European Commission

Guidelines accompanying

2018

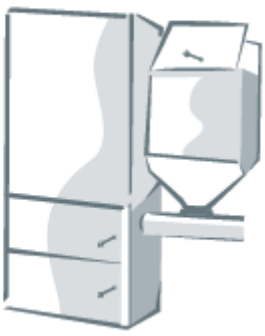
Regulations (EU)
No 811 & 812/2013 with regard to **energy labelling of space heaters, combination heaters, packages of space heater, temperature control and solar device and packages of combination heater, temperature control and solar device, and of water heaters, hot water storage tanks and packages of water heater and solar device**

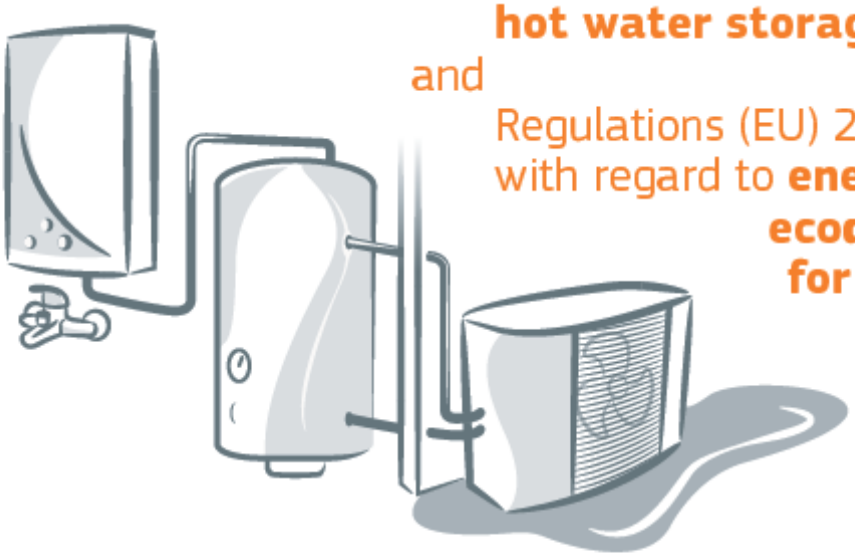
and

Regulations (EU) No 813 & 814/2013 with regard to **ecodesign requirements for space heaters and combination heaters, and for water heaters and hot water storage tanks**

and

Regulations (EU) 2015/1187 & 1189 with regard to **energy labelling and ecodesign requirements for solid fuel boilers**





Energy

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1. PURPOSE OF THE GUIDELINES AND DISCLAIMER

The Ecodesign and Energy Labelling Regulations for space and water heaters were published in 2013 and for solid fuel boilers in 2015. The regulations establish minimum requirements and an energy labelling scheme for the products in their scope. These guidelines aim to help relevant stakeholders, including industry and public authorities, to implement the Regulations in practice. They summarise the most relevant information from the regulations to give SMEs an introduction to the subject matter and answer the most common questions.

Throughout this document, the wording "space heaters and combination heaters" is used in reference to the products in scope of Regulations (EU) 811/2013 and (EU) 813/2013; the wording "water heaters" is used in reference to the products in scope of Regulations (EU) 812/2013 and (EU) 814/2013; and the wording "solid fuel boilers" is used in reference to the products in scope of Regulations (EU) 2015/1187 and (EU) 2015/1189.

The guidelines are intended to be used only for facilitating the implementation of the Regulations. They are not intended to replace the Regulations or to provide "interpretation" beyond their intent. The guidelines only reflect the opinion of the Commission services and are not legally binding. A finally binding legal interpretation of EU legislation may only be provided by the European Court of Justice. The guidelines are without prejudice to the position the Commission might take should an issue arise in a procedure before the European Court of Justice.

