COUNCIL OF THE EUROPEAN UNION

Brussels, 3 October 2013

14326/13
ADD 2

ENER 446
ENV 887
DELACT 49

COVER NOTE

from:	Secretary-General of the European Commission, signed by Mr Jordi AYET PUIGARNAU, Director
date of receipt:	1 October 2013
to:	Mr Uwe CORSEPIUS, Secretary-General of the Council of the European Union
No Cion doc.:	C(2013) 6280 final - Annex II
Subject:	Commission Delegated Regulation (EU) No.../.. of 1.10.2013 supplementing Directive 2010/30/EU of the European Parliament and of the Council with regard to the energy labelling of domestic ovens and range hoods

Delegations will find attached Commission document C(2013) 6280 final - Annex II.

_____

Encl.: C(2013) 6280 final - Annex II

EUROPEAN
COMMISSION

Brussels, 1.10.2013
C(2013) 6280 final

ANNEX

ANNEX II

to the

COMMISSION DELEGATED REGULATION (EU) No …/..

supplementing Directive 2010/30/EU of the European Parliament and of the Council with regard to the energy labelling of domestic ovens and range hoods

ANNEX II
Measurements and calculations

For the purposes of compliance and verification of compliance with the requirements of this Regulation, measurements and calculations shall be made using a reliable, accurate and reproducible method that take into account the generally recognised state-of-the art measurement and calculation methods, including harmonised standards the reference numbers of which have been published for the purpose in the Official Journal of the European Union. They shall meet the technical definitions, conditions, equations and parameters set out in this Annex.

1. DOMESTIC OVENS

The energy consumption of a cavity of a domestic oven shall be measured for one standardised cycle, in a conventional mode and in a fan-forced mode, if available, by heating a standardised load soaked with water. It shall be verified that the temperature inside the oven cavity reaches the temperature setting of the thermostat and/or the oven control display within the duration of the test cycle. The energy consumption per cycle corresponding to the best performing mode (conventional mode or fan-forced mode) shall be used in the following calculations.

For each cavity of a domestic oven, the Energy Efficiency Index (EEI_{cavity}) shall be calculated according to the following formulas:

for domestic electric ovens:

$$EEI_{cavity} = \frac{EC_{electric\ cavity}}{SEC_{electric\ cavity}} \times 100$$

$$SEC_{electric\ cavity} = 0.0042 \times V + 0.55 \text{ (in kWh)}$$

for domestic gas ovens:

$$EEI_{cavity} = \frac{EC_{gas\ cavity}}{SEC_{gas\ cavity}} \times 100$$

$$SEC_{gas\ cavity} = 0.044 \times V + 3.53 \text{ (in MJ)}$$

Where:

– EEI_{cavity} = Energy Efficiency Index for each cavity of a domestic oven, in %, rounded to the first decimal place;

– $SEC_{electric\ cavity}$ = Standard Energy Consumption (electricity) required to heat a standardised load in a cavity of an electric heated domestic oven during a cycle, expressed in kWh, rounded to the second decimal place;

– $SEC_{gas\ cavity}$ = Standard Energy Consumption required to heat a standardised load in a cavity of a domestic gas-fired oven during a cycle, expressed in MJ, rounded to the second decimal place;

– V = Volume of the cavity of the domestic oven in litres (L), rounded to the nearest integer;

– $EC_{electric\ cavity}$ = Energy consumption required to heat a standardised load in a cavity of an electric heated domestic oven during a cycle, expressed in kWh, rounded to the second decimal place;

– $EC_{gas\ cavity}$ = Energy consumption required to heat a standardised load in a gas-fired cavity of a domestic oven during a cycle, expressed in MJ, rounded to the second decimal place.

2. DOMESTIC RANGE HOODS

2.1. Calculation of the Energy Efficiency Index (EEI_{hood})

The Energy Efficiency Index (EEI_{hood}) is calculated as:

$$EEI_{hood} = \frac{AEC_{hood}}{SAEC_{hood}} \times 100$$

and is rounded to the first decimal place.

