CABINET OF MINISTERS OF UKRAINE

RESOLUTION

No. 534 of 19 June 2019
Kyiv

On Approval of the Technical Regulation on Ecodesign Requirements for Household Tumble Driers

In accordance with Article 5 of the Law of Ukraine 'On Technical Regulations and Conformity Assessment', the Cabinet of Ministers of Ukraine hereby **resolves:**

1. To approve the Technical Regulation on Ecodesign Requirements for Household Tumble Driers, as attached to the original.

2. The State Agency on Energy Efficiency and Energy Saving shall provide for the implementation of the Technical Regulation approved by this Resolution.

3. To introduce to the list of types of products subject to state market surveillance by state market surveillance authorities, approved by the Resolution of the Cabinet of Ministers of Ukraine No. 1069 of 28 December 2016 (Official Journal of Ukraine, 2017, No. 50, p. 1550; 2018, No. 23, p. 798), amendment, as attached.

4. This Resolution shall enter into force after six months following its publication.

Prime Minister of Ukraine **VOLODYMYR GROYSMAN**

Ind. 21

APPROVED
by the Resolution of the Cabinet of Ministers of Ukraine
No. 534 of 19 June 2019

AMENDMENTS,
to be introduced to the list of types of products subject to state market surveillance by state market surveillance authorities

1. The list shall be supplemented with point 23[1] to read as follows:

'23[1]. Household tumble driers	Resolution by the Cabinet of Ministers of Ukraine No. 380 of 31 May 2017 'On Approval of the Technical Regulation on Energy Labelling of Household Tumble Driers'	State Service of Ukraine on Food Safety and Consumer Protection'.
	Resolution by the Cabinet of Ministers of Ukraine No. 534 of 19 June 'On Approval of the Technical Regulation on Ecodesign Requirements for Household Tumble Driers'	

2. Points 43[3] shall be deleted.

{The text of the Technical Regulation was taken from the official website of the Cabinet of Ministers of Ukraine}

TECHNICAL REGULATION
on Ecodesign Requirements for Household Tumble Driers

General part

1. This Technical Regulation establishes ecodesign requirements for the placing on the market of electric mains-operated and gas-fired household tumble driers and built-in household tumble driers.

This Technical Regulation is based on the Commission Regulation (EU) No 932/2012 of 3 October 2012 implementing Directive 2009/125/EC of the European Parliament and of the Council with regard to ecodesign requirements for household tumble driers.

2. This Technical Regulation shall cover tumble driers intended for commercial use.

3. This Technical Regulation shall not apply to household combined washer-driers and household spin-extractors.

4. For the purposes of this Technical Regulation, the terms used herein shall have the following meanings:

1) ‘automatic tumble drier’ means a tumble drier which switches off the drying process when a certain moisture content of the load is detected, for example through conductivity or temperature sensing;

2) ‘condenser tumble drier’ means a tumble drier which includes a device either using condensation or any other means for removing moisture from the air used for the drying process;

3) ‘built-in household tumble drier’ means a household tumble drier intended to be installed in a cabinet, a prepared recess in a wall or a similar location, requiring furniture finishing;

4) ‘air-vented tumble drier’ means a tumble drier that draws in fresh air, passes it over the textiles and vents the resulting moist air into the room or outside;

5) ‘equivalent household tumble drier’ means a model of household tumble drier placed on the market with the same rated capacity, technical and performance characteristics, energy consumption, condensation efficiency, standard cotton programme time and airborne acoustical noise emissions during drying as another model of household tumble drier placed on the market under a different commercial code number by the same manufacturer;

6) ‘condensation efficiency’ means the ratio between the mass of moisture condensed by a condenser tumble drier and the mass of moisture removed from the load at the end of a cycle;

7) ‘non-automatic tumble drier’ means a tumble drier which does not switch off the drying process after a predefined period, usually controlled by a timer, but which may also be manually switched off;

8) ‘rated capacity’ means the maximum mass in kilograms, indicated by the manufacturer in 0,5 kilogram increments of dry textiles of a particular type, which can

be treated in a tumble drier with the selected programme, when loaded in accordance with the manufacturer's instructions;

9) 'household tumble drier' means an appliance, designed to be used principally for non-professional purposes, in which textiles are dried by tumbling in a rotating drum through which heated air is passed;

