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## ANNEX I

### Definitions applicable for the purposes of Annexes II to VII

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

- (1) ‘*Reversible air conditioner*’ means an air conditioner capable of both cooling and heating;
- (2) ‘*Standard rating conditions*’ means the combination of indoor ( $T_{in}$ ) and outdoor temperatures ( $T_j$ ) that describe the operating conditions while establishing the sound power level, rated capacity, rated air flow rate, rated energy efficiency ratio ( $EER_{rated}$ ) and/or rated coefficient of performance ( $COP_{rated}$ ), as set out in Annex VII, table 2;
- (3) ‘*Indoor temperature*’ ( $T_{in}$ ) means the dry bulb indoor air temperature [ $^{\circ}C$ ] (with the relative humidity indicated by the corresponding wet bulb temperature);
- (4) ‘*Outdoor temperature*’ ( $T_j$ ) means the dry bulb outdoor air temperature [ $^{\circ}C$ ] (with the relative humidity indicated by the corresponding wet bulb temperature);
- (5) ‘*Rated energy efficiency ratio*’ ( $EER_{rated}$ ) means the *declared capacity* for cooling [kW] divided by the *rated power input for cooling* [kW] of a unit when providing cooling at *standard rating conditions*;
- (6) ‘*Rated coefficient of performance*’ ( $COP_{rated}$ ) means the declared capacity for heating [kW] divided by the *rated power input for heating* [kW] of a unit when providing heating at *standard rating conditions*;
- (7) ‘*Global warming potential*’ ( $GWP$ ) means the measure of how much 1 kg of the refrigerant applied in the vapour compression cycle is estimated to contribute to global warming, expressed in kg CO<sub>2</sub> equivalents over a 100 year time horizon;

$GWP$  values considered will be those set out in Annex I of Regulation (EC) No 842/2006 of the European Parliament and of the Council<sup>(1)</sup>;

for fluorinated refrigerants, the  $GWP$  values shall be those published in the Third Assessment Report (TAR), adopted by the Intergovernmental Panel on Climate Change<sup>(2)</sup> (2001 IPCC  $GWP$  values for a 100 year period);

for non-fluorinated gases, the  $GWP$  values are those published in the first IPCC assessment<sup>(3)</sup> over a 100 year period;

total  $GWP$  values for mixtures of refrigerants shall be based on the formula stated in Annex I of the Regulation (EC) No 842/2006;

for refrigerants not included in the above references, the IPCC UNEP 2010 report on Refrigeration, Air Conditioning and Heat Pumps, dated February 2011, or newer, shall be used as a reference;

- (8) ‘*Off mode*’ is a condition in which the air conditioner or comfort fan is connected to the mains power source and is not providing any function. As off mode also are considered conditions providing only an indication of off mode condition, as well as conditions providing only functionalities intended to ensure electromagnetic compatibility pursuant to Directive 2004/108/EC of the European Parliament and of the Council<sup>(4)</sup>;

