Power consumption in 'off mode' (P_o) (if applicable)	X,XX	W
Power consumption in 'standby mode' (P_{sm}) (if applicable)	X,XX	W
Does 'standby mode' include the display of information?	Yes/No	—
Power consumption in 'standby mode' (P_{sm}) in condition of networked standby (if applicable)	X,XX	W
Power consumption in 'delay start' (P_{ds}) (if applicable)	X,XX	W

2. For household washer-dryers, the technical documentation referred to in point 1(d) of Article 4 shall include the following elements:
- (a) a general description of the model allowing it to be unequivocally and easily identified;
 - (b) references to the national standards applied or other measurement standards used;
 - (c) specific precautions to be taken when the model is assembled, installed, maintained or tested;
 - (d) the values for the technical parameters set out in Table 8; these values are considered as the declared values for the purpose of the verification procedure in Annex 9;
 - (e) the details and the results of calculations performed in accordance with Annex 4;
 - (f) testing conditions if not described sufficiently in point (b);
 - (g) equivalent models, if any, including model identifiers;

These elements shall also constitute the mandatory specific parts of the technical documentation that the supplier shall enter into the database, pursuant to point 5 of Article 10 of Regulation establishing a framework for the setting of Energy Labelling Requirements for Energy related Products.

Table 8

Technical parameters of the model and their declared values for household washer-dryers

PARAMETER	DECLARED VALUE	UNIT
Rated capacity for the washing cycle, at 0.5 kg intervals (c)	X,X	kg
Rated capacity for the wash and dry cycle, at 0.5 kg intervals (d)	X,X	kg
Energy consumption of the eco 40-60 programme at rated washing capacity ($E_{W,full}$)	X,XXX	kWh/cycle
Energy consumption of the eco 40-60 programme at half of the rated washing capacity ($E_{W,1/2}$)	X,XXX	kWh/cycle
Energy consumption of the eco 40-60 programme at a quarter of the rated washing capacity ($E_{W,1/4}$)	X,XXX	kWh/cycle
Weighted energy consumption of the eco 40-60 programme (E_w)	X,XXX	kWh/cycle
Standard energy consumption of the eco 40-60 programme (SCE_w)	X,XXX	kWh/cycle
Energy Efficiency Index of the washing cycle (EEl_w)	X,X	—
Energy consumption of the wash and dry cycle at rated capacity ($E_{WD,full}$)	X,XXX	kWh/cycle
Energy consumption of the wash and dry cycle at half rated capacity ($E_{WD,1/2}$)	X,XXX	kWh/cycle
Weighted energy consumption of the wash and dry cycle (E_{WD})	X,XXX	kWh/cycle
Standard energy consumption of the wash and dry cycle (SCE_{WD})	X,XXX	kWh/cycle
Energy Efficiency Index of the wash and dry cycle (EEl_{WD})	X,X	—
Water consumption of the eco 40-60 programme at rated washing capacity ($W_{W,full}$)	X,X	L/cycle
Water consumption of the eco 40-60 programme at half of the rated washing capacity ($W_{W,1/2}$)	X,X	L/cycle
Water consumption of the eco 40-60 programme at a quarter of the rated washing capacity ($W_{W,1/4}$)	X,X	L/cycle
Weighted water consumption of the washing cycle (W_w)	X	L/cycle
Water consumption of the wash and dry cycle at rated capacity ($W_{WD,full}$)	X,X	L/cycle
Water consumption of the wash and dry cycle at half rated capacity ($W_{WD,1/2}$)	X,X	L/cycle
Weighted water consumption of the wash and dry cycle (W_{WD})	X	L/cycle
Washing efficiency index of the eco 40-60 programme at rated washing capacity (I_w)	X,XXX	—
Washing efficiency index of the eco 40-60 programme at half rated washing capacity (I_w)	X,XXX	—
Washing efficiency index of the eco 40-60 programme at quarter rated washing capacity (I_w)	X,XXX	—
Washing efficiency index of the wash and dry cycle at rated capacity (J_w)	X,XXX	—
Washing efficiency index of the wash and dry cycle at half rated capacity (J_w)	X,XXX	—
Rinsing effectiveness of the eco 40-60 programme at rated washing capacity (I_R)	X,X	g/kg
Rinsing effectiveness of the eco 40-60 programme at half rated washing capacity (I_R)	X,X	g/kg
Rinsing effectiveness of the eco 40-60 programme at quarter rated washing capacity (I_R)	X,X	g/kg
Rinsing effectiveness of the wash and dry cycle at rated capacity (J_R)	X,X	g/kg