10) 'household spin-extractor' means an appliance, designed to be used principally for non-professional purposes, in which water is removed from the textiles by centrifugal action in a rotating drum and drained through an automatic pump;

11) 'household combined washer-drier' means a household washing machine which includes both a spin extraction function and also a means for drying the textiles, usually by heating and tumbling;

12) 'programme' means a series of operations that are predefined by the manufacturer for drying certain types of textile;

13) 'off-mode' means a condition where the household tumble drier is switched off using appliance controls or switches, that may persist for an indefinite time while the household tumble drier is connected to a power source. Where there is no control or switch, 'off-mode' means the condition of the household tumble drier reached after the household tumble drier reverts to a steady-state power consumption on its own;

14) 'left-on mode' means the condition of the household tumble drier, characterized by the lowest power consumption, that may persist for an indefinite time after completion of the programme without any further intervention by the consumer besides unloading of the household tumble drier;

15) 'standard cotton programme' means the cycle which dries cotton laundry with an initial moisture content of the load of 60 % up to a remaining moisture content of the load of 0 %;

16) 'cycle' means a complete drying process, as defined for the selected programme;

17) 'programme time' means the time that elapses from the initiation of the programme until the completion of the programme, excluding any consumer programmed delay;

18) 'partial load' means half of the rated capacity of a household tumble drier for a given drying programme.

Other terms used herein shall have meanings set out in the Laws of Ukraine 'On Technical Regulations and Conformity Assessment', 'On State Market Surveillance and Control of Non-Food Products', 'On Standardization' and in the Technical Regulation establishing a framework for the setting of ecodesign requirements for energy-related products, approved by the Resolution of the Cabinet of Ministers of Ukraine No 804 of 3 October 2018 (Official Journal of Ukraine, 2018, No 80, p. 2678).

Ecodesign requirements

5. The generic ecodesign requirements for household tumble driers are set out in point 1 of Annex 1.

The specific ecodesign requirement for household tumble driers are set out in point 2 of Annex 1.

No other ecodesign requirements referred to in Annex 1 to the Technical Regulation Establishing a Framework for the Setting of Ecodesign Requirements for Energy-Related Products, approved by the Resolution of the Cabinet of Ministers of Ukraine No. 804 of 3 October 2018, shall apply.

Conformity assessment

6. Conformity of household tumble driers with the requirements of this Technical Regulation shall be assessed by applying the internal design control procedure or the management system conformity assessment procedure set out, respectively, in Annexes 3 and 4 to the Technical Regulation Establishing a Framework for the Setting of Ecodesign Requirements for Energy-Related Products, approved by the Resolution of the Cabinet of Ministers of Ukraine No. 804 of 3 October 2018.

For the purposes of conformity assessment, the technical documentation shall contain a copy of the calculations as laid down in Annex 2.

Where the information included in the technical documentation for a particular household tumble drier model has been obtained by calculation with regard to other equivalent household tumble driers, the technical documentation shall include details of such calculations and tests, undertaken by manufacturers to verify the accuracy of the calculations undertaken. In such a case, the technical documentation shall also include a list of all other equivalent household tumble drier models where the information included in the technical documentation was obtained on the same basis.

State market surveillance

7. Verification of conformity of the characteristics of household tumble driers with the requirements of this Technical Regulation in the course of state market surveillance shall be made in accordance with the requirements set out in Annex 3.

Indicative benchmarks

8. The indicative benchmarks for best-performing household tumble driers available on the market are set out in Annex 4.

Correlation table

9. The correlation table of the provisions of Commission Regulation (EU) No 932/2012 of 3 October 2012 implementing Directive 2009/125/EC of the European Parliament and of the Council with regard to ecodesign requirements for household tumble driers and the provisions of this Technical Regulation is set out in Annex 5.

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Annex 1
to the Technical Regulation

ECODESIGN REQUIREMENTS
for household tumble driers

Generic ecodesign requirements

1. For the calculation of the energy consumption and other parameters for household tumble driers, the cycle which dries cotton laundry (with an initial moisture content of the load of 60 %) up to a remaining moisture content of the load of 0 % (hereinafter referred to as the ‘standard cotton programme’) shall be used. That cycle shall be clearly identifiable on the programme selection device(s) of the household tumble drier or the household tumble drier display and indicated as ‘standard cotton programme’ or by a uniform symbol  or an appropriate combination of symbols, and shall be set as the default cycle for household tumble driers equipped with automatic programme selection or any function for automatically selecting a drying programme or maintaining the selection of a programme. If the tumble drier is automatic tumble drier the ‘standard cotton programme’ shall be automatic.

