

Commission Working Document on possible energy labelling requirements on air-conditioning appliances

- (1) Directive 2010/.../EU requires the Commission to adopt delegated acts for energy related products representing significant potential for energy savings and presenting a wide disparity in performance levels with equivalent functionality.
- (2) Provisions for the energy labelling of air-conditioning appliances were established by Commission Directive 2002/31/EC of 22 March 2002 implementing Council Directive 92/75/EEC with regard to energy labelling of household air-conditioners¹. The scope of the Directive also included water-to-air appliances, which are mainly used in commercial and industrial sectors.
- (3) Commission Directive 2002/31/EC established different labelling scales for different technologies, which did not allow direct comparison of energy efficiency levels between air-conditioning appliances where relevant. The determination of energy efficiency labelling classes was based on measurement tolerances ranging between 10-15%, and on steady-state operation, which does not reflect adequately real-life conditions for these appliances. The widths of energy efficiency classes in the label were constant in absolute terms leading into class widths narrower than tolerances allowed in the measurement standard.
- (4) Technological development in the field of air-conditioning appliances has been rapid in recent years. Several third-countries have introduced stringent minimum energy efficiency requirements and new energy labelling schemes based on seasonal energy efficiency. The ecodesign preparatory study shows that the minimum requirements in place in some third countries are already higher than the A efficiency levels set out in Commission Directive 2002/31/EC.
- (5) The scope of this delegated Regulation includes air-to-air air-conditioning appliances up to 12 kW cooling and/or heating design load. The upper level of 12 kW is the generally agreed limit between small 'domestic' and bigger mainly 'commercial' air-conditioning appliances. Commercial appliances are planned to be subject to a separate measure.
- (6) This delegated Regulation introduces one single energy efficiency scale for all concerned air-conditioning appliances and technologies in order to provide consumers more transparent information on the comparative efficiency of air-conditioning appliances.
- (7) The A triple + class efficiency level is set for the highest benchmark appliance available in the world's air-conditioning market. This will provide an incentive for manufacturers already selling appliances in third country markets to place them also into the EU market.
- (7) Given that air-conditioning appliances are used mainly in part-load conditions in strongly varying local climates in the EU, the efficiency testing of appliances will be changed for most air-conditioning appliances in the scope from the steady-state approach used under the Commission Directive 2002/31/EC to a seasonal efficiency testing that better reflects real-life conditions in which these appliances are used.

¹ OJ L 86, 3.4.2002, p. 26.

Measurement tolerances are harmonised for all appliances to 8% and all energy efficiency classes in the label are introduced with a class width of at least 10%.

- (8) The use of seasonal efficiency in the measurement of the energy efficiency of appliances under this delegated Regulation completely changes the efficiency levels compared with those set out in Commission Directive 2002/31/EC; therefore the energy labelling scales of the Commission Directive 2002/31/EC should not be continued;
- (9) The electricity used by air-conditioning appliances accounts for a significant part of total electricity demand by households and small commercial establishments in the European Union. In addition to the energy efficiency improvements already achieved, the scope for further reducing the energy consumption of these appliances is substantial as there is a wide disparity in the relevant performance levels.
- (10) The delegated Regulation will aim at providing consumers with information closer to real-life performance of air-conditioning appliances. The new energy label will provide incentives for manufacturers to further improve the energy efficiency of air-conditioning appliances and to accelerate the market transformation towards energy-efficient technologies; the existing products have a significant potential for saving energy.
- (11) The combined effect of the provisions set out in this delegated Regulation, and in Commission Regulation (EC) No [nro]/2010 of [date, month] 2010 implementing Directive 2009/125/EC of the European Parliament and of the Council² with regard to ecodesign requirements for air-conditioning appliances and comfort fans could lead to annual electricity savings of X TWh by 2020, compared to the situation if no measures were taken.
- (12) Air-conditioning appliances are often used in rooms where silence is important. In order for end-users to make an informed decision, information on sound power level of air-conditioning appliances should be included on the label recognising the fact that too stringent sound power level requirements can compromise efficiency.
- (13) The information provided on the label should be obtained through reliable, accurate and reproducible calculation and measurement methods that take into account the recognised state of the art calculation and measurement methods including, where available, harmonised standards adopted by the European standardisation bodies, as listed in Annex I to Directive 98/34/EC of the European Parliament and of the Council of 22 June 1998 laying down a procedure for the provision of information in the field of technical standards and regulations and of rules on Information Society services³.
- (14) This delegated Regulation should specify a uniform design and content for the labelling of air-conditioning appliances.
- (15) This delegated Regulation should specify requirements as to the technical documentation and the fiche for air-conditioning appliances.
- (16) This delegated Regulation should specify requirements as to the information to be provided for any form of distance selling, advertisements and technical promotional material of air-conditioning appliances.

² OJ L 285, 31.10.2009, p.10.