2. THE REGULATIONS

The Commission has published the following regulations concerning space heaters, water heaters and solid fuel boilers:

- Commission Delegated Regulation (EU) No 811/2013 of 18 February 2013 supplementing Directive 2010/30/EU with regard to energy labelling of space heaters, combination heaters, packages of space heater, temperature control and solar device and packages of combination heater, temperature control and solar device[1];
- Commission Delegated Regulation (EU) No 812/2013 of 18 February 2013 supplementing Directive 2010/30/EU with regard to energy labelling of water heaters, hot water storage tanks and packages of water heater and solar device[2];
- Commission Regulation (EU) No 813/2013 of 2 August 2013 implementing Directive 2009/125/EC with regard to ecodesign requirements for space heaters and combination heaters;
- Commission Regulation (EU) No 814/2013 of 2 August 2013 implementing Directive 2009/125/EC with regard to ecodesign requirements for water heaters and hot water storage tanks[3];

1 OJ L 239, 6.9.2013, p. 1.
2 OJ L 239, 6.9.2013, p. 83,
3 OJ L 239, 6.9.2013, p. 136.

- Commission Delegated Regulation (EU) No 518/2014 of 5 March 2014 amending Commission Delegated Regulations (EU) No 1059/2010, (EU) No 1060/2010, (EU) No 1061/2010, (EU) No 1062/2010, (EU) No 626/2011, (EU) No 392/2012, (EU) No 874/2012, (EU) No 665/2013, (EU) No 811/2013 and (EU) No 812/2013 with regard to labelling of energy-related products on the internet[4];;
- Commission Delegated Regulation (EU) 2015/1187 of 27 April 2015 supplementing Directive 2010/30/EU with regard to energy labelling of solid fuel boilers and packages of a solid fuel boiler, supplementary heaters, temperature controls and solar devices.
- Commission Regulation (EU) 2015/1189 of 28 April 2015 implementing Directive 2009/125/EC with regard to ecodesign requirements for solid fuel boilers.

3. SCOPE

3.1. Space Heaters and Combination Heaters

The scope of the Ecodesign and Energy Labelling Regulations on space and combination heaters is different. While the Ecodesign Regulation covers products with a rated output up to 400 kW, the Energy Labelling Regulation covers products with a rated output up to 70 kW.

In both cases, heaters designed for using gaseous or liquid fuels from biomass are excluded[5]. Heaters using solid fuels are also excluded; these are covered by the Ecodesign and Energy Labelling Regulations with regard to solid fuel boilers (see Chapter 2).

The heaters covered by the Regulations can be classified as follows:

- Gaseous fuel boiler space heaters;
- Gaseous fuel boiler combination heaters;
- Liquid fuel boiler space heaters;
- Liquid fuel boiler combination heaters;
- Electric boiler space heaters;
- Electric boiler combination heaters;
- Cogeneration space heaters;
- Cogeneration combination heaters;
- Heat pump space heaters;
- Heat pump combination heaters;
- Heat pump space heaters with fuel driven combustion unit;
- Heat pump combination heaters with fuel driven combustion unit.

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4 OJ L 239, 6.9.2013, p. 162.

5 Heaters using liquid or gaseous fuels predominantly produced from biomass are excluded. Other pieces of legislation, such as the Gas Appliances Directive might apply to them as far as appliances burning gaseous fuels are concerned.

3.2. Water Heaters

Regarding Ecodesign and Energy Labelling of water heaters and hot water storage tanks, the scope also differs between the two Regulations. Ecodesign covers water heaters with a rated output equal or below 400 kW and storage tanks with a storage volume up to 2000 litres, while the limit values for Energy Labelling are 70 kW and 500 litres for respectively.

As for space heaters, products using gaseous or liquid fuels from biomass or solid fuels are excluded from the scope.

The products covered can be classified as follows:

- Water heaters using fossil fuels;
- Electric water heaters;
- Heat pump Water heaters;
- Heat pump Water heaters with fuel driven combustion unit;
- Storage water heaters;
- Hot Water Storage Tanks;
- Solar Water Heaters.

3.3. Solid fuel boilers

For solid fuel boilers the scope of the Ecodesign Regulation and Energy Labelling Regulation is different as well. The Ecodesign Regulation covers products with a rated output up to 500 kW, while the Energy Labelling Regulation covers products with a rated output up to 70 kW.

Solid fuel boilers designed for non-woody biomass are excluded. Solid fuel boilers exclusively used for providing hot drinking water or sanitary water are also excluded.

