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ANNEXES 1 to 10

## **ANNEXES**

**to the**

### **COMMISSION DELEGATED REGULATION**

**supplementing Regulation (EU) 2017/1369 of the European Parliament and of the Council with regard to energy labelling of refrigerating appliances**

**repealing Regulation (EU) No 1060/2010 with regard to energy labelling of household refrigerating appliances**

## ANNEX I

### Definitions applicable for the Annexes

- (1) ‘energy efficiency class’ means a class ranging from A to G determined on the basis of the EEI of the appliance, as set out in Annex II;
- (2) ‘wine storage appliance’ means a dedicated refrigerating appliance for the storage of wine, with precision temperature control for the storage conditions and target temperature as defined Annex IV, Table 2, and equipped with anti-vibration measures;
- (3) ‘QR code’ is a barcode included on the label which when scanned will link to the public part of the product database and/or to model information on the supplier’s website;
- (4) ‘annual energy consumption’ ( $AE$ ) means the average daily energy consumption multiplied with 365 (days per year) expressed in kWh, as calculated in Annex IV.3;
- (5) ‘freezer’ means a refrigerating appliance with only frozen compartments, at least one of which is a freezer compartment;
- (6) ‘frozen compartment’ means a compartment type with a target temperature equal to or below 0°C; i.e. a 0-star, 1-star, 2-star, 3-star or 4-star compartment, with storage conditions and target temperatures, as set out in Annex IV, Table 2;
- (7) ‘chill compartment’ means a compartment which is able to control its average temperature within a certain range without adjustments of its control, with a target temperature equal to 2°C, and storage conditions ranging from -3 °C to 3 °C, as set out in Annex IV, Table 2;
- (8) ‘fresh food compartment’ means an unfrozen compartment with a target temperature of 4 °C and storage conditions ranging from 0 °C to 8 °C, as set out in Annex IV, Table 2;
- (9) ‘unfrozen compartment’ means a compartment type with a target temperature equal to or above 4 °C, i.e. a pantry, wine storage, cellar or fresh food compartment with storage conditions and target temperatures, as set out in Annex IV, Table 2;
- (10) ‘airborne acoustical noise emission’ means the sound power level of the refrigerating appliance, expressed in dB(A) re 1 pW (A-weighted);
- (11) ‘anti-condensation heater’ means a heater which prevents condensation on the refrigeration appliance;
- (12) ‘daily energy consumption’ ( $E_{daily}$ ) means the electricity used by a refrigerating appliance over 24 hours at reference conditions expressed in kWh/24h, calculated as per Annex III.4;
- (13) ‘ambient controlled anti-condensation heater’ means a heater which prevent condensation on the refrigeration appliance and where the heating capacity is depending on either the ambient temperature or the ambient humidity or both;
- (14) ‘auxiliary energy’ ( $E_{aux}$ ) means the energy used by functions or features that affect the energy consumption of a refrigerating appliance, which is limited to the ambient controlled anti-condensation heater and where their actual energy consumption depends on the conditions of use or operation in kWh/a;
- (15) ‘through-the-door device’ means a device that dispenses chilled or frozen load on demand from a refrigerating appliance, through an opening in its external door and

without opening that external door. Examples are ice-cube dispensers or chilled water dispensers;

- (16) ‘variable temperature compartment’ means a compartment intended for use as two (or more) alternative compartment types (e.g. a compartment that can be either a fresh food compartment or freezer compartment) and which is capable of being set by a user to continuously maintain the operating temperature range applicable for each compartment type claimed. A compartment intended for use as a single compartment type that can also meet storage conditions of other compartment types (e.g. a chill compartment that may also fulfil zero-star requirements) is not a variable temperature compartment;
- (17) ‘compartment type’ means the declared compartment type in accordance with the refrigerating performance parameters  $T_{min}$ ,  $T_{max}$ ,  $T_c$  and others as set out in Annex IV, Table 2;
- (18) ‘network’ means a communication infrastructure with a topology of links, an architecture, including the physical components, organisational principles, communication procedures and formats (protocols);
- (19) ‘specific freezing capacity’ (x) means the rate of heat extraction by an appropriately loaded compartment to bring the temperature of the light load from +25 to –18 °C at an ambient temperature of 25 °C, expressed in kg/12h, and in accordance with Annex III.1(i);
- (20) ‘minimum temperature’ ( $T_{min}$ ) means the minimum temperature inside a compartment during storage testing, as set out in Annex IV, Table 2;
- (21) ‘maximum temperature’ ( $T_{max}$ ) means the maximum temperature inside a compartment during storage testing, as set out in Annex IV, Table 2;
- (22) ‘target temperature’ ( $T_c$ ) means the reference temperature inside a compartment c during testing as set out in Annex IV, Table 2, and relates to the maximum temperature for testing energy consumption expressed as the average over time and over a set of sensors;
- (23) ‘pantry compartment’ means an unfrozen compartment with a target temperature of 17 °C and storage conditions ranging from 14 °C to 20 °C, as set out in Annex IV, Table 2;
- (24) ‘wine storage compartment’ means an unfrozen compartment with a target temperature of 12 °C and storage conditions ranging from 5 °C to 20 °C, as set out in Annex IV, Table 2;
- (25) ‘cellar compartment’ means an unfrozen compartment with a target temperature of 12 °C and storage conditions ranging from 2 °C to 14 °C, as set out in Annex IV, Table 2;
- (26) ‘0-star compartment’ and ‘ice-making compartment’ means a frozen compartment with a target temperature and storage conditions of 0°C, as set out in Annex IV, Table 2;
- (27) ‘1-star compartment’ means a frozen compartment with a target temperature and storage conditions of -6 °C, as set out in Annex IV, Table 2;
- (28) ‘2-star compartment’ means a frozen compartment with a target temperature and storage conditions of -12 °C, as set out in Annex IV, Table 2;