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- (9) ‘*Standby mode*’ means a condition where the equipment is connected to the mains power source, depends on energy input from the mains power source to work as intended and provides only the following functions, which may persist for an indefinite time: reactivation function, or reactivation function and only an indication of enabled reactivation function, and/or information or status display;
- (10) ‘*Reactivation function*’ means a function facilitating the activation of other modes, including active mode, by remote switch including remote control, internal sensor, timer to a condition providing additional functions, including the main function;
- (11) ‘*Information or status display*’ is a continuous function providing information or indicating the status of the equipment on a display, including clocks;
- (12) ‘*Sound power level*’ means the A-weighted sound power level [ $dB(A)$ ] indoors and/or outdoors measured at *standard rating conditions* for cooling (or heating, if the product has no cooling function);
- (13) ‘*Reference design conditions*’ means the combination of requirements for the *reference design temperature*, the maximum *bivalent temperature* and the maximum *operation limit temperature*, as set out in Annex VII, Table 3;
- (14) ‘*Reference design temperature*’ means the *outdoor temperature* [ $^{\circ}C$ ] for either cooling ( $T_{designc}$ ) or heating ( $T_{designh}$ ) as described in Annex VII, Table 3, at which the *part load ratio* shall be equal to 1, and which varies according the designated cooling or heating *season*;
- (15) ‘*Part load ratio*’ ( $pl(T_j)$ ) means the *outdoor temperature minus*  $16^{\circ}C$ , divided by the *reference design temperature minus*  $16^{\circ}C$ , for either cooling or heating;
- (16) ‘*Season*’ means one of the four sets of operating conditions (available for four seasons: one *cooling season*, three *heating seasons: average / colder / warmer*) describing per *bin* the combination of *outdoor temperatures* and the number of hours these temperatures occur per season for which the unit is declared fit for purpose;
- (17) ‘*Bin*’ (with index ‘ $j$ ’) means a combination of an *outdoor temperature* ( $T_j$ ) and *bin hours* ( $h_j$ ), as set out in Annex VII, Table 1;
- (18) ‘*Bin hours*’ means the hours per season ( $h_j$ ) the *outdoor temperature* occurs for each bin, as set out in Annex VII, Table 1;
- (19) ‘*Seasonal energy efficiency ratio*’ (*SEER*) is the overall energy efficiency ratio of the unit, representative for the whole cooling season, calculated as the *reference annual cooling demand* divided by the *annual electricity consumption for cooling*;
- (20) ‘*Reference annual cooling demand*’ ( $QC$ ) means the reference cooling demand [kWh/a] to be used as basis for calculation of SEER and calculated as the product of the *design load for cooling* ( $P_{designc}$ ) and the *equivalent active mode hours for cooling* ( $HCE$ );
- (21) ‘*Equivalent active mode hours for cooling*’ ( $HCE$ ) means the assumed annual number of hours [h/a] the unit must provide the *design load for cooling* ( $P_{designc}$ ) in order to satisfy the *reference annual cooling demand*, as set out in Annex VII, Table 4;
- (22) ‘*Annual electricity consumption for cooling*’ ( $QCE$ ) means the electricity consumption [kWh/a] required to meet the *reference annual cooling demand* and is calculated as the *reference annual cooling demand* divided by the *active mode seasonal energy*

