COUNCIL OF THE EUROPEAN UNION

Brussels, 22 March 2012

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COVER NOTE

from:	European Commission
date of receipt:	20 March 2012
to:	General Secretariat of the Council
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Subject:	Draft Commission Regulation (EU) No .../.. of XXX amending Commission Regulation (EC) No 641/2009 as regards ecodesign requirements for glandless stand-alone circulators integrated in products

Delegations will find attached Commission document D019772/02.

Encl.: D019772/02

EUROPEAN COMMISSION

Brussels, XXX
[…](2012) XXX draft

COMMISSION REGULATION (EU) No …/..

of XXX

amending Commission Regulation (EC) No 641/2009 as regards ecodesign requirements for glandless standalone circulators and glandless circulators integrated in products

(Text with EEA relevance)

[…]

D019772/02

COMMISSION REGULATION (EU) No …/..

of XXX

amending Commission Regulation (EC) No 641/2009 as regards ecodesign requirements for glandless standalone circulators and glandless circulators integrated in products

(Text with EEA relevance)

THE EUROPEAN COMMISSION,

Having regard to the Treaty on the Functioning of the European Union,

Having regard to Directive 2009/125/EC of the European Parliament and of the Council of 21 October 2009 establishing a framework for the setting of ecodesign requirements for energy-related products[1], and in particular Article 15(1) thereof,

After consulting the Ecodesign Consultation Forum,

Whereas:

(1) Article 7 of Regulation (EC) No 641/2009 of 22 July 2009 implementing Directive 2005/32/EC of the European Parliament and of the Council with regard to ecodesign requirements for glandless standalone circulators and glandless circulators integrated in products[2] requires the Commission to review the methodology for calculating the energy efficiency index, set out in Annex II, point 2 to that Regulation, for glandless circulators integrated in products before 1 January 2012.

(2) The review carried out by the Commission as well as experience gained with the implementation of Regulation (EC) No 641/2009 revealed the necessity to amend certain provisions of Regulation (EC) No 641/2009 in order to avoid unintended impacts on the circulator markets and on the performance of the products covered by that Regulation.

(3) The measures provided for in this Regulation are in accordance with the opinion of the Committee established by Article 19(1) of Directive 2009/125/EC,

HAS ADOPTED THIS REGULATION:

Article 1

[1] OJ L 285, 31.10.2009, p. 10.
[2] OJ L 191, 23.7.2009, p. 35.

Amendments to Regulation (EC) No 641/2009

Regulation (EC) No 641/2009 is amended as follows:

(1) Articles 1 and 2 are replaced by the following:

"*Article 1*
Subject matter and scope

1. This Regulation establishes ecodesign requirements for the placing on the market of glandless standalone circulators and glandless circulators integrated in products.

2. This Regulation shall not apply to:

   (a) drinking water circulators, except as regards the product information requirements of Annex I, point 2(1)(d);

   (b) circulators integrated in products and placed on the market no later than 1 January 2020 as replacement for identical circulators integrated in products and placed on the market no later than 1 August 2015, except as regards the product information requirements of Annex I, point 2(1)(e).

Article 2
Definitions

For the purposes of this Regulation, the following definitions shall apply:

(1) "*circulator*" means an impeller pump, with or without pump housing, which has the rated hydraulic output power of between 1 W and 2500 W and is designed for use in heating systems or in secondary circuits of cooling distribution systems;

(2) "*glandless circulator*" means a circulator with the rotor directly coupled to the impeller and the rotor immersed in the pumped medium;

(3) "*standalone circulator*" means a circulator, designed to operate independently from the product;

(4) "*product*" means an appliance that generates and/or transfers heat;

(5) "*circulator integrated in a product*" means a circulator designed to operate as part of a product carrying at least one of the following design details:

   (a) the pump housing is designed to be mounted and used inside a product,

   (b) the circulator is designed to be speed controlled by the product,

   (c) the circulator is designed for safety features not suitable for standalone operation (ISO IP classes),

   (d) the circulator is defined as part of product approval or product CE marking;

(6) "*drinking water circulator*" means a circulator specifically designed to be used in the recirculation of water intended for human consumption as defined in the Article 2 of the Council Directive 98/83/EC[3];

(7) "*pump housing*" means the part of an impeller pump which is intended to be connected to the pipe work of the heating systems or secondary circuits of the cooling distribution system."

(2) Article 7 is replaced by the following:

"*Article 7*
Revision

The Commission shall review this Regulation before 1 January 2017, in the light of technological progress.

The review shall include the assessment of design options that can facilitate re-use and recycling.

The results of the review shall be presented to the Ecodesign Consultation Forum."