Where:

– $SAEC_{hood}$ is the Standard Annual Energy consumption of the domestic range hood in kWh/a, rounded to the first decimal place;

– AEC_{hood} is the Annual Energy Consumption of the domestic range hood in kWh/a, rounded to the first decimal place.

The Standard Annual Energy Consumption ($SAEC_{hood}$) of a domestic range hood shall be calculated as:

$$SAEC_{hood} = 0.55 \times (W_{BEP} + W_L) + 15.3$$

Where:

– W_{BEP} is the electric power input of the domestic range hood at the best efficiency point, in Watt and rounded to the first decimal place;

– W_L is the nominal electric power input of the lighting system of the domestic range hood on the cooking surface, in Watt and rounded to the first decimal place.

The Annual Energy Consumption (AEC_{hood}) of a domestic range hood is calculated as:

i) for the fully automatic domestic range hoods:

$$AEC_{hood} = \left[\frac{(W_{BEP} \times t_H \times f) + (W_L \times t_L)}{60 \times 1000} + \frac{P_o \times (1440 - t_H \times f)}{2 \times 60 \times 1000} + \frac{P_s \times (1440 - t_H \times f)}{2 \times 60 \times 1000} \right] \times 365$$

ii) for all other domestic range hoods:

$$AEC_{hood} = \frac{[W_{BEP} \times (t_H \times f) + W_L \times t_L]}{60 \times 1000} \times 365$$

Where:

– t_L is the average lighting time per day, in minutes (t_L=120);

– t_H is the average running time per day for domestic range hoods, in minutes, (t_H=60);

– P_o is the electric power input in off-mode of the domestic range hood, in Watt and rounded to the second decimal place;

– P_s is the electric power input in standby mode of the domestic range hood, in Watt and rounded to the second decimal place;

– f is the time increase factor, calculated and rounded to the first decimal place, as:

$$f = 2 - (FDE_{hood} \times 3.6)/100$$

2.2. Calculation of the Fluid Dynamic Efficiency (FDE_{hood})

The Fluid Dynamic Efficiency (FDE_{hood}) at the best efficiency point is calculated by the following formula, and is rounded to the first decimal place:

$$FDE_{hood} = \frac{Q_{BEP} \times P_{BEP}}{3600 \times W_{BEP}} \times 100$$

Where:

– Q_{BEP} is the flow rate of the domestic range hood at best efficiency point, expressed in m^3/h and rounded to the first decimal place;

– P_{BEP} is the static pressure difference of the domestic range hood at best efficiency point, expressed in Pa and rounded to the nearest integer;

– W_{BEP} is the electric power input of the domestic range hood at the best efficiency point, expressed in Watt and rounded to the first decimal place.

2.3. Calculation of the Lighting Efficiency (LE_{hood})

The Lighting Efficiency (LE_{hood}) of a domestic range hood means the ratio between the average illumination and the nominal electric power input of the lighting system. It shall be calculated in lux per Watt and rounded at the nearest integer, as:

$$LE_{hood} = \frac{E_{middle}}{W_L}$$

Where:

– E_{middle} is the average illumination of the lighting system on the cooking surface measured under standard conditions, in lux and rounded to the nearest integer;

– W_L is the nominal electric power input of the lighting system of the domestic range hood on the cooking surface, in Watt and rounded to the first decimal place.

2.4. Calculation of the Grease Filtering Efficiency (GFE_{hood})

The Grease Filtering Efficiency (GFE_{hood}) of a domestic range hood means the relative amount of grease retained within the range hood grease filters. It shall be calculated and rounded to the first decimal place as:

$$GFE_{hood} = [w_g / (w_r + w_t + w_g)] \times 100 \qquad [\%]$$

Where:

– w_g = the mass of oil in the grease filter, including all detachable coverings, in g and rounded to the first decimal place;

– w_r = the mass of oil retained in the airways of the range hood, in g and rounded to the first decimal place;

– w_t = the mass of oil retained in the absolute filter, in g and rounded to the first decimal place.

2.5. Noise

The Noise Value (in dB) is measured as the airborne acoustical A-weighted sound power emissions (weighted average value - L_{WA}) of a domestic range hood at the highest setting for normal use, rounded to the nearest integer.