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- efficiency ratio ( $SEER_{on}$ ), and the electricity consumption of the unit for *thermostat off-, standby-, off- and crankcase heater-mode* during the cooling season;
- (23) ‘Active seasonal mode energy efficiency ratio’ ( $SEER_{on}$ ) means the average energy efficiency ratio of the unit in active mode for the cooling function, constructed from *part load* and *bin-specific energy efficiency ratio's* ( $EER_{bin}(T_j)$ ) and weighted by the *bin hours* the *bin* condition occurs;
- (24) ‘Part load’ means the cooling load ( $P_c(T_j)$ ) or the heating load ( $P_h(T_j)$ ) [kW] at a specific outdoor temperature  $T_j$ , calculated as the design load multiplied by the *part load ratio*;
- (25) ‘Bin-specific energy efficiency ratio’ ( $EER_{bin}(T_j)$ ) means the energy efficiency ratio specific for every *bin j* with *outdoor temperature*  $T_j$  in a season, derived from the *part load*, *declared capacity* and *declared energy efficiency ratio* ( $EER_d(T_j)$ ) for specified *bins (j)* and calculated for other *bins* through inter/extrapolation, when necessary corrected by the *degradation coefficient*;
- (26) ‘Seasonal coefficient of performance’ ( $SCOP$ ) is the overall coefficient of performance of the unit, representative for the whole designated heating season (the value of  $SCOP$  pertains to a designated heating season), calculated as the *reference annual heating demand* divided by the *annual electricity consumption for heating*;
- (27) ‘Reference annual heating demand’ ( $QH$ ) means the reference heating demand [kWh/a], pertaining to a designated *heating season*, to be used as basis for calculation of  $SCOP$  and calculated as the product of the *design load for heating* ( $P_{designh}$ ) and the *seasonal equivalent active mode hours for heating* ( $H_{HE}$ );
- (28) ‘Equivalent active mode hours for heating’ ( $H_{HE}$ ) means the assumed annual number of hours [h/a] the unit must provide the *design load for heating* ( $P_{designh}$ ) in order to satisfy the *reference annual heating demand*, as set out in Annex VII, Table 4;
- (29) ‘Annual electricity consumption for heating’ ( $Q_{HE}$ ) means the electricity consumption [kWh/a] required to meet the indicated *reference annual heating demand* and which pertains to a designated heating season; and is calculated as the *reference annual heating demand* divided by the *active mode seasonal coefficient of performance* ( $SCOP_{on}$ ), and the electricity consumption of the unit for *thermostat off-, standby-, off- and crankcase heater-mode* during the heating season;
- (30) ‘Active mode seasonal coefficient of performance’ ( $SCOP_{on}$ ) means the average coefficient of performance of the unit in active mode for the designated heating season, constructed from the *part load*, *electric back up heating capacity* (where required) and *bin-specific coefficients of performance* ( $COP_{bin}(T_j)$ ) and weighted by the *bin hours* the *bin* condition occurs;
- (31) ‘Electric back-up heater capacity’ ( $elbu(T_j)$ ) is the heating capacity [kW] of a real or assumed electric back-up heater with COP of 1 that supplements the *declared capacity for heating* ( $P_{dh}(T_j)$ ) in order to meet the *part load for heating* ( $P_h(T_j)$ ) in case  $P_{dh}(T_j)$  is less than  $P_h(T_j)$ , for the *outdoor temperature* ( $T_j$ );
- (32) ‘Bin-specific coefficient of performance’ ( $COP_{bin}(T_j)$ ) means the coefficient of performance specific for every *bin j* with *outdoor temperature*  $T_j$  in a season, derived from the *part load*, *declared capacity* and *declared coefficient of performance* ( $COP_d(T_j)$ ) for specified *bins (j)* and calculated for other *bins* through inter/extrapolation, when necessary corrected by the *degradation coefficient*;

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- (33) ‘Declared capacity’ [kW] is the capacity of the vapour compression cycle of the unit for cooling ( $P_{dc}(T_j)$ ) or heating ( $P_{dh}(T_j)$ ), pertaining to an outdoor temperature  $T_j$  and indoor temperature ( $T_{in}$ ), as declared by the manufacturer;
- (34) ‘Function’ means the indication of whether the unit is capable of indoor air cooling, indoor air heating or both;
- (35) ‘Design load’ means the declared cooling load ( $P_{designc}$ ) and/or declared heating load ( $P_{designh}$ ) [kW] at the *reference design temperature*, whereby
- (a) for cooling mode,  $P_{designc}$  is equal to the *declared capacity* for cooling at  $T_j$  equal to  $T_{designc}$ ;
  - (b) for heating mode,  $P_{designh}$  is equal to the *part load* at  $T_j$  equal to  $T_{designh}$ ;
- (36) ‘Declared energy efficiency ratio’ ( $EER_d(T_j)$ ) means the energy efficiency ratio at a limited number of specified *bins* ( $j$ ) with outdoor temperature ( $T_j$ ), as declared by the manufacturer;
- (37) ‘Declared coefficient of performance’ ( $COP_d(T_j)$ ) means the *coefficient of performance* at a limited number of specified *bins* ( $j$ ) with *outdoor temperature* ( $T_j$ ), as declared by the manufacturer;
- (38) ‘Bivalent temperature’ ( $T_{biv}$ ) means the *outdoor temperature* ( $T_j$ ) [°C] declared by the manufacturer for heating at which the *declared capacity* equals the *part load* and below which the *declared capacity* must be supplemented with *electric back up heater capacity* in order to meet the *part load* for heating;
- (39) ‘Operation limit temperature’ ( $T_{ol}$ ) means the *outdoor temperature* [°C] declared by the manufacturer for heating, below which air conditioner will not be able to deliver any heating capacity. Below this temperature, the *declared capacity* is equal to zero;
- (40) ‘Active mode’ means the mode corresponding to the hours with a cooling or heating load of the building and whereby the cooling or heating function of the unit is activated. This condition may involve on/off-cycling of the unit in order to reach or maintain a required indoor air temperature;
- (41) ‘Thermostat-off mode’ means a mode corresponding to the hours with no cooling or heating load whereby the cooling or heating function of the unit is switched on but the unit is not operational as there is no cooling or heating load. This condition is therefore related to outdoor temperatures and not to indoor loads. Cycling on / off in active mode is not considered as thermostat off;
- (42) ‘Crankcase heater operation mode’ means a condition where the unit has activated a heating device to avoid the refrigerant migrating to the compressor in order to limit the refrigerant concentration in oil at compressor start;
- (43) ‘Thermostat-off mode operating hours’ ( $HTO$ ) means the annual number of hours [h/a] the unit is considered to be in *thermostat-off mode*, the value of which depends on the designated season and function;
- (44) ‘Standby mode operating hours’ ( $HSB$ ) means the annual number of hours [h/a] the unit is considered to be in *standby mode*, the value of which depends on the designated season and function;