³ OJ L 217, .5.8.1998, p. 18.

- (17) It is appropriate to provide for a review of the provisions of this delegated Regulation taking into account technological progress.
- (18) In order to facilitate the transition from Directive 2002/31/EC to this delegated Regulation, and to coordinate with the planned Ecodesign requirements, manufacturers shall have the freedom to voluntarily apply the label in accordance with this delegated Regulation during the first six months after the coming into force of the delegated Regulation. Furthermore, it is suggested that this delegated Regulation come into force six months prior to the coming into force of the first tier ecodesign requirements. During this voluntary implementation period, the label must fully correspond with the requirements set in this delegated Regulation.
- (19) Directive 2002/31/EC should therefore be repealed six (6) months prior to the coming into force of this Regulation.

Subject matter and scope

1. This delegated Regulation establishes requirements for the labelling and the provision of supplementary product information of electric mains-operated air-conditioning appliances with a design load of ≤ 12 kW for cooling – or heating, if the product has no cooling function.
2. This Regulation shall not apply to:
 - a) appliances that use non-electric energy sources;
 - b) air conditioners of which the condenser- and/or evaporator-side can not be supplied by air.

Definitions

In addition to the definitions laid down in Article 2 of Directive 2010/.../EU⁴, the following definitions shall apply:

- (1) 'Air-conditioning appliance' means a device capable of cooling and/or heating indoor air and which is based on the vapour compression cycle driven by an electric compressor and which is either a 'room air-conditioner', a 'double duct' or a 'single duct'. This definition includes 'air-conditioning appliances' that provide additional functionalities such as dehumidification, air-purification, ventilation and/or supplemental air-heating by means of electric resistance heating. This definition also includes appliances that may use water (either condensate that is formed on the evaporator side or externally added water) for evaporation on the condenser, provided that the appliance is also able to function without the use of additional water, using air only;
- (2) 'Room air-conditioner' means an air-conditioning appliance that is neither a double duct nor a single duct;
- (3) 'Double duct' means an 'air-conditioning appliance' placed in the conditioned space near a wall, in which when cooling (heating) the condenser (evaporator) intake air is introduced from the outdoor environment by a small duct and the condenser (evaporator) discharge air is rejected to the outdoor environment by a second small duct;

⁴ The relevant definitions to be added into this delegated Regulation, if timing so requires.

- (4) ‘Design load’ means the declared peak cooling and/or heating power demand in W that the air conditioning appliance can meet at the applicable extreme outdoor temperatures.

Responsibilities of suppliers

1. Suppliers shall ensure that:
 - (1) a label, as set out in Annex III, is made available for air-conditioning appliances placed on the market after [date];
 - (2) a product fiche, as set out in Annex IV, is made available for air-conditioning appliances placed on the market after [date];
 - (3) the technical documentation as set out in Annex V is made available on request to the authorities of the Member States;
 - (5) instructions for use, including the following text:
2. The energy efficiency classes shall be based on the calculation method in accordance with Annex VII.
3. The format of the label shall be as set out in Annex III.

Kommentar [IGS1]: [date to be inserted: six months prior to the coming into force of first ecodesign requirements]

Kommentar [IGS2]: [date to be inserted: date equal to the introduction of the first ecodesign requirements]

Responsibilities of dealers

From [date] dealers shall ensure that:

- (1) air-conditioning appliances at the point of sale bear the label provided by suppliers in accordance with Article 3(1) on the outside of the front or top of the appliance, in such a way as to be clearly visible;
- (2) air-conditioning appliances offered for sale, hire or hire purchase where the end-user cannot be expected to see the product displayed, are marketed with the information provided by suppliers in accordance with Article 3(1)-(2) in the format specified in Annex III;
- (3) any promotional material concerning a specific model which describes the technical parameters of an air-conditioning appliance includes the energy efficiency class(es) of the model;
- (5) standard text to be provided for any form or medium of distance selling, marketing, advertisements and technical promotional material of air-conditioning appliances for a specific model published from [date] as follows:

"The energy efficiency class of this appliance is [energy efficiency class]."

Kommentar [IGS3]: [date to be inserted: six months prior to the coming into force of first ecodesign requirements + 4 months]

Kommentar [IGS4]: [date to be inserted: date equal to the introduction of the first ecodesign requirements + 4 months]

Measurement methods

The information to be provided under Article 3 shall be obtained by reliable, accurate and reproducible measurement procedures, which take into account the recognised state of the art calculation and measurement methods, as set out in Annex VII.

Verification procedure for market surveillance purposes

When Member States assess the conformity of the declared energy efficiency class(es), the annual energy consumption and the sound power level, they shall apply the procedure laid down in Annex VIII.

Revision

The Commission shall review this delegated Regulation in the light of technological progress no later than five years after its entry into force.

Repeal

Directive 2002/31/EC is repealed from [date].