Rinsing effectiveness of the wash and dry cycle at half rated capacity (J_R)	X,X	g/kg
Programme duration of the eco 40-60 programme at rated washing capacity (t_w)	X:XX	h:min
Programme duration of the eco 40-60 programme at half rated washing capacity (t_w)	X:XX	h:min
Programme duration of the eco 40-60 programme at quarter rated washing capacity (t_w)	X:XX	h:min
Cycle duration of the wash and dry cycle at rated capacity (t_{WD})	X:XX	h:min
Cycle duration of the wash and dry cycle at half rated capacity (t_{WD})	X:XX	h:min
Temperature reached for minimum 5 min inside the load during eco 40-60 programme at rated washing capacity (T)	X	°C
Temperature reached for minimum 5 min inside the load during eco 40-60 programme at half rated washing capacity (T)	X	°C
Temperature reached for minimum 5 min inside the load during eco 40-60 programme at quarter rated washing capacity (T)	X	°C
Temperature reached for minimum 5 min inside the load in the washing cycle during wash and dry cycle at rated capacity (T)	X	°C
Temperature reached for minimum 5 min inside the load in the washing cycle during wash and dry cycle at half rated capacity (T)	X	°C
Spin speed in the spinning phase of the eco 40-60 programme at rated washing capacity (S)	X	rpm
Spin speed in the spinning phase of the eco 40-60 programme at half rated washing capacity (S)	X	rpm
Spin speed in the spinning phase of the eco 40-60 programme at quarter rated washing capacity (S)	X	rpm
Weighted remaining moisture content after washing (D)	X,X	%
Final moisture content after drying	X,X	%
Airborne acoustical noise emissions during eco 40-60 programme (spinning phase)	X	dB(A) re 1 pW
Power consumption in 'off mode' (P_o) (if applicable)	X,XX	W
Power consumption in 'standby mode' (P_{sm}) (if applicable)	X,XX	W
Does 'standby mode' include the display of information?	Yes/No	—
Power consumption in 'standby mode' (P_{sm}) in condition of networked standby (if applicable)	X,XX	W
Power consumption in 'delay start' (P_{ds}) (if applicable)	X,XX	W

3. Where the information included in the technical documentation for a particular household washing machine or household washer-dryer model has been obtained by any of the following methods, or both:
- from a model that has the same technical characteristics relevant for the technical information to be provided but is produced by a different supplier,
 - by calculation on the basis of design or extrapolation from another model of the same or a different supplier,

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

Annex 7: Information to be provided in visual advertisements, in technical promotional material in distance selling and in telemarketing, except distance selling on the internet

1. In visual advertisements for household washing machines or household washer-dryers, for the purposes of ensuring conformity with the requirements laid down in point 1(e) of Article 4 and point (c) of Article 5, the energy efficiency class and the range of energy efficiency classes available on the label shall be shown as set out in point 4 of this Annex.
2. In technical promotional material for household washing machines or household washer-dryers, for the purposes of ensuring conformity with the requirements laid down in point 1(f) of Article 4 and point (d) of Article 5, the energy efficiency class and the range of energy efficiency classes available on the label shall be shown as set out in point 4 of this Annex.
3. Any paper-based distance selling of household washing machines or household washer-dryers must show the energy efficiency class and the range of energy efficiency classes available on the label as set out in point 4 of this Annex.
4. The energy efficiency class and the range of energy efficiency classes shall be shown, as indicated in Figure 1, with:
 - (a) for household washing machines: an arrow, containing the letter of the energy efficiency class in 100 % white, Calibri Bold and in a font size at least equivalent to that of the price, when the price is shown;
 - (b) for household washer-dryers: an arrow, containing the letter of the energy efficiency class for the complete cycle in 100 % white, Calibri Bold and in a font size at least equivalent to that of the price, when the price is shown;
 - (c) the colour of the arrow matching the colour of the energy efficiency class;
 - (d) the range of available energy efficiency classes in 100 % black; and,
 - (e) the size shall be such that the arrow is clearly visible and legible. The letter in the energy efficiency class arrow shall be positioned in the centre of the rectangular part of the arrow, with a border of 0.5 pt in 100 % black placed around the arrow and the letter of the the energy efficiency class.

By way of derogation, if the visual advertisement, technical promotional material or paper-based distance selling is printed in monochrome, the arrow can be in monochrome in that visual advertisement, technical promotional material or paper-based distance selling.