The products covered can be classified as follows:

- Solid fuel boilers;
- Solid fuel combination boilers.
- Solid fuel cogeneration boilers
- Solid fuel cogeneration combination boilers

4. PRODUCT ENVIRONMENTAL IMPACTS

The preparatory studies identified and analysed the relevant environmental impacts of space heaters, combination heaters, water heaters and storage tanks, and solid fuel boilers. The use phase of the product has been clearly identified as the most important phase in terms of both environmental impacts and having the most potential for improvement. Therefore, no specific requirements considering production or transport were proposed and the regulatory measures focus on the use phase and, for ecodesign also on the end-of-life phase as regards the product information requirements.

As for most of the products subject to ecodesign regulations, the primary energy consumption during the use phase is the source of the primary impact via the (direct and indirect) carbon dioxide emissions.

Emissions from the combustion of fuel (e.g. NO_x, CO, particulate matter, organic gaseous compounds) are also relevant for all space, combination, water heaters and for solid fuel boilers with a burner or combustion engine. Electric heaters do not directly produce emissions of this kind.

Noise on the other hand, is only a relevant impact for heat pumps.

There are other environmental impacts associated with the products in scope of these Regulations, e.g. the use of refrigerants in heat pumps. These impacts may be subject to other existing legislation.

5. STATE OF PLAY OF LEGISLATION

5.1. Timetable

5.1.1. Space Heaters

- **06 September 2013.** Publication
- **26 September 2013.** Entry into force
- **26 September 2015.** Tier 1 requirements on energy efficiency, sound power level, storage volume and information requirements; energy Labelling with a scale from A++ to G; deadline transitional provision (Art 8).
- **26 September 2017.** Tier 2 requirements on energy efficiency.
- **26 September 2018.** Tier 1 requirements on NOx; revision of the regulations is to be presented to the Consultation Forum..
- **26 September 2019.** Energy Labelling with an updated scale from A+++ to D.

5.1.2. Water heaters

- **06 September 2013.** Publication.
- **26 September 2013.** Entry into force.
- **26 September 2015.** Tier 1 requirements on energy efficiency, sound power level, storage volume and information requirements; energy Labelling with a scale from A to G; deadline transitional provision (Art 8).
- **26 September 2016.** Specific revision to analyse the possibility of setting different requirements for different types of water heaters.
- **26 September 2017.** Energy Labelling with an updated scale from A+ to F.
- **26 September 2018.** Tier 2 requirements on energy efficiency on water heaters and hot water storage tanks; revision of the regulations is to be presented to the Consultation Forum.

5.1.3. Solid fuel boilers

- **21 July 2015.** Publication.
- **10 August 2015.** Entry into force.
- **01 April 2017.** Energy label solid fuel boilers with a scale of A++ to G.

- **26 September 2018.** Specific review to assess whether it is appropriate to introduce 3rd party certification.
- **26 September 2019.** Energy Labelling updated with a scale from A+++ to D.
- **01 January 2020.** Deadline transitional provision (Art 8).
- **26 September 2020.** Tier 1 Requirements on energy efficiency, emissions of particulate matter, organic gaseous compounds, carbon monoxide and nitrogen oxides.
- **01 January 2022.** Revision to be presented to the Consultation Forum.

5.2. Transitional provision

The transitional provision in Article 8 of the different Ecodesign Regulations establishes that Member States may allow the placing on the market and/or putting into service of space heaters, combination heaters, water heaters and solid fuel boilers which comply with the national provisions until the deadlines specified in that article and indicated above.

For space heaters and water heaters this provision only applies to national provisions in force when the Regulation was adopted; for solid fuel boilers, this provision also applies to national provisions that came into force after the Regulation was adopted.

5.3. Review

5.3.1. Space heaters and water heaters

A review of the four Regulations is foreseen for 2018.

The review of the Ecodesign Regulations shall assess:

- The appropriateness of setting ecodesign requirements for greenhouse gas emissions related to refrigerants;
- The level of the ecodesign requirements for emissions of carbon monoxide, hydrocarbons and particulate matter that may be introduced;
- The appropriateness of setting stricter ecodesign requirements for emissions of nitrogen oxides and for space heaters also for energy efficiency and sound power level;
- The appropriateness of setting ecodesign requirements for heaters specifically designed for using gaseous fuels or liquid fuels predominantly produced from biomass;
- The validity of the conversion coefficient value;
- The appropriateness of introducing third party certification.

In the course of 2016, a special review study was conducted to evaluate the appropriateness of setting separate ecodesign requirements for different types of water heaters. A report following this review study was presented to the Consultation Forum on 27th March 2017; it concluded that there was not sufficient evidence to support a revision of the regulation and that during the full review the possibility of technology specific requirements will be re-evaluated.