Kommentar [IGS5]: [date to be inserted: six months prior to the coming into force of first ecodesign requirements]

ANNEX I

Definitions applicable for the purposes of Annexes II to VI

For the purposes of Annexes II to VI, the following definitions shall apply:

- (1) 'Functionality' means the indication of whether the unit is intended for space cooling (suffix *c*), heating (suffix *h*) or both;
- (2) 'Design load' (P_{design}) means the declared peak cooling ($P_{designc}$) and/or declared peak heating power ($P_{designh}$) demand in kW at T_{design} outdoor temperature, whereby in heating mode the declaration of the climate-specific $P_{designh}$ values is subject to maximum requirements for the bivalent temperature T_{biv} and the outdoor temperature operating limit T_{ol} , both in °C, and in cooling mode $P_{designc}$ must be equal to the declared capacity P_{dc} of the unit at $T_{designc}$;
- (3) 'Energy Efficiency Ratio' (EER) is the cooling power output in kW divided by the electric power input of a unit at specific operating conditions;
- (4) 'Coefficient of Performance' (COP) is the heating power output of the refrigeration cycle in kW divided by the electric power input in kW of a unit at specific operating conditions;
- (5) ' P_{COP} ' means the electric power input in kW of a unit when providing heating at design load ($P_{designh}$);
- (6) 'Seasonal Energy Efficiency Ratio' ($SEER$) is the cooling season energy efficiency performance, expressed as the ratio between the reference *seasonal cooling demand* in kWh/a and the seasonal electricity consumption for cooling in kWh/a;
- (7) 'Seasonal cooling demand' (Q_C) means the product of $P_{designc}$ and the seasonal numbers of hours H_{CE} the unit has the compressor running to supply cooling in kWh/a;
- (8) 'Seasonal electricity consumption for cooling' (Q_{CE}) means the seasonal cooling demand divided by the weighted average energy efficiency ratio plus the electricity consumption of the unit in the auxiliary modes during the cooling season;
- (9) 'Seasonal Coefficient of Performance' ($SCOP$) is the heating season efficiency performance, expressed as the ratio between the reference seasonal heating energy demand in kWh/a and the seasonal electricity consumption for heating, which may vary according the climate profile chosen in kWh/a;
- (10) 'Seasonal heating demand' (Q_H) means the product of $P_{designh}$ and the seasonal numbers of hours H_{HE} the unit has the compressor running to supply heating in kWh/a;
- (11) 'Seasonal electricity consumption for heating' cooling ($Q_{CE\ for\ A,\ W\ and/or\ C}$) means the seasonal heating demand divided by the weighted average Coefficient of Performance plus the electricity consumption of the unit in the auxiliary modes during the heating season;
- (12) 'Sound power level' means the A-weighted sound power level indoors and outdoors measured during nominal flow rate conditions.

ANNEX II
Energy efficiency classes

1. The energy efficiency classes of air-conditioning appliances shall be determined in accordance with values as set out in Table 1 of this Annex on a voluntary basis from [date] and on a mandatory basis from [date]. The energy efficiency of air-conditioning appliances shall be determined in accordance with Annex VI.

Table 1: Energy efficiency classes

Energy Efficiency Class	SEER/EER	SCOP/COP
A+++	7.0	5,1
A++	> 6.4	> 4.6
A+	> 5.9	> 4.0
A	> 5.2	> 3.4
B	> 4.3	> 3.1
C	> 3.6	> 2.8
D	> 3.1	> 2.5
E	> 2.7	> 2.2
F	≥ 2.3	≥ 1.9
G	< 2.3	< 1.9

Kommentar [IGS6]: [date to be inserted: six months prior to the coming into force of first ecodesign requirements]

Kommentar [IGS7]: [date to be inserted: the date of the introduction of the first ecodesign requirements]