- (29) ‘3-star compartment’ means a frozen compartment with a target temperature and storage conditions of -18 °C, as set out in Annex IV, Table 2;
- (30) ‘freezer compartment’ or ‘4-star compartment’ means a frozen compartment with a target temperature and storage conditions of -18 °C and which fulfils the requirements for the specific freezing capacity as indicated in Annex IV.1.(j);
- (31) ‘defrost and recovery period’ means the period from the initiation of a defrost control cycle until stable operating conditions are re-established;
- (32) ‘auto-defrost’ means a feature by which compartments are defrosted without user intervention to initiate the removal of frost accumulation at all temperature-control settings or to restore normal operation, and the disposal of the defrosted water is automatic;
- (33) ‘defrosting type’ means the method to remove frost accumulation on the evaporator(s) of a refrigerating appliance, i.e. auto-defrost or manual defrost;
- (34) ‘steady state power consumption’ ( $P_{ss}$ ) means the average power consumption in steady state conditions, expressed in Watts (W);
- (35) ‘incremental defrost and recovery energy consumption’ ( $\Delta E_{d-f}$ ) means the extra average energy consumption for a defrost and recovery operation expressed in Wh;
- (36) ‘defrost interval’ ( $t_{d-f}$ ) means the representative average interval between the time of activation of the defrost heater, or the time of deactivation of the compressor if there is no defrost heater, in two subsequent defrost and recovery cycles expressed in h;
- (37) ‘standard annual energy consumption’ (SAE) means the reference annual energy consumption of a refrigeration appliance expressed in kWh, as calculated in Annex IV.4;
- (38) ‘compartment volume’ ( $V_c$ ) means the volume of the space within the inside liner of the compartment, expressed in dm<sup>3</sup> or litres;
- (39) ‘thermodynamic parameter’ ( $r_c$ ) means a modelling parameter which corrects the standard annual energy consumption to an ambient temperature of 24°C, with values as set out in Annex IV, Table 3;
- (40) ‘c’ means the index number suffix for a compartment type in an appliance;
- (41) ‘M<sub>c</sub>’ and ‘N<sub>c</sub>’ means modelling parameters that take into account the volume-dependence of the energy use, with values as set out in Annex IV, Table 3;
- (42) ‘combi parameter’ (C) means a modelling parameter that takes into account the synergy effect when different compartment types are combined in one appliance, with values as set out in Annex IV, Table 3;
- (43) ‘refrigerator’ means a refrigerating appliance with at least one fresh food compartment;
- (44) ‘refrigerator-freezer’ means a combi appliance that has at least one freezer compartment and one or more unfrozen or chill compartments, of which at least one is a fresh food compartment;
- (45) ‘combi appliance’ means a refrigerating appliance that has more than one compartment type. An appliance with a 3- or 4-star compartment with a 2-star section or sub-compartment is not a combi appliance;