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- (45) ‘*Off-mode hours*’ (*HOFF*) means the annual number of hours [h/a] the unit is considered to be in off-mode, the value of which depends on the designated season and function;
- (46) ‘*Crankcase heater mode operating hours*’ (*HCK*) means the annual number of hours [h/a] the unit is considered to be in *crankcase heater operation mode*, the value of which depends on the designated season and function;
- (47) ‘*Electricity consumption of single and double ducts*’ (*QSD* respectively *QDD*) means the electricity consumption of single or double duct air conditioners for the cooling and/or heating mode (whichever applies) [single duct in kWh/h, double duct in kWh/a];
- (48) ‘*Capacity ratio*’ means the ratio of the total declared cooling or heating capacity of all operating indoor units to the declared cooling or heating capacity of the outdoor unit at standard rating conditions.

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- (1) [OJ L 161, 14.6.2006, p. 1.](#)
- (2) IPCC Third Assessment Climate Change 2001. A Report of the Intergovernmental Panel on Climate Change: [http://www.ipcc.ch/publications\\_and\\_data/publications\\_and\\_data\\_reports.shtml](http://www.ipcc.ch/publications_and_data/publications_and_data_reports.shtml)
- (3) Climate Change, The IPCC Scientific Assessment, J.T Houghton, G.J.Jenkins, J.J. Ephraums (ed.) Cambridge University Press, Cambridge (UK) 1990.
- (4) [OJ L 390, 31.12.2004, p. 24.](#)

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### Changes and effects yet to be applied to the whole legislation item and associated provisions