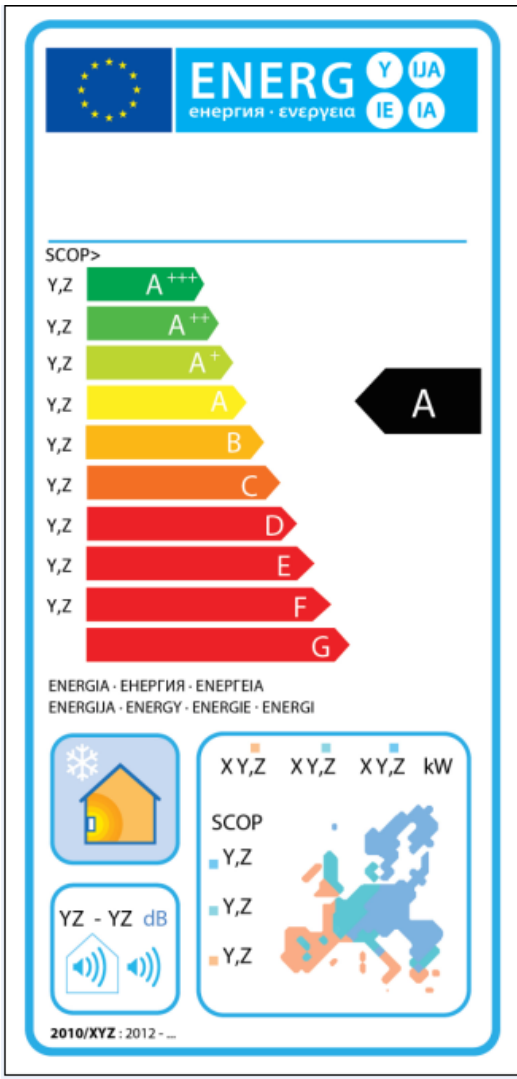
ANNEX III
The label

1. LABEL FOR AIR-CONDITIONING APPLIANCES

If the appliance offers reversible operation then two separate labels shall be supplied:

- For cooling: presenting the general information (specified in item I, II and VI) and cooling performance information (specified in item III and V)
- For heating: presenting general information (specified in item I, II and VI) and the heating performance information (specified in item III and IV);