Regarding Energy Labelling, the following aspects need to be evaluated:

- Any significant change in the market share of various types of heaters related to the labels;
- The feasibility and usefulness of indicating heater efficiency in the label;
- The appropriateness of the package fiches and labels;
- The appropriateness of including passive flue recovery devices in the scope of Regulation 811/2013.

5.3.2. Solid fuel boilers

A review of the two solid fuel boiler Regulations is foreseen in 2022.

The review of the Ecodesign Regulations shall assess:

- The inclusion solid fuel boilers with a rated heat output up to 1000 kW;
- The inclusion non-woody biomass boilers, with ecodesign requirements for their specific types of pollutant emissions;
- The appropriateness of setting stricter ecodesign requirements beyond 2020 for energy efficiency and for emissions of particulate matter, organic gaseous compounds and carbon monoxide;
- The appropriateness to vary the verification tolerances.

In addition before 26 September 2018, the appropriateness whether it is to introduce 3rd party certification for solid fuel boilers should be assessed.

Regarding Energy Labelling, the following aspects need to be evaluated:

- The appropriateness of adding the water heating efficiency class on the label for combination boilers.

6. KEY REQUIREMENTS

6.1. Ecodesign requirements

For space heaters, combination heaters, solid fuel boilers and solid fuel combination boilers, the space heating energy efficiency is the key parameter. As heating demand is not constant over the year, the share of part load operation has to be reflected in the performance criterion.

The space heating energy efficiency class reflects these seasonal differences in one aggregated indicator. For fuel driven space and combination heaters, for cogeneration space and combination heaters with supplementary heaters, for automatically stoked solid fuel boilers and for manually stoked solid fuel boilers that can be operated at 50% of the rated heat output or less in continuous mode, the part-load behaviour has to be considered; whereas for electric boiler space heaters, cogeneration space heaters without supplementary heaters, manually stoked solid fuel boilers that cannot be operated at 50% of the rated heat output or less in continuous mode and for solid fuel cogeneration boilers, only the efficiency at rated output is taken into account. The requirements for the space heating energy efficiency are technology specific. For space heaters, the requirements are independent of the size or the power of the heater or boiler in question. The requirement is set as an efficiency criterion for all heater/boiler sizes. For solid fuel boilers, the requirements are size dependent.

For combination heaters and water heaters, the water heating energy efficiency is the essential parameter for indicating the efficiency of the hot water generation. The requirements for the water heating energy efficiency are technology neutral and set according to the heater's output power. The heaters have been distinguished in classes from 3XS to 4XL with the efficiency requirements rising with the size of the heater. For solid fuel combination boilers the water heating energy efficiency is not regulated.

In addition to the energy efficiency requirement, the regulation defines additional compliance criteria aimed at reducing other relevant environmental impacts, including:

- Sound power levels - only relevant for heat pumps.

  The requirements are size dependant, according to the heat pump's power output. The limit values are given as absolute values of indoor and outdoor sound power levels in A-weighted decibels.

- Nitrogen oxides emissions - relevant for fuel based space, combination heaters, as well as heat pumps when equipped with supplementary fuel based heaters and solid fuel boilers.

  For space heaters and water heaters the emission levels are in relation to the fuel input expressed in mg NO2equ/kWhkWh in terms of GCV; for solid fuel boilers the emission levels are seasonal emission levels in flue gas expressed in mg NO2equ/m³.

- Particulate matter, organic gaseous compound and carbon monoxide emissions – relevant for solid fuel boilers.

  These are seasonal emissions levels in flue gas dependent on the automatic or the manual stoking of the boiler expressed in mg/m³.

- Storage volume – relevant only for hot water storage tanks.

  The regulation prescribes a minimum load of the storage compartment. This minimum storage is differentiated between the size categories used for water heating efficiency and is given in litres.

- Maximum standing losses – relevant only for hot water storage tanks.

  The requirements are defined as a power in Watts expressed as a function of the storage capacity.

Finally, manufacturers, their authorised representative and importers needs to include information specified in Annex II of the relevant regulations in the instruction manuals, on the free access website and/or in the technical documentation of the product.