- (46) ‘defrost factor’ ( $A_c$ ) means a compensation factor that takes into account whether the refrigerating appliances has an auto-defrost or a manual defrost, with values as set out in Annex IV, Table 4;
- (47) ‘built-in factor’ ( $B_c$ ) means a compensation factor that takes into account whether the refrigerating appliances is built-in or freestanding, with values as set out in Annex IV, Table 4;
- (48) ‘door heat loss factor’ ( $D$ ) ‘door heat loss factor’ ( $D$ ) means a compensation factor for combi appliances according to the number of different temperature compartments or the number of doors, whichever is lower and as set out in Annex IV, Table 4. For the purpose of this factor, ‘compartment’ does not refer to sub-compartment;
- (49) ‘load factor’ ( $L$ ) means a compensation factor for the extra cooling load from introducing warm foodstuffs beyond what is already anticipated through the higher average ambient temperature for testing with values as set out in Annex IV, Table 4;
- (50) ‘spare part’ means a separate part that can replace a part with the same or similar function in a product;
- (51) ‘commercial guarantee’ means any undertaking by the trader or a producer (the guarantor) to the consumer, in addition to any legal obligation relating to the guarantee of conformity, to reimburse the price paid or to replace, repair or service goods in any way if they do not meet the specifications or any other requirements not related to conformity set out in the guarantee statement or in the relevant advertising available at the time of, or before, the conclusion of the contract;
- (52) ‘climate class’ means the range of ambient temperatures, as per Annex IV.1.(k), in which the refrigerating appliances are intended to be used, and for which the required storage temperatures specified in Table 2 are met;
- (53) ‘manual defrost’ means not having an auto-defrost feature;
- (54) ‘freestanding appliance’ means a refrigerating appliance that is not a built-in appliance;
- (55) ‘built-in appliance’ means a refrigerating appliance that is designed, tested and marketed exclusively:
- (a) to be installed in cabinetry or encased (top, 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;
- (56) ‘overall dimensions’ means the space taken up by the refrigerating appliance (height, width and depth) with doors or lids closed, expressed in millimetres;
- (57) ‘2-star section’ means part of a 3-star or 4-star compartment which does not have its own individual access door or lid and in which the temperature is not warmer than  $-12\text{ }^{\circ}\text{C}$ ;
- (58) ‘temperature rise time’ means the time taken, after the operation of the refrigerated system has been interrupted, for the temperature in a 3- or 4-star compartment to increase from  $-18$  to  $-9\text{ }^{\circ}\text{C}$  expressed in hours (h);
- (59) ‘winter switch’ means a control feature for a refrigerator-freezer with one compressor and one thermostat in the fresh food compartment, consisting of a switching device that guarantees, even if it would not be required for the fresh food

compartment, that the compressor keeps on working to maintain the proper minimum temperature in the freezer compartment;

- (60) ‘fast freeze’ means a feature that can be activated by the end-user according to the manufacturer's instructions, which decreases the storage temperature of the freezer or freezer compartment to achieve a faster freezing of unfrozen foodstuffs;
- (61) ‘display mechanism’ means any screen, including tactile screen, or other visual technology used for displaying internet content to users;
- (62) ‘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;
- (63) ‘tactile screen’ means a screen responding to touch, such as that of a tablet computer, slate computer or a smartphone;
- (64) ‘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. ‘energy efficiency index’ (EEI) means an index number for the relative energy efficiency of a refrigeration appliance expressed in %, as calculated in Annex IV.5;
- (65) ‘equivalent model’ means a model with the same relevant technical and performance characteristics but placed on the market under a different model identifier;
- (66) ‘dedicated refrigerating appliance’ means a refrigerating appliance with only one type of compartment;
- (67) ‘average power consumption’ ( $P$ ) means the average rate of energy consumption of a refrigerating appliance for a specific test condition or operation expressed in Watts.

*ANNEX II*  
**Energy Efficiency classes**

The energy efficiency class of refrigerating appliances shall be determined on the basis of the Energy Efficiency Index (EEI) as set out in Table 1.

**Table 1**  
**Energy efficiency classes of refrigerating appliances**

<b>Energy Efficiency Class</b>	<b>Energy Efficiency Index (EEI)</b>
A	$EEI \leq 41$
B	$41 < EEI \leq 51$
C	$51 < EEI \leq 64$
D	$64 < EEI \leq 80$
E	$80 < EEI \leq 100$
F	$100 < EEI \leq 125$
G	$EEI > 125$

The Energy Efficiency Index (EEI) of a refrigerating appliance shall be determined in accordance with point 5 of Annex IV.

*ANNEX III*  
**Label for refrigerating appliances**

1. LABEL FOR REFRIGERATING APPLIANCES, EXCEPT FOR WINE STORAGE APPLIANCES

(1) Label:

**Label design to be introduced after consumer study finalised 19/6.**

(2) The following information shall be included in the label:

- I. supplier's name or trade mark;
- II. supplier's model identifier;
- III. the energy efficiency class; the head of the arrow containing the energy efficiency class of the refrigerating appliance shall be placed at the same height as the head of the arrow of the relevant energy efficiency class;
- IV. QR-code;
- V. annual energy consumption in kWh per year, AE rounded up to the nearest integer. For dedicated freezer appliances the value of AE shall be divided by 0,9 to demonstrate the additional effect of significant quantities of warm load that are typical for these appliances;
- VI. the sum of the volumes of all frozen compartments, rounded to the nearest integer; if the refrigerating appliance does not contain frozen compartments Update text/ consumer study finalised 19/6;
- VII. the sum of the volumes of all chill compartments, rounded to the nearest integer; if the refrigerating appliance does not contain chill compartments Update text/ consumer study finalised 19/6;
- VIII. the sum of the volumes of all fresh food compartments, rounded to the nearest integer, if the refrigerating appliance does not contain fresh food compartments Update text/ consumer study finalised 19/6;
- IX. the sum of the volumes of all unfrozen compartments excluding the volume of the fresh food compartment, rounded to the nearest integer, if the refrigerating appliance does not contain unfrozen compartments Update text/ consumer study finalised 19/6;
- X. airborne acoustical noise emissions expressed in dB(A) re1 pW, rounded to the nearest integer.