- Signature words omitted by [S.I. 2019/539 Sch. 5 para. 5\(5\)](#)
- Annex 1(8) substituted by [S.I. 2019/539 Sch. 5 para. 5\(6\)](#)
- Annex 5(c) word substituted by [S.I. 2019/539 Sch. 5 para. 5\(9\)](#)
- Annex 3 para. 1.4 image substituted by [S.I. 2020/1528 Sch. 5 para. 6\(2\)](#)
- Annex 3 para. 1.5 image substituted by [S.I. 2020/1528 Sch. 5 para. 6\(3\)](#)
- Annex 3 para. 2.4 image substituted by [S.I. 2020/1528 Sch. 5 para. 6\(4\)](#)
- Annex 3 para. 2.5 image substituted by [S.I. 2020/1528 Sch. 5 para. 6\(5\)](#)
- Annex 3 para. 3.4 image substituted by [S.I. 2020/1528 Sch. 5 para. 6\(6\)](#)
- Annex 3 para. 3.5 image substituted by [S.I. 2020/1528 Sch. 5 para. 6\(7\)](#)
- Annex 3 para. 4.1 image substituted by [S.I. 2020/1528 Sch. 5 para. 6\(8\)](#)
- Annex 3 para. 4.2 image substituted by [S.I. 2020/1528 Sch. 5 para. 6\(9\)](#)
- Annex 3 para. 4.3 image substituted by [S.I. 2020/1528 Sch. 5 para. 6\(10\)](#)
- Annex 3 para. 4.4 image substituted by [S.I. 2020/1528 Sch. 5 para. 6\(11\)](#)
- Annex 3 para. 4.5 image substituted by [S.I. 2020/1528 Sch. 5 para. 6\(12\)](#)
- Annex 3 para. 4.6 image substituted by [S.I. 2020/1528 Sch. 5 para. 6\(13\)](#)
- Annex 3 para. 5.1 image substituted by [S.I. 2020/1528 Sch. 5 para. 6\(14\)](#)
- Annex 3 para. 5.2 image substituted by [S.I. 2020/1528 Sch. 5 para. 6\(15\)](#)
- Annex 3 para. 5.3 image substituted by [S.I. 2020/1528 Sch. 5 para. 6\(16\)](#)
- Annex 3 para. 5.4 image substituted by [S.I. 2020/1528 Sch. 5 para. 6\(17\)](#)
- Annex 3 para. 5.5 image substituted by [S.I. 2020/1528 Sch. 5 para. 6\(18\)](#)
- Annex 3 para. 5.6 image substituted by [S.I. 2020/1528 Sch. 5 para. 6\(19\)](#)
- Annex 3 s.0001para. 1.1 words inserted by [S.I. 2019/539 Sch. 5 para. 5\(7\)\(a\)](#)
- Annex 3 s.0002para. 2.1 words inserted by [S.I. 2019/539 Sch. 5 para. 5\(7\)\(b\)](#)
- Annex 3 s.0003para. 3.1 words inserted by [S.I. 2019/539 Sch. 5 para. 5\(7\)\(c\)](#)
- Annex 3 s.0004para. 4.1 words inserted by [S.I. 2019/539 Sch. 5 para. 5\(7\)\(d\)](#)
- Annex 3 s.0004para. 4.3 words inserted by [S.I. 2019/539 Sch. 5 para. 5\(7\)\(d\)](#)
- Annex 3 s.0004para. 4.5 words inserted by [S.I. 2019/539 Sch. 5 para. 5\(7\)\(d\)](#)
- Annex 3 s.0005para. 5.1 words inserted by [S.I. 2019/539 Sch. 5 para. 5\(7\)\(e\)](#)
- Annex 3 s.0005para. 5.3 words inserted by [S.I. 2019/539 Sch. 5 para. 5\(7\)\(e\)](#)
- Annex 3 s.0005para. 5.5 words inserted by [S.I. 2019/539 Sch. 5 para. 5\(7\)\(e\)](#)
- Annex 3 para. 1.5(iv) words substituted by [S.I. 2020/1528 Sch. 5 para. 6\(20\)\(a\)](#)
- Annex 3 para. 2.5(iv) words substituted by [S.I. 2020/1528 Sch. 5 para. 6\(20\)\(a\)](#)
- Annex 3 para. 3.5(iv) words substituted by [S.I. 2020/1528 Sch. 5 para. 6\(20\)\(a\)](#)
- Annex 3 para. 4.2(iv) words substituted by [S.I. 2020/1528 Sch. 5 para. 6\(20\)\(a\)](#)
- Annex 3 para. 4.4(iv) words substituted by [S.I. 2020/1528 Sch. 5 para. 6\(20\)\(a\)](#)
- Annex 3 para. 4.6(iv) words substituted by [S.I. 2020/1528 Sch. 5 para. 6\(20\)\(a\)](#)
- Annex 3 para. 5.2(iv) words substituted by [S.I. 2020/1528 Sch. 5 para. 6\(20\)\(a\)](#)
- Annex 3 para. 5.4(iv) words substituted by [S.I. 2020/1528 Sch. 5 para. 6\(20\)\(a\)](#)
- Annex 3 para. 5.6(iv) words substituted by [S.I. 2020/1528 Sch. 5 para. 6\(20\)\(a\)](#)
- Annex 3 para. 1.5(iv) words substituted by [S.I. 2020/1528 Sch. 5 para. 6\(20\)\(b\)](#)
- Annex 3 para. 2.5(iv) words substituted by [S.I. 2020/1528 Sch. 5 para. 6\(20\)\(b\)](#)
- Annex 3 para. 3.5(iv) words substituted by [S.I. 2020/1528 Sch. 5 para. 6\(20\)\(b\)](#)
- Annex 3 para. 4.2(iv) words substituted by [S.I. 2020/1528 Sch. 5 para. 6\(20\)\(b\)](#)
- Annex 3 para. 4.4(iv) words substituted by [S.I. 2020/1528 Sch. 5 para. 6\(20\)\(b\)](#)
- Annex 3 para. 4.6(iv) words substituted by [S.I. 2020/1528 Sch. 5 para. 6\(20\)\(b\)](#)
- Annex 3 para. 5.2(iv) words substituted by [S.I. 2020/1528 Sch. 5 para. 6\(20\)\(b\)](#)
- Annex 3 para. 5.4(iv) words substituted by [S.I. 2020/1528 Sch. 5 para. 6\(20\)\(b\)](#)
- Annex 3 para. 5.6(iv) words substituted by [S.I. 2020/1528 Sch. 5 para. 6\(20\)\(b\)](#)