2. The booklet of instructions provided by the manufacturer shall provide the information about:

the ‘standard cotton programme’ and shall specify that it is suitable to dry normal wet cotton laundry and that it is the most efficient programme in terms of energy consumption for drying wet cotton laundry;

the power consumption of the off-mode and of the left-on mode;

indicative programme time and energy consumption for the main drying programmes at both full, and, if applicable, partial load;

Specific ecodesign requirements

3. Household tumble driers shall comply with the following requirements:

1) one year after the Technical Regulation on Ecodesign Requirements for Household Tumble Driers has come into force:

the energy efficiency index (EEI) shall be less than 85;

for condenser household tumble driers the weighted condensation efficiency shall be not lower than 60 %;

2) three years after the Technical Regulation has come into force:

for condenser household tumble driers the energy efficiency index (EEI) shall be less than 76;

for condenser household tumble driers the weighted condensation efficiency shall be not lower than 70 %.

The energy efficiency index (EEI) and the weighted condensation efficiency are calculated in accordance with Annex 2 to the Technical Regulation on Ecodesign Requirements for Household Tumble Driers.

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Annex 2
to the Technical Regulation

CALCULATION
of the energy efficiency index and weighted condensation efficiency

Calculation of the Energy Efficiency Index

1. For the calculation of the energy efficiency index (EEI) of a household tumble drier, the weighted annual energy consumption of a household tumble drier for the standard cotton programme at full and partial load is compared to its standard annual energy consumption:

1) the energy efficiency index (EEI) is calculated as follows and rounded to one decimal place:

$$EEI = \frac{AE_c}{SAE_c} \times 100,$$

where AE_c is the weighted annual energy consumption of the household tumble drier;

SAE_c is the standard annual energy consumption of the household tumble drier, in kWh/year;

2) the standard annual energy consumption (SAE_C) is calculated in kWh/year as follows and rounded to two decimal places:

for all household tumble driers that are not air-vented:

$$SAE_c = 140 \times c^{0,8},$$

for air-vented household tumble driers:

$$SAE_c = 140 \times c^{0,8} - \left(30 \times \frac{T_t}{60}\right),$$

where c is the rated capacity of the household tumble drier for the standard cotton programme, in kg;

T_t is the weighted programme time for the standard cotton programme of the household tumble drier (in minutes);

3) the weighted annual energy consumption (AE_c), is calculated in kWh/year as follows and is rounded to two decimal places:

$$AE_c = E_t \text{ x } 160 + \frac{\left[P_0 \times \frac{525600 - (T_t \times 160)}{2} + P_l \times \frac{525600 - (T_t \times 160)}{2}\right]}{60 \times 1000},$$

where E_t is the weighted energy consumption, rounded to two decimal places, in kWh per 1 cycle;

P_o is the weighted power in 'off-mode' for the standard cotton programme at full load, rounded to two decimal places, in W;

P_l is the weighted power in left-on mode for the standard cotton programme at full load, rounded to two decimal places, in W;

T_t is the weighted programme time, in minutes and rounded to the nearest minute;

160 is the total number of drying cycles per year.

4) where the household tumble drier is equipped with a power management system, with the household washing machine reverting automatically to 'off-mode' after the end of the programme, the weighted annual energy consumption (AE_c) is calculated taking into consideration the effective duration of the 'left-on mode', according to the following formula:

$$AE_c = E_t \times 160 + \frac{\{(P_l \times T_l \times 160) + P_0 \times [525600 - (T_t \times 160) - (T_l \times 160)]\}}{60 \times 1000},$$

where T_l is the duration of the 'left-on mode' for the standard cotton programme at full load, in minutes and rounded to the nearest minute;

5) the weighted programme time (T_t) is calculated in minutes as follows and rounded to the nearest minute:

$$T_t = (3 \times T_{dry} + 4 \times T_{dry\frac{1}{2}})/7,$$

where T_{dry} is the programme time for the standard cotton programme at full load, in minutes and rounded to the nearest minute;