Figure 1

Coloured/monochrome left/right arrow, with range of energy efficiency classes indicated



5. Telemarketing-based distance selling must specifically inform the customer of the energy efficiency classes of the product and of the range of energy efficiency classes available on the label, and that the customer can access the label and the product information sheet through the product database website, or by requesting a printed copy.
6. For all the situations mentioned in points 1 to 3 and 5, it must be possible for the customer to obtain, on request, a printed copy of the label and the product information sheet.

Annex 8: Information to be provided in the case of distance selling through the internet

1. The appropriate label made available by suppliers in accordance with point 1(g) of Article 4 shall be shown on the display mechanism in proximity to the price of the product. The size shall be such that the label is clearly visible and legible and shall be proportionate to the size specified in Annex 3. The label may be displayed using a nested display, in which case the image used for accessing the label shall comply with the specifications laid down in point 2 of this Annex. If a nested display is applied, the label shall appear on the first mouse click, mouse roll-over or tactile screen expansion on the image.
2. The image used for accessing the label in the case of nested display, as indicated in Figure 2, shall:
 - (a) for household washing machines: be an arrow in the colour corresponding to the energy efficiency class of the product on the label;
 - (b) for household washer-dryers: be an arrow in the colour corresponding to the energy efficiency class of the complete cycle on the label;
 - (c) indicate the energy efficiency class of the product on the arrow in 100 % white, Calibri Bold and in a font size equivalent to that of the price;
 - (d) have the range of available energy efficiency classes in 100 % black; and,
 - (e) have one of the following two formats, and its size shall be such that the arrow is clearly visible and legible. The letter in the energy efficiency class arrow shall be positioned in the centre of the rectangular part of the arrow, with a visible border in 100 % black placed around the arrow and the letter of the energy efficiency class:

Figure 2
Coloured left/right arrow, with range of energy efficiency classes indicated



3. In the case of nested display, the sequence of display of the label shall be as follows:
 - (a) the images referred to in point 2 of this Annex shall be shown on the display mechanism in proximity to the price of the product;
 - (b) the images shall link to the label set out in Annex 3;
 - (c) the label shall be displayed after a mouse click, mouse roll-over or tactile screen expansion on the image;
 - (d) the label shall be displayed by pop up, new tab, new page or inset screen display;
 - (e) for magnification of the label on tactile screens, the device conventions for tactile magnification shall apply;
 - (f) the label shall cease to be displayed by means of a close option or other standard closing mechanism;

- (g) the alternative text for the graphic, to be displayed on failure to display the label, shall be the energy efficiency classes of the product in a font size equivalent to that of the price.
4. The electronic product information sheet made available by suppliers in accordance with point 1(h) of Article 4 shall be shown on the display mechanism in proximity to the price of the product. The size shall be such that the product information sheet is clearly visible and legible. The product information sheet may be displayed using a nested display or by referring to the product database, in which case the link used for accessing the product information sheet shall clearly and legibly indicate 'Product information sheet'. If a nested display is used, the product information sheet shall appear on the first mouse click, mouse roll-over or tactile screen expansion on the link.

Annex 9: Verification procedure for market surveillance purposes

The verification tolerances defined in this Annex relate only to the verification by the market surveillance authority of the declared values and shall not be used by the supplier 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. The values and classes published on the label or in the product information sheet shall not be more favourable for the supplier than the values declared in the technical documentation.

Where a model has been designed to be able to detect it is being tested (e.g. by recognising 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 Technical 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.

As part of verifying the compliance of a product model with the requirements laid down in this Technical Regulation, the market surveillance authority shall apply the following procedure:

1. The market surveillance authority 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 Article 5(3) of Regulation establishing a framework for the setting of Energy Labelling Requirements for Energy related Products (declared values), and, where applicable, the values used to calculate these values, are not more favourable for the supplier than the corresponding values given in the test reports; and
 - (b) the values published on the label and in the product information sheet are not more favourable for the supplier than the declared values, and the indicated energy efficiency class, the airborne acoustical noise emission class and the spin drying efficiency class are not more favourable for the supplier than the class determined by the declared values; and
 - (c) when the market surveillance authority tests 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 9.
3. If the results referred to in points 2(a) or (b) are not achieved, the model and all equivalent models shall be considered not to comply with this Technical Regulation.
4. If the result referred to in point 2(c) is not achieved, the market surveillance authority 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 tolerances given in Table 9.
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 Technical Regulation.

The market surveillance authority shall use the measurement and calculation methods set out in Annex 4.

The market surveillance authority shall only apply the verification tolerances that are set out in Table 9 and shall only use the procedure described in points 1 to 7 for the requirements referred to in this Annex. For the parameters in Table 9, no other tolerances, such as those set out in harmonised standards or in any other measurement method, shall be applied.