ENERGY LABEL ON HEATING MODE FOR AIR-CONDITIONING APPLIANCES



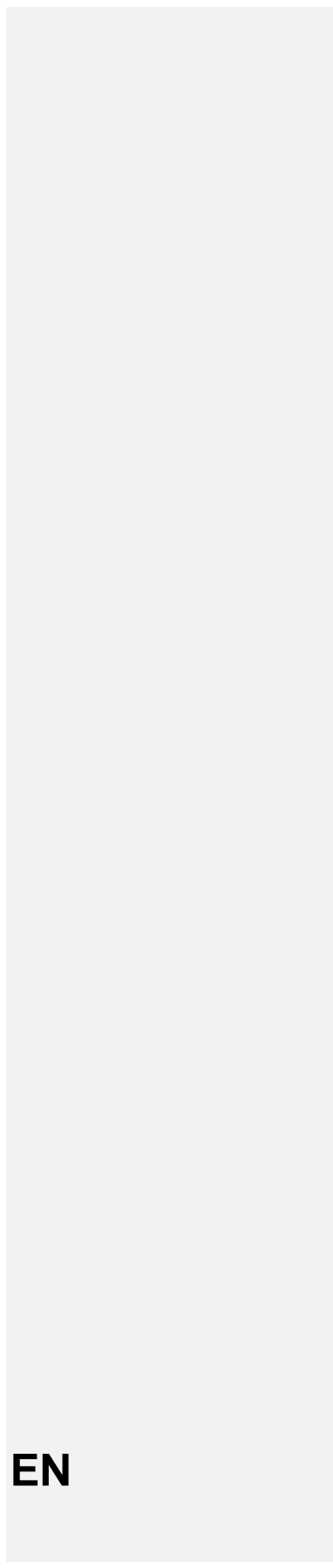
I, II

III

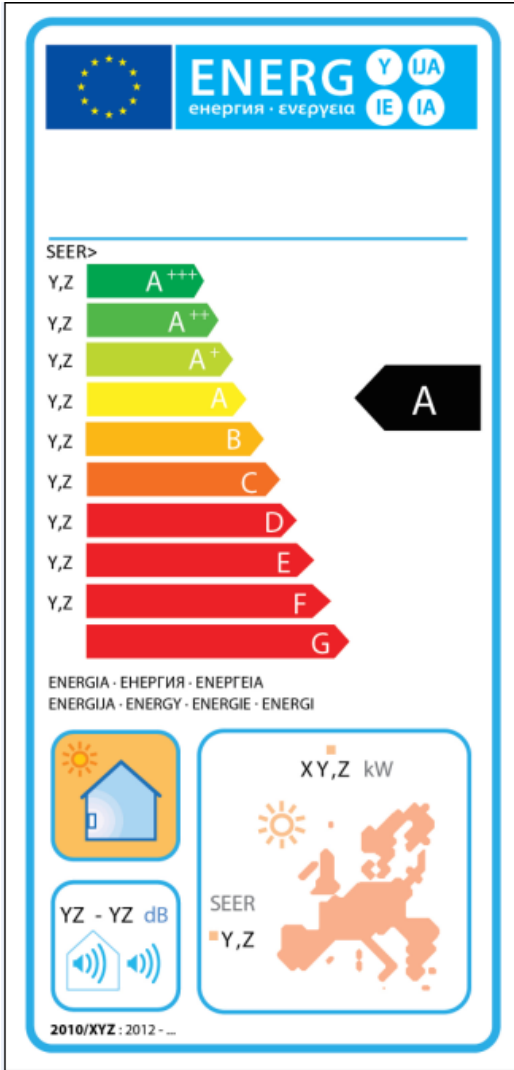
IVb

IVa

VI



ENERGY LABEL ON COOLING MODE FOR AIR-CONDITIONING APPLIANCES



I, II

III

Vb Va

VI

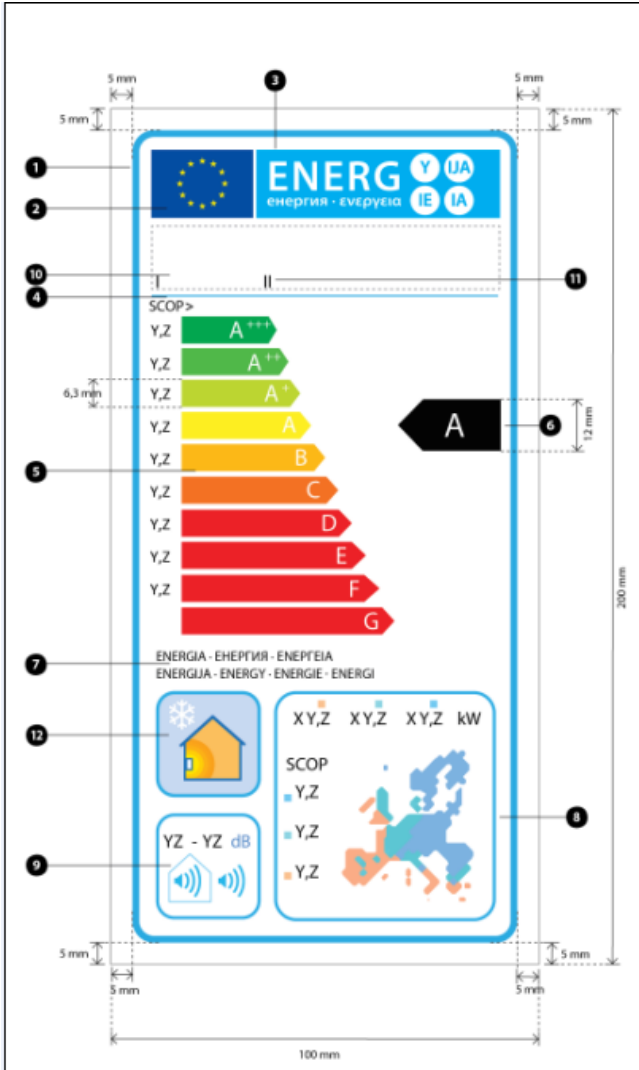
- (a) The following information shall be included in the label:
- I supplier's name or trade mark;
 - II supplier's model identifier;
 - III the lowest (S)EER/(S)COP-levels for each energy efficiency class and the energy efficiency class of the appliance; the head of the arrow containing the energy efficiency class of the appliance shall be placed at the same height as the head of the arrow of the relevant energy efficiency class;
 - IV For heating mode air-conditioning appliances:
 - a) Sign with a symbol for a house and a radiating heating appliance and a snowflake for outdoor climate;
 - b) European map with SCOP value of the appliance and design load in kW, for up to 3 climate profiles or the COP value and the design load if the cooling efficiency is described as EER value, rounded up to the first integer;
 - V For cooling mode air-conditioning appliances:
 - a) Sign with a symbol for a house and a radiating cooling appliance and a sun for outdoor climate;
 - b) European map with SEER value of the appliance and design load in kW or the EER value and the design load, rounded up to the first integer;
 - VI Sound power levels for indoor and outdoor units expressed in dB(A) re 1 pW, rounded to the nearest integer.

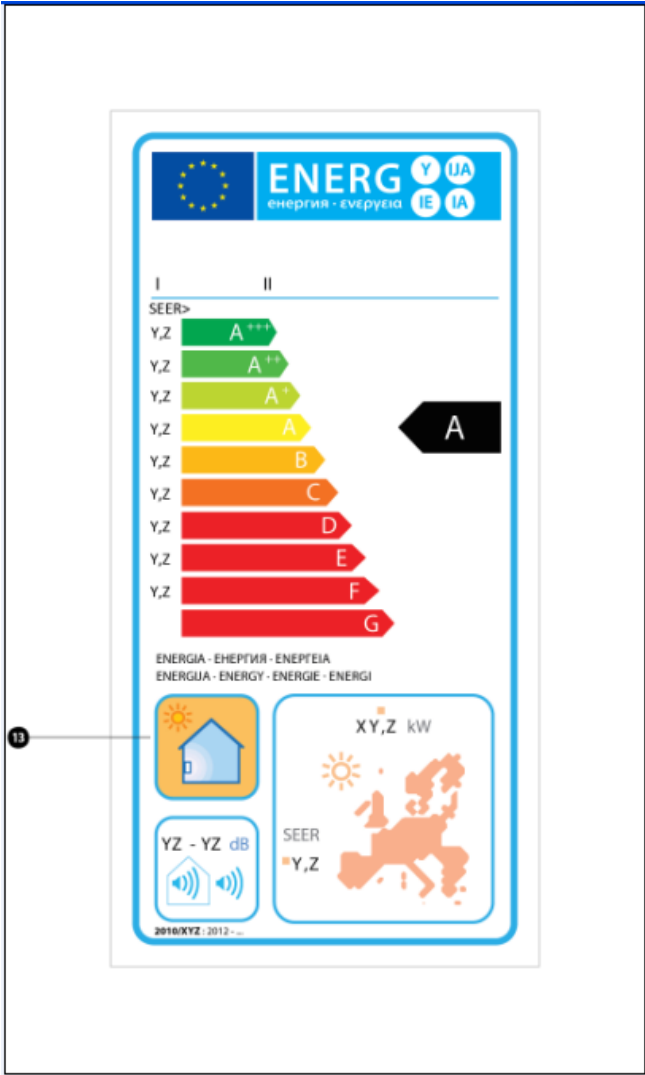
All the requested values shall be determined in accordance with Annex VII.