$T_{dry\frac{1}{2}}$ is the programme time for the standard cotton programme at partial load, in minutes and rounded to the nearest minute;

6) the weighted energy consumption (E_t) is calculated in kWh as follows and rounded to two decimal places:

$$E_t = (3 \times E_{dry} + 4 \times E_{dry\frac{1}{2}})/7,$$

where E_{dry} is the energy consumption of the standard cotton programme at full load, in kWh and rounded to two decimal places;

$E_{dry\frac{1}{2}}$ is the energy consumption of the standard cotton programme at partial load, in kWh and rounded to two decimal places;

7) for gas-fired household tumble driers, the energy consumption for the standard cotton programme at full and partial load is calculated in kWh according to the following formulas and rounded to two decimal places:

$$E_{dry} = \frac{Eg_{dry}}{fg} + Eg_{dry,a},$$

$$E_{dry\,1/2} = \frac{Eg_{dry\,1/2}}{fg} + Eg_{dry\,1/2,a},$$

where Eg_{dry} is gas consumption of the standard cotton programme at full load, in kWh and rounded to two decimal places;

$Eg_{dry\,1/2}$ is gas consumption of the standard cotton programme at partial load, in kWh and rounded to two decimal places;

$Eg_{dry,a}$ is the auxiliary electricity consumption of the standard cotton programme at full load, in kWh and rounded to two decimal places;

$Eg_{dry\,1/2,a}$ is the auxiliary electricity consumption of the standard cotton programme at partial load, in kWh and rounded to two decimal places;

fg = 2,5.

Calculation of the weighted condensation efficiency

2. The condensation efficiency of a programme is the ratio between the mass of moisture condensed and collected in the container of a condenser household tumble drier and the mass of moisture removed from the textiles by the programme (the difference between the mass before drying and the mass after drying). For calculating the weighted condensation efficiency, the average condensation efficiency of the standard cotton programme at both full and partial load is considered.

The weighted condensation efficiency (C_t) of a programme is calculated as a percentage and rounded to the nearest whole percent as:

$$C_t = (3 \times C_{dry} + 4 \times C_{dry\,1/2})/7,$$

where C_{dry} is the average condensation efficiency of the standard cotton programme at full load;

$C_{dry\,1/2}$ is the average condensation efficiency of the standard cotton programme at partial load.

The average condensation efficiency (C) of the standard cotton programme at both full and partial load is calculated from the condensation efficiencies of test runs and expressed as a percentage according to the following formula:

$$C = \frac{1}{(n-1)} \sum_{j=2}^{n} \left(\frac{W_{wj}}{W_i - W_f} \times 100 \right),$$

where n is the number of test runs, comprising at least four valid test runs for the selected programme;

j is the test run number;

W_{wj} is the mass of water collected in the condenser reservoir during test run j, in kg;

W_i is the mass of the wet test load before drying, in kg;

W_f is the mass of the test load after drying, in kg.

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Annex 3
to the Technical Regulation

REQUIREMENTS
for verification during state market surveillance

1. The verification tolerances referred to in this Annex are to be applied by state market surveillance authorities and shall not be used by the manufacturer or importer to establish the values in the technical documentation or in interpreting these values with a view to achieving compliance or to communicate better performance by any means.

2. The verification of conformity of household tumble driers with the requirements of the Technical Regulation on Ecodesign Requirements for Household Tumble Driers (hereinafter referred to as 'Technical Regulation') shall be carried out by state market surveillance authorities taking into account the following requirements:

1) one household tumble drier per model shall be tested;

2) a household tumble drier model shall be considered to comply with the requirements of the Technical Regulation if:

performance indicators given in the technical documentation and the values used to calculate these indicators are not more favourable for the manufacturer or importer than the results of the corresponding measurements;

the declared indicators meet the requirements laid down in the Technical Regulation, and the necessary product information provided by the manufacturer or importer does not contain indicators that are more favourable for the manufacturer or importer;

when the state market surveillance authorities test the household tumble drier, the determined parameters and the values comply with the respective verification tolerances as given in the Table;

3) if the results referred to in the second or third indent of subpoint 2 of this point are not achieved, the household tumble drier model and all other equivalent household tumble driers referred to in the manufacturer's or importer's technical documentation shall be considered not to comply with the requirements of the Technical Regulation;