(3) Label design

**Label design to be introduced after consumer study finalised 19/6.**

2. LABEL FOR WINE STORAGE APPLIANCES

(1) Label:

**Label design to be introduced after consumer study finalised 19/6.**

(2) The following information shall be included in the label:

- I. supplier's name or trade mark;
- II. supplier's model identifier;



- III. the energy efficiency class; the head of the arrow containing the energy efficiency class of the refrigerating appliance shall be placed at the same height as the head of the arrow of the relevant energy efficiency class;
- IV. QR-code;
- V. annual energy consumption in kWh per year, AE rounded up to the nearest integer. For dedicated freezer appliances the value of AE shall be divided by 0,9 to demonstrate the additional effect of significant quantities of warm load that are typical for these appliances;
- VI. the number of wine bottles that can be stored in the wine storage appliance;
- VII. airborne acoustical noise emissions in dB(A) re1 pW, rounded to the nearest integer.

(3) LABEL DESIGN

Label design to be introduced after consumer study finalised 19/6.

Whereby:

Updated text to be introduced after consumer study finalised 19/6.

## ANNEX IV

### Measurement and calculation methods

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

1. General conditions for testing:
  - (a) for refrigerating appliances with anti-condensation heaters that can be switched on and off by the end-user, the anti-condensation heaters shall be switched on and - if adjustable - set at maximum heating and included in the annual energy consumption (AE) as daily energy consumption ( $E_{\text{daily}}$ );
  - (b) for refrigerating appliances with ambient controlled anti-condensation heaters, the ambient controlled electric anti-condensation heaters will be switched off or otherwise disabled, where possible, during the measurement of energy consumption. The energy consumption of these heaters shall be determined from their power consumption declared by the manufacturer for a set of ambient temperature and humidity conditions and added to the auxiliary energy;
  - (c) for refrigerating appliances with through-the-door devices that can be switched on and off by the end-user, the through-the-door devices shall be switched on during the energy consumption measurement but not operating;
  - (d) for the measurement of energy consumption, variable temperature compartments shall operate at the lowest temperature that can be set by the user to continuously maintain the temperature range, in Table 2, of the compartment type which has the lowest temperature;
  - (e) for refrigerating appliances that can be digitally connected to a network, this functionality shall not be disabled but there will be no active sending or receiving of data;
  - (f) for the performance of chill compartments:
    - (1) for a variable temperature compartment rated as fresh food and/or chill, the energy efficiency index shall be determined for each temperature condition and the highest value shall be applied;
    - (2) a chill compartment shall be able to control its average temperature within a certain range without user-adjustments of its control;
  - (g) for adjustable volume compartments, when the volumes of two compartments are adjustable relative to one another by the user, the energy consumption and the volume shall be tested when the volume of the compartment with the higher target temperature is adjusted to its minimum volume;
  - (h) for two star compartments or sections:
    - (1) is separated from the three-star or four-star volume by a partition, container, or similar construction;
    - (2) the rated volume does not exceed 20 % of the total volume of the compartment;

- (i) the specific freezing capacity is calculated as 12 times the light load weight, divided by the freezing time to bring the temperature of the light load from +25 to -18 °C at an ambient temperature of 25 °C expressed in kg/12h; the light load weight is 3,5 kg per 100 litre of freezer volume, and should be at least 2,0 kg.
- (j) for 4-star compartments, the freezing time to bring the temperature of the light load from +25 to -18 °C at all ambient temperatures, within the ambient temperature operating range indicated by the manufacturer or importer, is smaller than or equal to 24h;
- (k) for the determination of the climate classes ('acronym' for 'ambient temperature range'): the Extended Temperate (SN) has a temperature range from 10 °C to +32 °C, the Temperate (N) has a temperature range from 16 °C to 32 °C, the Subtropical (ST) with a temperature range from 16 °C to 38 °C, and Tropical (T) has temperature range from 16 °C to 43 °C.

2. Storage conditions and target temperatures per compartment type:

Table 2 gives the storage conditions and target temperature per compartment type.