- (b) The design of the label shall be in accordance with point 2 of this Annex. By way of derogation, where a model has been granted an 'EU eco-label' under Regulation (EC) No 66/2010⁵ of the European Parliament and of the Council of 25 November 2009 on the EU Ecolabel, a copy of the EU eco-label may be added.

⁵ OJ L 27, 30.1.2010, p 1.

2. THE DESIGN OF THE LABELS SHALL BE AS IN THE FIGURES BELOW





Whereby:

- (i) The label shall be at least 110 mm wide and 220 mm high. Where the label is printed in a larger format, its content shall nevertheless remain proportionate to the specifications above.
- (ii) The background shall be white.
- (iii) Colours shall be CMYK — cyan, magenta, yellow and black, following this example: 00-70-X-00: 0 % cyan, 70 % magenta, 100 % yellow, 0 % black.
- (iv) The label shall fulfil all of the following requirements (numbers refer to the figure above):
 - ① **EU label border stroke:** 4.5 pt – colour: Cyan 100% – round corners: 3.5 mm.
 - ② **EU logo** – colours: X-80-00-00 and 00-00-X-00.
 - ③ **Energy label:** colour: X-00-00-00;
Pictogram as supplied: EU logo + energy label: width: 82 mm, height: 16 mm.
 - ④ **Sub-logos border:** 1 pt – colour: Cyan 100% – length: 81 mm.
 - ⑤ **A+++–G scale**
 - **Arrow:** height: 6.3 mm, gap: 1.2 mm – colours:
Highest class: X-00-X-00;
Second class: 70-00-X-00;
Third class: 30-00-X-00;
Fourth class: 00-00-X-00;
Fifth class: 00-30-X-00;
Sixth class: 00-70-X-00;
Last class(es): 00-X-X-00;
 - **Text: “A”:** Myriad Pro Regular 16, capitals, white.
“+”: Myriad Pro Regular 9, white.
- ⑥ **Energy efficiency class**
 - **Arrow:** width: 24 mm, height: 12 mm, 100% black;
 - **Text:** Myriad Pro Regular 23 pt, capitals, white.
- ⑦ **Energy**
 - **Text:** Myriad Pro Regular 9 pt, capitals, black.
- ⑧ **SCOP and/or SEER in kW:**
 - **Border:** 2 pt – colour: Cyan 100% – round corners: 3.5 mm;
 - **Text:** Myriad Pro Regular 10 pt, 100% black;
 - **Colours of the map:** Light blue: 58-00-19-00;
Dark blue: 49-18-00-00;
orange: 00-39-46-00.
- ⑨ **Sound power level:**

- **Pictogram as depicted, Border: 2 pt – colour: cyan 100% – round corners: 3.5 mm.**

⑩ **Supplier's name or trademark**

⑪ **Supplier's model identifier**

The suppliers' name or trade mark and model identifier should fit in a space of 81 x 13 mm.

⑫ **Heating logo** (for heating mode for reversible air-conditioning appliances):

- **Pictogram as depicted, Border: 2 pt – colour: cyan 100% – round corners: 3.5 mm.**

⑬ **Cooling logo** (for cooling mode):

- **Pictogram as depicted, Border: 2 pt – colour: cyan 100% – round corners: 3.5 mm.**

ANNEX IV

Fiche

1. The information in the product fiche shall be given in the order specified below, or given in the description of the appliance. The following notes define the information to be included in the fiche of air-conditioning appliances on the cooling mode:
 - I. Supplier's name or trade mark;
 - II. Supplier's model identifier, i.e. the model identifier of the indoor and of the outdoor elements of the combination to which the figures quoted below apply;
 - III. The energy efficiency class of the model, or combination, determined in accordance with definitions and test procedures in Annex I and VII for the cooling mode as well as the class limits defined previously in the underlying Annex II;
2. The following notes define the information to be included in the fiche on the heating mode of air-conditioning appliances:
 - I. Supplier's name or trade mark;
 - II. Supplier's model identifier, i.e. the model identifier of the indoor and of the outdoor elements of the combination to which the figures quoted below apply;
 - III. The energy efficiency class of the model, or combination, in heating mode determined in accordance with definitions and test procedures in Annex I and VII as well as the class limits defined previously in the underlying Annex II;
3. Standard text as follows:

“Refrigerant leakage contributes to climate change. This appliance contains a refrigerant fluid with a global warming potential (GWP) equal to [xxx⁶]. Favouring appliances using refrigerants of GWP below 150 will reduce environmental impact in the case of refrigerant leakage. The most climate-friendly refrigerants available on the market have a GWP =1. Never try to disassembly the product yourself and always ask a professional.”.
4. Without prejudice to any requirements under the Community eco-label scheme, where a model has been granted a European Union eco-label under the Regulation (EC) No 66/2010 of the European Parliament and of the Council of 25 November 2009, a copy of the eco-label may be added;
5. One fiche may cover a number of appliance models supplied by the same supplier;
6. The information contained in the fiche 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 not already displayed on the label shall also be provided.

⁶ For HFCs, as defined in F-gas Regulation 842/2006, Annex 1.

Annex V
Technical documentation

1. The technical documentation referred to in point 3 of Article 3 (1) shall include at minimum:
 - (a) the name and address of the supplier;
 - (b) a general description of the appliance model, sufficient for it to be unequivocally and easily identified, including:
 - (i) overall dimensions;
 - (ii) overall space required in use;
 - (iii) specification whether the appliances is design for cooling or heating only or for both;
 - (iv) the energy efficiency class of the model as defined in Annex II;
 - (v) climate profile for which the appliance is declared fit for purpose;
2. Suppliers may include additional information at the end of the above list.
3. Where the information included in the technical documentation file for a particular air-conditioning appliance model has been obtained by calculation on the basis of design, or extrapolation from other equivalent appliance, or both, 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 appliance models where the information was obtained on the same basis.

ANNEX VI

Distance selling and other forms of selling where end-users cannot be expected to see the physical product displayed

1. The information referred to in Article 4(2) shall be provided in the following order:
 - (a) The energy efficiency class of the model as defined in Annex II;
 - (b) The cooling efficiency (SEER/EER) and/or heating efficiency (SCOP/COP, for up to 3 climates for SCOP, always including the Average climate);
 - (c) If 'heating' applies: climate profile for which the appliance is declared fit for purpose;
 - (b) Sound power level expressed in dB(A) re1 pW, rounded to the nearest integer.
2. Where other information contained in the product information fiche is also provided, it shall be in the form and order specified in Annex IV.
3. The size and font in which all the information referred in this Annex is printed or shown shall be legible.

ANNEX VII
Measurements and calculations

For the purposes of compliance and verification of compliance with the requirements of this delegated Regulation, measurements and calculations shall be made using a reliable, accurate and reproducible method, which takes into account the generally recognised state of the art methods, and whose results are deemed to be of low uncertainty, including methods set out in documents the reference numbers of which have been published for that purpose in the Official Journal of the European Union. They shall fulfil all of the following technical parameters.

The cooling efficiency of room air-conditioners shall be determined as the representative seasonal cooling energy demand divided by the representative seasonal electric energy consumption. For single ducts the cooling efficiency shall be established at specific operating conditions.

The heating efficiency of air-conditioning appliances shall be determined as the representative seasonal heating energy demand divided by the representative seasonal electric energy consumption.

The determination of the seasonal energy consumption for cooling and/or heating of air-conditioning appliances shall take into account:

- European climate conditions, as defined in table 1 below;
- Relevant boundary conditions of operation, as defined in table 2 below;
- Electric energy inputs of all relevant modes of operation, as defined in table 3 below.

Table 1. – bin number j, outdoor temperature Tj in °C and number of hours per bin hj corresponding to the reference heating seasons “warmer”, “average”, “colder”

COOLING SEASON			HEATING SEASONS			Warmer (W)	Average (A)	Colder (C)
j	Tj	hj	j	Tj	hj W	hjA	hjC	
#	°C	hrs	#	°C	hrs	hrs	hrs	
1	17	205	1 to 8	-30 to -23	0	0	0	
2	18	227	9	-22	0	0	1	
3	19	225	10	-21	0	0	6	
4	20	225	11	-20	0	0	13	
5	21	216	12	-19	0	0	17	
6	22	215	13	-18	0	0	19	
7	23	218	14	-17	0	0	26	