4) if the result referred to in the fourth indent of subpoint 2 of this point is not achieved, the state market surveillance authorities shall select three additional household tumble driers of the same model for testing. As an alternative, the three additional household tumble driers may be of one or more different models that have been listed as equivalent household tumble driers in the manufacturer's or importer's technical documentation;

5) the model shall be considered to comply with the requirements if, for these three household tumble driers, the arithmetical mean of the determined values complies with the respective verification tolerances given in the Table;

6) if the result referred to in subpoint 5 of this point is not achieved, the household tumble drier model and all other equivalent household tumble driers referred to in the manufacturer's or importer's technical documentation shall be considered not to comply with the requirements of the Technical Regulation.

3. The state market surveillance authorities shall use the measurement and calculation methods set out in Annex 2 to the Technical Regulation.

The state market surveillance authorities shall only apply the verification tolerances that are set out in the Table, taking into account the requirements set out in subpoints 1 to 6 of point 2 of this Annex. No other tolerances, such as those set out in the national standards that are identical to the European harmonised standards or in any other measurement method, shall be applied.

Table

Verification tolerances

Parameters	Verification tolerances
Weighted annual energy consumption (AE_c)	the determined value shall not exceed the declared value of (AE_c) by more than 6 %
Weighted energy consumption (E_t)	the determined value shall not exceed the declared value of (E_t) by more than 6 %
Weighted condensation efficiency (C_t)	the determined value shall not be less than the declared value of (C_t) by more than 6 %
Weighted programme time (T_t)	the determined values shall not exceed the declared values of (T_t) by more than 6 %
Power consumption in off-mode and left-on mode (P_o and P_l)	the determined values of power consumption (P_o) and (P_l) of more than 1 W shall not exceed the declared values of (P_o) and (P_l) by more than 6 %. The determined values of power consumption (P_o) and (P_l) of less than or equal to 1 W shall not exceed the declared values of (P_o) and (P_l) by more than 0,1 W

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Annex 4
to the Technical Regulation

INDICATIVE BENCHMARKS

1. At the time of entry into force of the Technical Regulation on Ecodesign Requirements for Household Tumble Driers (hereinafter referred to as the 'Technical Regulation'), the best available technology on the market for household tumble driers, in terms of their energy consumption and airborne acoustical noise emissions during drying for the standard cotton programme, is identified as follows:

1) for air-vented household tumble driers with a rated capacity of 3 kg:

energy consumption: 1,89 kWh/cycle for the standard cotton cycle at full load, equal to about 247 kWh/year (calculated assuming 160 drying cycles per year with an energy consumption for the standard cotton programme at partial load equal to 60 % of the energy consumption at full load, and an additional annual energy consumption in low power modes of 13,5 kWh);

airborne acoustical noise emissions: 69 dB;

2) for air-vented household tumble driers with a rated capacity of 5 kg:

energy consumption: 2,7 kWh/cycle for the standard cotton cycle at full load, equal to about 347 kWh/year (calculated assuming 160 drying cycles per year with an energy consumption for the standard cotton programme at partial load equal to 60 % of the energy consumption at full load, and an additional annual energy consumption in low power modes of 13,5 kWh);

airborne acoustical noise emissions: not available;

3) for gas fired air-vented household tumble driers with a rated capacity of 5 kg:

gas energy consumption: 3,25 kWh_{Gas}/cycle equivalent to 1,3 kWh for the standard cotton cycle at full load; annual energy consumption: not available;

airborne acoustical noise emissions: not available;

4) for condenser household tumble driers with a rated capacity of 5 kg:

energy consumption: 3,1 kWh/cycle for the standard cotton cycle at full load, equal to about 396 kWh/year (calculated assuming 160 drying cycles per year with an energy consumption for the standard cotton programme at partial load equal to 60 % of the energy consumption at full load, and an additional annual energy consumption in low power modes of 13,5 kWh);

airborne acoustical noise emissions: not available;

5) for air-vented household tumble drier with a rated capacity of 6 kg:

energy consumption: 3,84 kWh/cycle for the standard cotton cycle at full load, equal to about 487 kWh/year (calculated assuming 160 drying cycles per year with an energy consumption for the standard cotton programme at partial load equal to 60 % of the energy consumption at full load, and an additional annual energy consumption in low power modes of 13,5 kWh);

airborne acoustical noise emissions: 67 dB;

