

Working documents on ecodesign and energy labelling of water heaters and hot water storage tanks of June 2010

- Notes -

Working documents on ecodesign and energy labelling of water heater and hot water storage tanks were sent on 23 June 2010 to the "Ecodesign Consultation Forum" and Experts for views. They build on the results of earlier consultations, including meetings of the Forum in 2008, and take into account additional stakeholder input as well as the recast Energy Labelling Directive 2010/30/EU and the recast Energy Performance of Buildings Directive 2010/31/EU.

In the following explanations on several issues are given.

Energy labelling

1. Scope

The scope is water heaters, storage tanks for both sanitary and heating hot water and solar preheat systems. "Water heaters" are "dedicated" to heating drinking/sanitary water. "Combi-boilers" are excluded and will be addressed in the legislation on "boilers". The latter should contain a "module" for "passive flue heat recovery devices" which are used in fossil-fuelled boilers to preheat sanitary water for further heating in the water heating part of the boiler and in water heaters.

A further load profile "3XS" was added.

The storage tanks covered include tanks for heating water, because there is no technical reason to distinguish between drinking/sanitary and heating hot water tanks from an energy efficiency/standing losses point of view.

Following suggestions of stakeholders, the scope of energy labelling includes solar preheat systems, that is combinations of solar collectors and storage tanks. For the placing on the market of solar preheat system a fiche is required for the purposes of implementing the "installer label" (see below), but no energy label or energy efficiency ranking is foreseen.

2. "Installer label"

It is suggested to require that offers of combinations of solar preheat systems with water heaters that were placed on the market separately contain the energy efficiency class and the energy efficiency of that combination. Following suggestions of stakeholders, the performance of such combinations is calculated by the supplier of the solar preheat system, and the results are contained in their fiches.

For the purposes of calculating the efficiency of combinations, the "lower" end of the bandwidth of the energy efficiency ranking for water heaters is used, and typical values for

the distribution losses are assumed. The installer label is relevant for water heaters with sizes from and above load profile "M".

3. Measurements and calculations involving solar thermal parts

For integrated collector storage devices measurements follow ISO 9459-5:2007. For all other configurations either a method following EN 13203-3 or a method following EN 15316-4-3 may be used. For the latter method, the default assumptions for the losses of the storage tank contained in EN 15316-4-3 are replaced by the measured losses of the storage tank as delivered.

4. "Smart control bonus"

It is suggested to reduce the "smart control bonus" from 10% to 7%. Otherwise well-insulated storage water heaters would not "qualify" for the bonus, which may imply an "incentive" to worsen insulation characteristics.

5. Energy efficiency ranking

With a view to Article 10(d) of the Energy Labelling Directive, it is suggested to "upgrade" the energy efficiency ranking for load profiles 3XL to S, that is load profiles where the input of renewable energy sources is not cost-effective, by one class compared to the ranking discussed during 2008. The band for class "A" contains the energy efficiency of 40%, which is the theoretical limit for a primary energy factor of 2,5 for an electric water heater not using input from renewable energy sources.

For load profiles from M upwards the energy efficiency levels for achieving class "A" are beyond "40%". Furthermore, it is suggested to adapt the efficiency classes "better than A" for load profiles M and L because recent test results indicate that the differentiation for technologies using renewable energy sources would be insufficient under the suggestions discussed during 2008.

6. Label layout

It is suggested to display in a first stage the full range of energy efficiency classes A+++–G. In a second stage, for which the timing should correlate with the entry into force of the stage 2 requirements for energy efficiency under ecodesign, the label contains classes A+++–D.

Ecodesign

1. Scope

The scope of the products for ecodesign and energy labelling is aligned, with the exception of solar preheat systems, which are not in the scope of the ecodesign regulation when placed on the market separately from a "back-up" water heater.

2. Ecodesign requirements for energy efficiency

"Installation requirements" are to be set by Member States under Article 8 of the recast EPBD on the overall energy performance of technical building systems, including for hot water systems, therefore no "installation requirements" are foreseen under ecodesign.

In order to enhance the legal certainty and clarity, it is suggested that the load profile to be applied for conformity assessment and labelling declarations has to be the maximum load profile a water heater can deliver under certain thermostat temperature settings. As a consequence it is suggested to lower the energy efficiency requirement for load profile XL from 40% to 38% in stage 2. The combined effect is that electric storage water heaters with volumes of around 300 litres and somewhat above are required to have an energy efficiency which is close to what can be achieved without input of renewable energy sources.

3. Ecodesign requirements for NO_x emissions

The suggested ecodesign requirements on NO_x emissions take into account the recent stakeholder input provided in the context of the discussions on ecodesign requirements for boilers.

4. "Smart control bonus"

The suggestions for measurements and calculations and the smart control bonus are in line with the approach for energy labelling described above.

5. Conformity assessment

It is suggested to foresee self-certification, because with a view to Article 8(2) of the Ecodesign Directive no risks are identified so far that would duly justify to a conformity assessment procedure different from the ones set out in Annex IV and V of that Directive.

Measurements and calculations

It is suggested to specify basic elements of measurement and calculation methods, such as equations for energy efficiency, energy consumption etc., in the regulations. Further elements will be specified in a Commission communication containing references to relevant documents as e.g. EN, prEN or ISO (preliminary) standards, complemented by additional explicit elements where needed¹. It is intended that these transitional methods will be replaced by harmonised standards.

¹ see e.g. Commission communication (2010/C 16/09) related to household refrigeration appliances, OJ C 16, 22.1.2010, p. 19.