8	24	197	15	-16	0	0	39
9	25	178	16	-15	0	0	41
10	26	158	17	-14	0	0	35
11	27	137	18	-13	0	0	52
12	28	109	19	-12	0	0	37
13	29	88	20	-11	0	0	41
14	30	63	21	-10	0	1	43
15	31	39	22	-9	0	25	54
16	32	31	23	-8	0	23	90
17	33	24	24	-7	0	24	125
18	34	17	25	-6	0	27	169
19	35	13	26	-5	0	68	195
20	36	9	27	-4	0	91	278
21	37	4	28	-3	0	89	306
22	38	3	29	-2	0	165	454
23	39	1	30	-1	0	173	385
24	40	0	31	0	0	240	490
			32	1	0	280	533
total		2602	33	2	3	320	380
			34	3	22	357	228
			35	4	63	356	261
			36	5	63	303	279
			37	6	175	330	229
			38	7	162	326	269
			39	8	259	348	233
			40	9	360	335	230
			41	10	428	315	243

	42	11	430	215	191
	43	12	503	169	146
	44	13	444	151	150
	45	14	384	105	97
	46	15	294	74	61
		total	3590	4910	6446

Table 2: Indoor and outdoor (Tdesign) air temperatures, bivalent point (Tbiv) and operating limit (Tol) temperatures per climate profile (all values are dry bulb temperatures with wet bulb temperatures indicated between brackets).

functionality	Appliance type		Evaporator side (indoor air temp.)	Condensator side (outdoor air temp. Tdesignc)		
cooling	single duct		35 (24) °C	35 (24) °C *		
	room air-conditioner and double duct		27 (19) °C	35 (24) °C		
		climate profile (suffix A/W/C)	Condensator side (indoor air temp.)	Evaporator side (outdoor air temp. TdesignhA/W/C)	Maximum bivalent point (TbivA/W/C)	Maximum operating limit (TolA/W/C)
heating	single duct	Average	20 (12) °C	20 (12) °C *	n.a.	n.a.
	double duct (≤ 1 kW input power)	Average	20 (15 max) °C	7 (6) °C	n.a.	n.a.
	room air-conditioner and double duct (> 1 kW input power)	Average	20 (15 max) °C	-10 (-11) °C	2 °C	-7 °C
		Warmer	20 (15 max) °C	2 (-11) °C	7 °C	2 °C
		Colder	20 (15 max) °C	-22 (-23) °C	-7 °C	-15 °C

* = In case of single ducts the condensator/evaporator in cooling/heating mode is not supplied by outdoor air, but indoor air.

Table 3. Time periods in hrs./ for cooling and heating seasons for each mode

COOLING

Cooling Only (for SEER)

Cooling and heating (for SEER)

on mode	thermostat (cooling) off mode	crankcase heater mode	off mode	standby mode	on mode	thermostat- (cooling) off mode	crankcase heater mode	off mode	standby mode
350	221	7760	5088	2142	350	221	2672	0	2142

HEATING

Heating Only (for SCOP)

Cooling and Heating (for SCOP)

Climate profile	on mode	thermostat (heating) off mode	crankcase heater mode	off mode	on mode	thermostat- (heating) off mode	crankcase heater mode	off mode
A	1400	179	3851	3672	1400	179	179	0
W	1400	755	2944	2189	1400	755	755	0
C	2100	131	4476	4345	2100	131	131	0

ANNEX VIII

Verification procedure for market surveillance purposes

For the purposes of checking conformity with the requirements laid down in Directive 2010/.../EU, the authorities of the Member States shall apply the following verification procedure for the requirements set out in Annexes II - VI.

1. The authorities of the Member State shall test one single unit.
2. In case of air-conditioning appliances the model shall be considered to comply with the provisions set out in this Regulation, if its seasonal energy efficiency ratio SEER for cooling is at least the target value $\pm 8\%$ and/or its coefficient of performance SCOP for heating is at least the target value $\pm 8\%$, established in accordance with Annex VII.
In case of comfort fans the model shall be considered to comply with the provisions set out in this Regulation, if its service value SV is at the most $\pm 8\%$.
3. If the result referred to in point 2 is not achieved, the market surveillance authority shall randomly test three additional units.
4. In case of air-conditioning appliances the model shall be considered to comply with the provisions set out in this Regulation if the average SEER of the three units referred to in point 3 is at least the target value $\pm 5\%$ and/or the average SCOP of the three units referred to in point 3 is at least the target value $\pm 5\%$, established in accordance with Annex VII.
In case of comfort fans the model shall be considered to comply with the provisions set out in this Regulation, if the average service value SV of the three units is at the most $\pm 5\%$.
5. If the results referred to in point 4 are not achieved, the model shall be considered not to comply with this Regulation.

For the purposes of checking conformity with the requirements of this Regulation, Member States shall apply the procedures referred to in Annex VII and reliable, accurate and reproducible calculation and measurement methods, which take into account the generally recognised state-of-the-art, including methods set in calculation methods and standards the reference numbers of which have been published for that purpose in the Official Journal of the European Union.