6) for condenser household tumble driers with a rated capacity of 6 kg:

energy consumption: 1,58 kWh/cycle for the standard cotton cycle at full load, equal to about 209 kWh/year (calculated assuming 160 drying cycles per year with an energy consumption for the standard cotton programme at partial load equal to 60 % of the energy consumption at full load, and an additional annual energy consumption in low power modes of 13,5 kWh);

airborne acoustical noise emissions: not available;

7) for air-vented household tumble drier with a rated capacity of 7 kg:

energy consumption: 3,9 kWh/cycle for the standard cotton cycle at full load, equal to about 495 kWh/year (calculated assuming 160 drying cycles per year with an energy consumption for the standard cotton programme at partial load equal to 60 % of the energy consumption at full load, and an additional annual energy consumption in low power modes of 13,5 kWh);

airborne acoustical noise emissions: 65 dB;

8) for gas fired air-vented household tumble driers with a rated capacity of 7 kg:

gas energy consumption: 3,4 kWh_{Gas}/cycle equivalent to 1,36 kWh for the standard cotton cycle at full load; annual energy consumption: not available;

airborne acoustical noise emissions: not available;

9) for condenser household tumble driers with a rated capacity of 7 kg:

energy consumption: 1,6 kWh/cycle for the standard cotton cycle at full load, equal to about 211 kWh/year (calculated assuming 160 drying cycles per year with an energy consumption for the standard cotton programme at partial load equal to 60 % of the energy consumption at full load, and an additional annual energy consumption in low power modes of 13,5 kWh);

airborne acoustical noise emissions: 65 dB;

10) for air-vented household tumble drier with a rated capacity of 8 kg:

energy consumption: 4,1 kWh/cycle for the standard cotton cycle at full load, equal to about 520 kWh/year (calculated assuming 160 drying cycles per year with an energy consumption for the standard cotton programme at partial load equal to 60 % of the energy consumption at full load, and an additional annual energy consumption in low power modes of 13,5 kWh);

airborne acoustical noise emissions: 65 dB;

11) for condenser household tumble driers with a rated capacity of 8 kg:

energy consumption: 2,3 kWh/cycle for the standard cotton cycle at full load, equal to about 297 kWh/year (calculated assuming 160 drying cycles per year with an energy consumption for the standard cotton programme at partial load equal to 60 % of the energy consumption at full load, and an additional annual energy consumption in low power modes of 13,5 kWh);

airborne acoustical noise emissions: not available.

Annex 5
to the Technical Regulation

CORRELATION TABLE
of the provisions of Commission Regulation (EU) No 932/2012 of 3 October 2012 implementing Directive 2009/125/EC of the European Parliament and of the Council with regard to ecodesign requirements for household tumble driers and the provisions of the Technical Regulation on Ecodesign Requirements for Household Tumble Driers

Provisions of the Commission Regulation (EU)	Provisions of the Technical Regulation
Article 1(1)	points 1 and 2
Article 1(2)	point 3
First indent of Article 2	first indent of point 4
Article 2(1)	tenth indent of point 4
Article 2(2)	fourth indent of point 4
Article 2(3)	twelfth indent of point 4
Article 2(4)	eleventh indent of point 4
Article 2(5)	fifth indent of point 4
Article 2(6)	third indent of point 4
Article 2(7)	second indent of point 4
Article 2(8)	eighth indent of point 4
Article 2(9)	thirteenth indent of point 4
Article 2(10)	seventeenth indent of point 4
Article 2(11)	eighteenth indent of point 4
Article 2(12)	ninth indent of point 4
Article 2(13)	nineteenth indent of point 4
Article 2(14)	seventh indent of point 4
Article 2(15)	fourteenth indent of point 4
Article 2(16)	fifteenth indent of point 4
Article 2(17)	sixth indent of point 4
Article 2(18)	sixteenth indent of point 4
Article 3	point 5
Article 4	point 6
Article 5	point 7
Article 6	point 8
Article 7	
Article 8	
Annex I	Annex 1
Annex II	Annex 2
Annex III	Annex 3
Annex IV	Annex 4