**Table 2**  
**Storage conditions and target temperature per compartment type**

Group	Compartment type	Note	Storage conditions		$T_c$ note [1]
			$T_{min}$	$T_{max}$	
Name	Name	nr.	°C	°C	°C
Unfrozen compartments	Pantry	[2]	+14	+20	+17
	Wine storage	[3][7]	+5	+20	+12
	Cellar	[2]	+2	+14	+12
	Fresh food	[2]	0	+8	+4
Chill compartment	Chill	[4]	-3	+3	+2
Frozen compartments	0-star & ice-making	[5]	n.a.	0	0
	1-star	[5]	n.a.	-6	-6
	2-star	[5][6]	n.a.	-12	-12
	3-star	[5][6]	n.a.	-18	-18
	freezer (4-star)	[5][6]	n.a.	-18	-18
<p><u>Notes:</u></p> <p>[1] <math>T_c</math> relates to the target temperature for testing energy consumption and is the average over time and over a set of sensors.</p> <p>[2] <math>T_{min}</math> and <math>T_{max}</math> relate to average values measured over the test period (average over time and over a set of sensors).</p> <p>[3] The average temperature variation over the test period for each sensor shall be no more than <math>\pm 0,5</math> K. During a defrost and recovery period the average of all sensors is not permitted to rise more than 1.5 K above the average value of the compartment.</p> <p>[4] <math>T_{min}</math> and <math>T_{max}</math> relate to instantaneous values during the test period.</p> <p>[5] <math>T_{max}</math> relates to the maximum value measured over the test period (maximum over time and over a set of sensors).</p> <p>[6] If the compartment is of the auto-defrosting type, then during a defrost and recovery period, the maximum temperature of all sensors is not permitted to rise more than 3.0 K.</p> <p>[7] <math>T_{min}</math> and <math>T_{max}</math> relate to the average values measured over the test period (average over time for each sensor) and define the maximum allowed temperature operating range</p> <p>n.a.=not applicable</p>					

3. Determination of the Annual Energy Consumption (AE):

(a) For all refrigerating appliances, except for low noise refrigerating appliances:

The energy consumption shall be determined by testing at an ambient temperature of 16 °C and 32 °C.

To determine the energy consumption, the average air temperatures in each compartment shall be equal to or below the target temperatures specified in Table 2 for each compartment type claimed by the supplier. Values above and below target temperatures may be used to estimate the energy consumption at the target temperature for each relevant compartment by interpolation, as appropriate.

The main components of energy consumption to be determined are:

- steady state power consumption ( $P_{ss}$ ), in W, measured at an ambient temperature of 16 °C ( $P_{ss16}$ ) and 32 °C ( $P_{ss32}$ );

- incremental defrost and recovery energy consumption ( $\Delta E_{d-f}$ ), in W, for products with one or more auto-defrost systems (each with its own defrost control cycle) measured at an ambient temperature of 16 °C ( $\Delta E_{d-f16}$ ) and 32 °C ( $\Delta E_{d-f32}$ ). The defrost and recovery energy consumption for a representative number of defrost and recovery periods for each system shall be determined;
- defrost interval ( $t_{d-f}$ ), in h, for products with one or more defrost systems (each with its own defrost control cycle) measured at an ambient temperature of 16°C ( $t_{d-f16}$ ) and 32°C ( $t_{d-f32}$ ). The defrost interval  $t_{d-f}$  shall be determined for each system under a range of conditions;
- auxiliary energy ( $E_{aux}$ ) in kWh/a.

Each of these parameters will be determined through separate (sets of) tests. To improve the efficiency and accuracy of testing, the test period is not fixed, but is determined by whether a ‘steady state’ is reached.

The *AE*, expressed in kWh/a and rounded to two decimal places, is then calculated as follows:

$$AE = 365 \cdot E_{daily} + E_{aux};$$

with the daily energy consumption  $E_{daily}$  in kWh/24h and rounded to three decimal places calculated from the daily energy consumption at an ambient temperature of 16°C ( $E_{16}$ ) and at an ambient temperature of 32 °C ( $E_{32}$ ) as follows:

$$E_{daily} = 0.5 \cdot (E_{16} + E_{32});$$

with

$$E_{16} = 0.001 \cdot 24 \cdot (P_{ss16} + \Delta E_{d-f16} / t_{d-f16}), \text{ and};$$

$$E_{32} = 0.001 \cdot 24 \cdot (P_{ss32} + \Delta E_{d-f32} / t_{d-f32}).$$

- (b) For low noise refrigerating appliances:

The energy consumption shall be determined as in point 3.(a), but at an ambient temperature of 25 °C instead of at 16 °C and 32 °C.