(3) Annexes I and II to Regulation (EC) No 641/2009 are amended in accordance with the Annex to this Regulation.

Article 2
Entry into force

This Regulation shall enter into force on the twentieth day following that of its publication in the *Official Journal of the European Union*.

This Regulation shall be binding in its entirety and directly applicable in all Member States.

Done at Brussels,

For the Commission
The President

[3] OJ L 330, 5.12.1998, p. 32.

ANNEX
Amendments to Annexes I and II to Regulation (EC) No 641/2009

Annexes I and II to Regulation (EC) No 641/2009 are amended as follows:

(1) Annex I, point 2, is replaced by the following:

"2. PRODUCT INFORMATION REQUIREMENTS

1. From 1 January 2013,

(a) the energy efficiency index of standalone circulators calculated in accordance with Annex II, shall be indicated on the name plate and packaging of the standalone circulator and in the technical documentation of the standalone circulator as follows: 'EEI ≤ 0,[*xx*]';

(b) the following information shall be provided on standalone circulators and on circulators integrated in products: 'The benchmark for the most efficient circulators is EEI ≤ 0.20.';

(c) information concerning disassembly, recycling, or disposal at end-of-life of components and materials, shall be made available for treatment facilities on standalone circulators and on circulators integrated in products;

(d) for drinking water circulators, the following information shall be provided on the packaging and in the documentation: 'This circulator is suitable for drinking water only';

(e) for circulators integrated in products and placed on the market no later than 1 January 2020 as replacement for identical circulators integrated in products and placed on the market no later than 1 August 2015, the replacement product or its packaging shall clearly indicate the product(s) for which it is intended.

Manufacturers shall provide information on how to install, use and maintain the circulator in order to minimise its impact on the environment.

The information listed above shall be visibly displayed on freely accessible websites of the circulator manufacturer.

2. From 1 August 2015, for circulators integrated in products, the energy efficiency index calculated in accordance with Annex II, shall be indicated on the name plate of the circulator and in the technical documentation of the product as follows: 'EEI ≤ 0,[*xx*]'."

(2) Annex II, point 2, is replaced by the following:

"2. METHODOLOGY FOR CALCULATING THE ENERGY EFFICIENCY INDEX

The methodology for calculating the energy efficiency index (EEI) for circulators is as follows:

1. Standalone circulators with pump housing shall be measured as a complete unit;

Standalone circulators without pump housing shall be measured with pump housing identical to the pump housing in which they are intended to be used;

Circulators integrated in products shall be dismantled from the product and measured with a reference pump housing;

Circulators without pump housing intended to be integrated in a product shall be measured with a reference pump housing;

where '*reference pump housing*' means a pump housing supplied by the manufacturer with inlet and outlet ports on the same axis and designed to be connected to the pipework of a heating system or secondary circuit of a cooling distribution system.

2. Where a circulator has more than one setting of head and flow, measure the circulator at the maximum setting.

'Head' (H) means head (in metres) produced by the circulator at the specified point of operation.

'Flow' (Q) means the volume flow rate of water through the circulator (m^3/hr).

3. Find the point where $Q \cdot H$ is maximum and define the flow and head at this point as: $Q_{100\%}$ and $H_{100\%}$.

4. Calculate the hydraulic power P_{hyd} at this point.

'Hydraulic power' means an expression of the arithmetic product of the flow (Q), Head (H) and a constant.

'P_{hyd}' means hydraulic power delivered by the circulator to the fluid being pumped at the specified point of operation (in watts).

5. Calculate the reference power as:

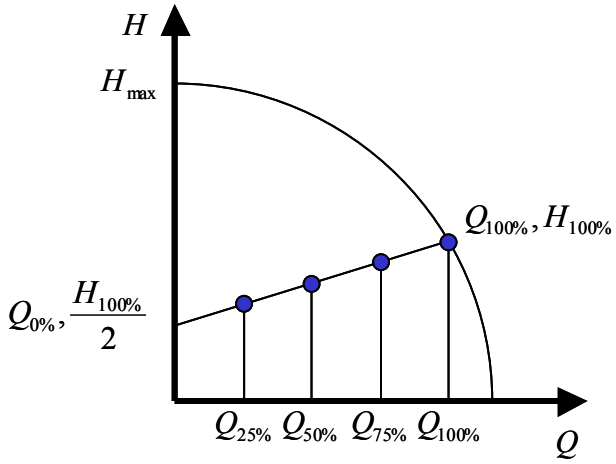
$$P_{ref} = 1.7 \cdot P_{hyd} + 17 \cdot \left(1 - e^{-0.3 \cdot P_{hyd}}\right), \quad 1\text{W} \le \text{P}_{\text{hyd}} \le 2500\text{W}$$

'Reference power' means a relation between hydraulic power and power consumption of a circulator, taking into account the dependency between circulator efficiency and size.