- Annex 3 para. 1.1 words substituted in earlier amending provision S.I. 2019/539, Sch. 5 para. 5(7)(a) by [S.I. 2020/1528 reg. 4](#)
- Annex 3 para. 2.1 words substituted in earlier amending provision S.I. 2019/539, Sch. 5 para. 5(7)(b) by [S.I. 2020/1528 reg. 4](#)
- Annex 3 para. 3.1 words substituted in earlier amending provision S.I. 2019/539, Sch. 5 para. 5(7)(c) by [S.I. 2020/1528 reg. 4](#)
- Annex 3 para. 4.1 words substituted in earlier amending provision S.I. 2019/539, Sch. 5 para. 5(7)(d) by [S.I. 2020/1528 reg. 4](#)
- Annex 3 para. 4.3 words substituted in earlier amending provision S.I. 2019/539, Sch. 5 para. 5(7)(d) by [S.I. 2020/1528 reg. 4](#)
- Annex 3 para. 4.5 words substituted in earlier amending provision S.I. 2019/539, Sch. 5 para. 5(7)(d) by [S.I. 2020/1528 reg. 4](#)
- Annex 3 para. 5.1 words substituted in earlier amending provision S.I. 2019/539, Sch. 5 para. 5(7)(e) by [S.I. 2020/1528 reg. 4](#)
- Annex 3 para. 5.3 words substituted in earlier amending provision S.I. 2019/539, Sch. 5 para. 5(7)(e) by [S.I. 2020/1528 reg. 4](#)
- Annex 3 para. 5.5 words substituted in earlier amending provision S.I. 2019/539, Sch. 5 para. 5(7)(e) by [S.I. 2020/1528 reg. 4](#)
- Annex 7 para. 1 words substituted by [S.I. 2019/539 Sch. 5 para. 5\(10\)](#)
- Annex 8(7) omitted by [S.I. 2019/539 Sch. 5 para. 5\(11\)\(b\)](#)
- Annex 4 para. 1(c) substituted by [S.I. 2019/539 Sch. 5 para. 5\(8\)](#)
- Annex 4 para. 1(c) words substituted in earlier amending provision S.I. 2019/539, Sch. 5 para. 5(8) by [S.I. 2020/1528 reg. 4](#)
- Art. 3(1)(c) words substituted by [S.I. 2019/539 Sch. 5 para. 5\(2\)](#)
- Art. 3(1)(c) words substituted in earlier amending provision S.I. 2019/539, Sch. 5 para. 5(2) by [S.I. 2020/1528 reg. 6\(1\)reg. 6\(2\)\(c\)\(v\)](#)