The daily energy consumption  $E_{daily}$  in kWh/24h and rounded to three decimal places for the calculation of the *AE* is then as follows:

$$E_{daily} = E_{25} = 0.001 \cdot 24 \cdot (P_{ss25} + \Delta E_{d-f25} / t_{d-f25}).$$

#### 4. Determination of the Standard Annual Energy Consumption (SAE):

- (a) For all refrigerating appliances:

The Standard Annual Energy consumption *SAE*, in kWh/a and rounded to two decimal places, is calculated as follows:

$$SAE = C \cdot D \cdot L \cdot \sum_{c=1}^n A_c \cdot B_c \cdot [V_c/V] \cdot (N_c + V \cdot r_c \cdot M_c)$$

where *c* is the compartment index suffix and *n* is the total number of compartment types;  $V_c$  (in dm<sup>3</sup> or litres, with one decimal) is the compartment volume;  $V$  (in dm<sup>3</sup> or litres, rounded to the nearest integer) is the volume with  $V \leq \sum_{c=1}^n V_c$ ;  $r_c$ ,  $N_c$ ,  $M_c$  and  $C$  are modelling parameters specific to each compartment with values as set out in Table 3; and  $A_c$ ,  $B_c$ ,  $D$  and  $L$  are the compensation factors with values as set out in Table 4.

Note that for the variable temperature compartments the compartment type with the lowest target temperature is chosen for which it is declared suitable.

- (b) Modelling parameters per compartment type for the calculation of the *SAE*:

The modelling parameters are set out in Table 3.

**Table 3**  
**The values of the modelling parameters per compartment type**

Compartment type	$r_c^a$	$N_c$	$M_c$	$C$
Pantry	0,35	75	0,12	between 1,15 and 1,56 for refrigerator-freezers <sup>b</sup> , 1,15 for other combi appliances, 1,00 for dedicated refrigerating appliances
Wine storage	0,60			
Cellar	0,60			
Fresh food	1,00			
Chill	1,10	138	0,12	
0-star & ice-making	1,20	138	0,15	
1-star	1,50			
2-star	1,80			
3-star	2,10			
Freezer (4-star)	2,10			

<sup>a</sup>  $r_c = (T_a - T_c) / 20$ ; with  $T_a = 24$  °C and  $T_c$  with values as set out in Annex IV, Table 2.

<sup>b</sup>  $C$  for refrigerator-freezers is determined as follows:  
where  $frzf$  is the freezer volume  $V_{freezer}$  as a fraction of total volume with  $frzf = V_{freezer} / V$ :

- if  $frzf \leq 0,3$  then  $C = 1,3 + 0,87 \cdot frzf$ ;
- else if  $0,3 < frzf < 0,7$  then  $C = 1,87 - 1,0275 \cdot frzf$ ;
- else  $C = 1,15$ .

- (c) Correction factors per compartment type in the calculation of the *SAE*:

- (d) The correction factors are set out in Table 4.

**Table 4**  
**The values of the correction factors per compartment type**

Compartment	$A_c$		$B_c$		$D$				$L$	
	Manual defrost	Auto-defrost	Freestanding appliance	Built-in appliance	$\leq 2^a$	$3^a$	$4^a$	$> 4^a$	Dedicated 3-or 4-star <sup>b</sup>	Other
Pantry	1,00		1,00	1,04	1,00	1,02	1,035	1,05	0,90	1,00
Wine storage										
Cellar										
Fresh food										
Chill				1,06						
0-star & ice-	1,00	1,10	1,00	1,10	1,00	1,02	1,035	1,05	0,90	1,00
1-star										
2-star										
3-star										
Freezer (4-star)										
<sup>a</sup> number of doors or compartments, whichever is lowest; <sup>b</sup> for dedicated 3- or 4-star refrigerating appliances or combi appliances with only 3- and 4-star compartments.										

5. Determination of the Energy Efficiency Index (EEI):

The Energy Efficiency Index EEI, expressed in % and rounded to the first decimal place, compares the Annual Energy consumption AE (in kWh/a) with the reference Standard Annual Energy consumption SAE (in kWh/a) and is calculated as:

$$EEI = AE / SAE$$

ANNEX V

**Product information sheet**

1. The information in the product information sheet of refrigerating appliances shall be provided in the order of and set out in Table 5.

**Table 5: Product information sheet**

<b>Supplier's name or trade mark:</b>				
<b>Supplier's address:</b>				
<b>Model identifier:</b>				
<b>Type of refrigerating appliance:</b>				
Low noise appliance:	[yes/no]	Defrost type:	[auto-defrost/manual defrost]	
Wine storage appliance:	[yes/no]	Design type:	[built-in/freestanding]	
Other refrigerating appliance:	[yes/no]	Climate class:	[Extended temperate/ Temperate/ Subtropical/ Tropical]	
<b>General product parameters:</b>				
Parameter	Value	Parameter	Value	
Overall dimensions (millimetre)	x	Volume <sup>a</sup> (dm <sup>3</sup> or l)	x	
Annual Energy Consumption <sup>b</sup> (kWh/year)	x	Energy efficiency class	[A/B/C/D/E/F/G]	
Airborne acoustical noise emissions (dBA re1 pW)	x			
<b>Compartment Parameters<sup>c</sup>:</b>				
Compartment type <sup>d</sup>	Compartment parameters and values			
		Compartment Volume (dm <sup>3</sup> or l)	Recommended temperature setting for optimised food storage (°C)	Specific freezing capacity (kg/12 h)
Pantry	[yes/no]	x	x	-