Table 9
Verification tolerances

Parameter	Verification tolerances
$E_{W,full}$, $E_{W,½}$, $E_{W,1/4}$, $E_{WD,full}$, $E_{WD,½}$	The determined value (*) shall not exceed the declared value of $E_{W,full}$, $E_{W,½}$, $E_{W,1/4}$, $E_{WD,full}$ and $E_{WD,½}$, respectively, by more than 10 %.
Weighted energy consumption (E_W and E_{WD})	The determined value (*) shall not exceed the declared value of E_W and E_{WD} respectively, by more than 10 %.
$W_{W,full}$, $W_{W,½}$, $W_{W,1/4}$, $W_{WD,full}$, $W_{WD,½}$	The determined value (*) shall not exceed the declared value of $W_{W,full}$, $W_{W,½}$, $W_{W,1/4}$, $W_{WD,full}$ and $W_{WD,½}$, respectively, by more than 10 %.
Weighted water consumption (W_W and W_{WD})	The determined value (*) shall not exceed the declared value of W_W and W_{WD} respectively, by more than 10 %.
Washing efficiency index (I_W and J_W) at all relevant loads	The determined value (*) shall not be less than the declared value of I_W and J_W respectively, by more than 8 %.
Rinsing effectiveness (I_R and J_R) at all relevant loads	The determined value (*) shall not exceed the declared value of I_R and J_R respectively, by more than 1.0 g/kg.
Programme or cycle duration (t_W and t_{WD}) at all relevant loads	The determined value (*) of the programme or cycle duration shall not exceed the declared value of t_W and t_{WD} respectively by more than 5 % or by more than 10 minutes, whichever is smaller.
Maximum temperature inside the laundry (T) during the washing cycle at all relevant loads	The determined value (*) shall not be less than the declared value of T by more than 5K and it shall not exceed the declared value of T by more than 5K.
Weighted remaining moisture content after washing (D)	The determined value (*) shall not exceed the declared value of D by more than 10 %.
Final moisture content after drying at all relevant loads	The determined value (*) shall not exceed 3.0 %.
Spin speed (S) at all relevant loads	The determined value (*) shall not be less than the declared value of S by more than 10 %.
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 (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.	

Annex 10: Multi-drum household washing machines and multi-drum household washer-dryers

The provisions of Annexes 2 and 3, following the measurement and calculation methods set out in Annex 4, shall apply to any drum with a rated capacity higher than or equal to 2 kg of multi-drum household washing machines and to any drum with a rated washing capacity higher than or equal to 2 kg of multi-drum household washer-dryers.

The provisions of Annexes 2 and 3 shall apply to each of the drums independently, except when the drums are built in the same casing and can, in the eco 40-60 programme or in the wash and dry cycle, only operate simultaneously. In the latter case, these provisions shall apply to the multi-drum household washing machine or to the multi-drum household washer-dryer as a whole, as follows:

- (a) the rated washing capacity is the sum of the rated washing capacities of each drum; for multi-drum household washer-dryers, the rated capacity is the sum of the rated capacities of each drum;
- (b) the energy and water consumption of the multi-drum household washing machine and of the washing cycle of the multi-drum household washer-dryer is the sum of the energy consumption, or water consumption, of each drum;
- (c) the energy and water consumption of the complete cycle of the multi-drum household washer-dryer is the sum of the energy consumption, or water consumption, of each drum;
- (d) the Energy Efficiency Index (EEL_w) is calculated using the rated washing capacity and energy consumption; for multi-drum household washer-dryers, the Energy Efficiency Index (EEL_{wd}) is calculated using the rated capacity and energy consumption;
- (e) the duration is the duration of the longest eco 40-60 programme, or wash and dry cycle, operating in each drum;
- (f) the remaining moisture content after washing is calculated as the weighted average, according to each drum's rated capacity;
- (g) for household multi-drum washer-dryers, the final moisture content after drying is measured individually for each drum;
- (h) the measurement of low power modes, of the acoustic airborne noise emissions and the acoustic airborne noise emissions class apply to the whole household washing machine.

The product information sheet and the technical documentation shall include and present jointly the information required under Annex 5 and Annex 6, respectively, for all the drums to which the provisions of this annex apply.

The provisions of Annexes 7 and 8 apply to each of the drums to which the provisions of this annex apply.

The verification procedure set out in Annex 9 applies to the multi-drum household washing machine and to the multi-drum household washer-dryer as a whole, with the verification tolerances applying to each of the parameters determined in application of this Annex.