'P_{ref}' means the reference power (in watts) of the circulator in a given head and flow.

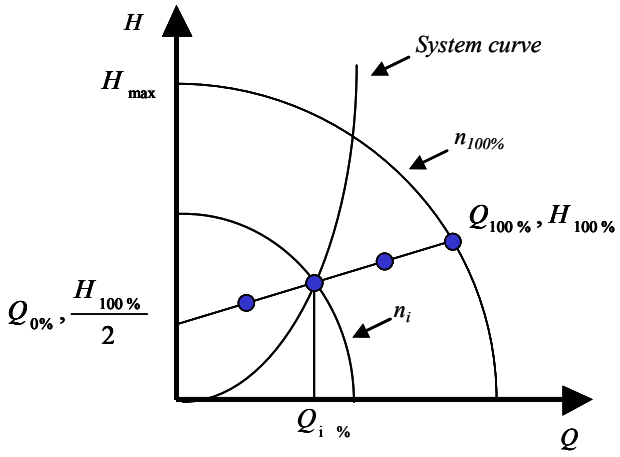
6. Define the reference control curve as the straight line between the points:

$$(Q_{100\%}, H_{100\%}) \text{ and } \left(Q_{0\%}, \frac{H_{100\%}}{2}\right)$$



7. Select a setting of the circulator ensuring that the circulator on the selected curve reaches $Q \cdot H$ = *max point*. For circulators integrated in products follow the reference control curve by adjusting the system curve and speed of the circulator.

'System curve' means a relationship between flow and head (H = f(Q)) resulting from friction in the heating system or cooling distribution system, as presented in the following graph:



8. Measure P_1 and H at the flows:

$Q_{100\%}, 0.75 \cdot Q_{100\%}, 0.5 \cdot Q_{100\%}, 0.25 \cdot Q_{100\%}$.

'P_1' means the electrical power (in watts) consumed by the circulator at the specified point of operation.

9. Calculate P_L as follows:

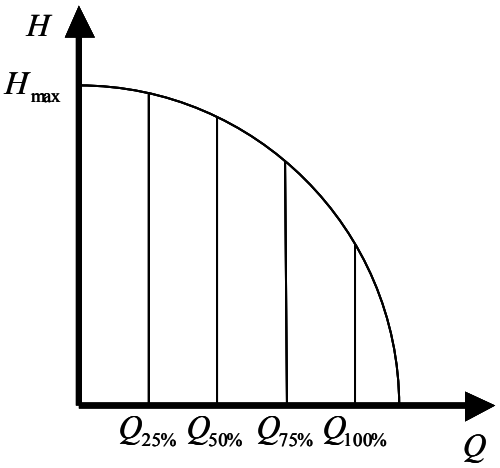
$$P_L = \frac{H_{ref}}{H_{meas}} \cdot P_{1,meas} \quad , if \quad H_{meas} \leq H_{ref}$$

$$P_L = P_{1,meas} \quad , if \quad H_{meas} > H_{ref}$$

Where H_{ref} is the head on the reference control curve at the different flows.

10. Using the measured values of P_L and this load profile:

Flow [%]	Time [%]
100	6
75	15
50	35
25	44



Calculate the weighted average power $P_{L,avg}$ as:

$P_{L,avg} = 0.06 \cdot P_{L,\,100\%} + 0.15 \cdot P_{L,75\%} + 0.35 \cdot P_{L,\,50\%} + 0.44 \cdot P_{L,25\%}$

Calculate the energy efficiency index[4] as:

$$EEI = \frac{P_{L,avg}}{P_{ref}} \cdot C_{20\%} \text{ , where } C_{20\%} = 0.49$$

Except for circulators integrated in products designed for primary circuits of thermal solar systems and for heat pumps, where the energy efficiency index is calculated as:

$$EEI = \frac{P_{L,avg}}{P_{ref}} \cdot C_{20\%} \cdot (1 - e^{\left(-3{,}8 \cdot \left(\frac{n_s}{30}\right)^{1{,}36}\right)})$$

where $C_{20\%}$=0,49 and n_s is the specific speed defined as

$$n_s = \frac{n_{100\%}}{60} \cdot \frac{\sqrt{Q_{100\%}}}{H_{100\%}^{\;0{,}75}}$$

[4] $C_{XX\%}$ means a scaling factor that ensures that at the time of defining the scaling factor only XX% of circulators of a certain type have an EEI ≤ 0.20.

where

n_s [rpm] is specific speed of a circulator;

$n_{100\%}$ is rotational speed in rpm in this duty defined at $Q_{100\%}$ and $H_{100\%}$.”