Wine storage	[yes/no]	x	x	-
Cellar	[yes/no]	x	x	-
Fresh food	[yes/no]	x	x	-
Chill	[yes/no]	x	x	-
0-star or ice making	[yes/no]	x	x	-
1-star	[yes/no]	x	x	-
2-star	[yes/no]	x	x	-
3-star	[yes/no]	x	x	x,x or -
4-star	[yes/no]	x	x	x,x
2-star section	[yes/no]	x	x	-
Variable temperature compartment	compartment types	x	x	x,x or -

**Light source parameters<sup>e</sup>:**

Type of light source	[type]
Energy efficiency class	[A/B/C/D/E/F/G]

**Additional information:**

The weblink to the manufacturer's website, where the information in Annex II.4.(a) of Regulation [product specific ecodesign regulation] is found:

<sup>a</sup> the volume shall match the sum of the individual compartments volumes

<sup>b</sup> for dedicated freezers this value shall be the calculated *AE* value divided by 0,9

<sup>c</sup> in the case that the refrigerating appliances contains multiple compartments of the same type, the lines for these compartments shall be repeated

<sup>d</sup> in the case that a certain compartment type is not present, the compartment parameters and values shall be '-'

<sup>e</sup> as determined in accordance with Regulation [regulation number revised regulation lighting]

2. One product information sheet may cover a number of refrigerating appliances supplied by the same supplier.
3. The information contained in the product information sheet may be given in the form of a copy of the label, either in colour or in black and white. Where this is the case, the information listed in point 1 or in point 2 not already displayed on the label shall also be provided.

*ANNEX VI*  
**Technical documentation**

1. The technical documentation referred to in Article 3(d) shall include the following elements:
  - (a) The information as set out in Annex V.1;
  - (b) The information as set out in Table 6;

**Table 6: Additional information to be included in the technical documentation**

**A general description of the refrigerating model, sufficient for it to be unequivocally and easily identified:**

**General product specifications:**

Parameter	Value	Parameter	Value
Minimum ambient temperature (°C), for which the refrigerating appliance is suitable	x	Maximum ambient temperature (°C), for which the refrigerating appliance is suitable	x
Standard energy consumption (kWh)	x	EEI (%)	x
Temperature rise time (h)	x,xx	Combi parameter	x,xx
Door heat loss factor	x,xx	Load factor	x,xx
Anti-condensation heater type	[manual on-off/ambient controlled/other/none ]		

**Specifications for refrigerating appliances, except for low noise refrigerating appliances:**

Parameter	Value	Parameter	Value
Steady state power consumption at 16 °C	x,xx	Steady state power consumption at 32 °C	x,xx
Daily energy consumption at 16 °C (kWh/24h)	x,xxx	Daily energy consumption at 32 °C (kWh/24h)	x,xxx
Incremental defrost and recovery energy consumption <sup>a</sup> at 16 °C (W)	x	incremental defrost and recovery energy consumption <sup>a</sup> at 32 °C (W)	x

Defrost interval <sup>a</sup> at 16 °C (h)	x,xx	Defrost interval <sup>a</sup> at 32 °C (h)	x,xx
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**Specifications for low noise refrigerating appliances:**

Parameter	Value	Parameter	Value
Steady state power consumption at 25 °C	x,xx	Incremental defrost and recovery energy consumption <sup>a</sup> at 25 °C (W)	x
Daily energy consumption at 25 °C (kWh/24h)	x,xxx	Defrost interval <sup>a</sup> at 25 °C (h)	x,xx

**Compartment Specifications<sup>b</sup>:**

Compartment type <sup>c</sup>	Compartment parameters and values					
	Target temperature in °C	Thermodynamic parameter	N <sub>c</sub>	M <sub>c</sub>	Defrost factor	Built-in factor
Pantry	x	x,xx	x	x,xx	x,xx	x,xx
Wine storage	x	x,xx	x	x,xx	x,xx	x,xx
Cellar	x	x,xx	x	x,xx	x,xx	x,xx
Fresh food	x	x,xx	x	x,xx	x,xx	x,xx
Chill	x	x,xx	x	x,xx	x,xx	x,xx
0-star or ice making	x	x,xx	x	x,xx	x,xx	x,xx
1-star	x	x,xx	x	x,xx	x,xx	x,xx
2-star	x	x,xx	x	x,xx	x,xx	x,xx
3-star	x	x,xx	x	x,xx	x,xx	x,xx
4-star	x	x,xx	x	x,xx	x,xx	x,xx
2-star section	x	x,xx	x	x,xx	x,xx	x,xx

Variable temperature compartment	X	X,XX	X	X,XX	X,XX	X,XX
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**For combi appliances with one thermostat and one compressor:**

Winter switch	[yes/no]
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**For appliances with a frozen compartment:**

Fast freeze	[yes/no]
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**Additional information:**

In case that interpolation or triangulation calculations were used to determine any of the relevant parameters above, these calculations shall be included:

The references of the harmonised standards or other reliable accurate and reproducible methods applied:

<sup>a</sup> only for products with one or more auto-defrost systems

<sup>b</sup> in the case that the refrigerating appliances contains multiple compartments of the same type, the lines for these compartments shall be repeated

<sup>c</sup> in the case that a certain compartment type is not present, the compartment parameters and values shall be ‘-‘

- Where the information included in the technical documentation file for a particular refrigerating appliance model has been obtained by calculation on the basis of design, or extrapolation from other equivalent refrigerating appliances, the documentation shall include details of such calculations or extrapolations, or both, and of tests undertaken by suppliers to verify the accuracy of the calculations undertaken. The information shall also include a list of all other equivalent refrigerating appliance models where the information was obtained on the same basis.

## *ANNEX VII*

### **Information to be provided in the case of distance selling, except distance selling on the Internet**

1. Any paper based distance selling must show the energy class and the range of available efficiency classes as following the example below, with the colour of the arrow matching the letter of the energy class:

Arrow with labelling scale will be introduced when the consumer study finalised 19/6.

It must be possible for the customer to access the full label and the product information sheet through a free access website, or to request a printed copy.

2. Telemarketing based distance selling must specifically inform the customer of the energy class of the product and the range of energy classes available on the label, and that they can access the full label and the product information sheet through a free access website, or by requesting a printed copy.

## ANNEX VIII

### Information to be provided in the case of distance selling through the Internet

1. The appropriate label made available by suppliers in accordance with Article 3(1)(g) 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 point 1.3 and 2.3 of Annex III for refrigerating appliances. 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 3 of this Annex. If 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 shall:
  - (a) be an arrow in the colour corresponding to the energy efficiency class of the product on the label;
  - (b) indicate on the arrow energy efficiency class of the product in white in a font size equivalent to that of the price; and
  - (c) have one of the following two formats:
3. In the case of nested display, the sequence of display of the label shall be as follows:
  - (a) the image 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 image shall link to the label;
  - (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 class of the product in a font size equivalent to that of the price.

The appropriate product information sheet made available by suppliers in accordance with Article 3(1)(b) 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, in which case the link used for accessing the product information sheet shall clearly and legibly indicate 'Product information sheet'. If 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 IX

### Verification procedure for market surveillance purposes

The verification tolerances set out in this Annex relate only to the verification of the measured parameters by Member State authorities and shall not be used by the supplier as an allowed tolerance to establish the values in the technical documentation. The values and classes on the label or in the product fiche shall not be more favourable for the supplier than the values reported in the technical documentation.

When verifying the compliance of a product model with the requirements laid down in this Delegated Regulation, 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 Article 3.3 of Regulation (EU) 2017/1369 (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 is not more favourable for the supplier than the class determined by 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 7.
- (3) If the results referred to in points 2(a) and (b) are not achieved, the model and all models that have been listed as equivalent refrigerating appliance models in the supplier's technical documentation shall be considered not to comply with this Delegated 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 supplier'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 tolerances given in Table 7.
- (6) If the result referred to in point 5 is not achieved, the model and all models that have been listed as equivalent refrigerating appliance models in the supplier's technical documentation shall be considered not to comply with this Delegated 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.

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

The Member State authorities shall only apply the verification tolerances that are set out in Table 7 and shall only use 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 7**  
**Verification tolerances for measured parameters**

Parameters	Verification
Volume	The determined value shall not be less than the declared value by more than 3 % or 1 litre, whichever is the greater value.
Freezing capacity	The determined value shall not be less than the declared value by more than 10 %.
Energy consumption	The determined value shall not exceed the declared value of the annual energy consumption <i>AE</i> by more than 10 %.
Airborne acoustical noise emissions	The determined value shall meet the declared value
Temperature rise time	The determined value shall not exceed the declared value by more than 15 %.



*ANNEX X*

**Displaying the energy class and the range of efficiency classes in visual advertisements and in promotional material**

1. For the purposes of ensuring conformity with the requirements laid down in Article 3(1)(e) and Article 4 (c), the energy class and the range of efficiency classes available on the label shall be shown on visual advertisements as follows, with the colour of the arrow matching the letter of the energy class:

Arrow with labelling scale will be introduced when the consumer study finalised 19/6.

2. For the purposes of ensuring conformity with the requirements laid down in Article 3(1)(f) and Article 4(d) the energy class and the range of efficiency classes available on the label shall be shown in promotional material as follows, with the colour of the arrow matching the letter of the energy class:

Arrow with labelling scale will be introduced when the consumer study finalised 19/6.