The following tables give an overview of the criteria to be fulfilled as well as the dates on which these criteria come into force.

Space heaters and water heaters:	**Space Heating Energy Efficiency**	**Water Heating Energy Efficiency**	**Sound Power Level**	**Emissions of Nitrogen oxides**	**Standing Losses**
TIER I	26.09.2015	26.09.2015	26.09.2015	26.09.2018	26.09.2017
TIER II	26.09.2017	26.09.2017			
TIER III		26.09.2018			
Fuel boiler space heaters					
Electric boiler space heaters					
Heat pump space heaters					
Heat pump space heaters with fuel driven combustion unit					
Fuel boiler combination heaters					
Electric boiler combination heaters					
Cogeneration space heaters					
Cogeneration combination heaters					
Heat pump combination heaters					
Heat pump combination heaters with fuel driven combustion unit					
Water heaters using fossil fuels					
Electric water heaters					
Heat pump Water heaters					
Heat pump water heaters with fuel driven combustion unit					
Hot Water Storage Tanks					
Storage water heaters					
Solar water heaters					

Solid fuel boilers:

	Space Heating Energy Efficiency	**Emissions of Nitrogen Oxides**	**Emissions of Particulate matter**	**Emissions of Organic Gaseous Compounds**	**Emissions of Carbon Monoxide**
TIER I	01.01.2020	01.01.2020	01.01.2020	01.01.2020	01.01.2020
Solid fuel boiler					
Solid fuel combination boiler					

6.2. Energy Labelling requirements

The labelling requirements address suppliers as well as dealers to ensure the correct and consistent use of the label throughout the supply chain.

The following table gives an overview of the labels, as well as the dates from which the different energy labels are coming into force:

	Space heaters	Combination heaters		Water heaters	Tanks	Solid fuel boilers
		Space heating	Water heating			
TIER I	26.09.2015	26.09.2015		26.09.2015	26.09.2015	01.04.2017
A to G						
A++ to G						
TIER II	26.09.2019	26.09.2019		26.09.2017	26.09.2017	26.09.2019
A+ to F						
A+++ to D						

From 26 September 2015 for space and waters heaters and from 1 April 2017 for solid fuel boilers, suppliers have to consider the following issues regarding labelling and information:

- Each individual solid fuel boiler heater is provided with a printed label in accordance with the regulation when placed on the market.
- A product fiche has to be provided. This product fiche shall be included in the product brochure or other literature provided with the product.
- Technical documentation in accordance with the regulation has to be provided to the Commission or to the market surveillance authorities on request.
- Pursuant to the entry into force of the new energy labelling framework regulation (Regulation (EU) 2017/1369 [6]) on 1 August 2017, from 1 January 2019 onwards, the technical documentation has to be uploaded on the product database for all products placed on the market after 1 January 2019; for products placed on the market between 1 August 2017 and 1 January 2019, the technical documentation has to be uploaded on the product database by 30 June 2019.
- Product advertisements are required to reference the seasonal space heating energy efficiency class.
- Technical promotional material is also required to reference the seasonal heating energy efficiency class.
- Suppliers must make the label and the fiche available to dealers in electronic format for each model, e.g. through making them available on a website where they can be downloaded by dealers.
- Pursuant to the entry into force of the new energy labelling framework regulation (reference) on 1 August 2017, suppliers must, from 1 January 2019 onwards, enter information about each new space heater, water heater or solid fuel boiler model in the product database before placing it on the market. When the models were placed on the market for the first time between 1 August 2017 and 1 January

[6] OJ L 198 of 28.07.2017, p 1-23

2019, the suppliers have until 30 June 2019 to complete the database for those models.

The obligations for dealers are:

- At the point of sale, each solid fuel boiler on display bears the respective printed energy label.
- Products marketed without the end user being able to see the label shall be accompanied with the relevant information laid down in the product fiche provided by the manufacturer.
- Advertisements are required to reference the seasonal space heating energy efficiency class.
- Technical promotional material is also required to reference the seasonal heating energy efficiency class.
- For selling through the internet, dealers must show the label and the fiche, made available in electronic format by manufacturers, as per Regulation 518/2014, as far as Regulation 811/2013 and Regulation 812/2013 are concerned and Annex VII of Regulation (EU) 2015/1187.

The dealer must be provided with the label and the additional information by the supplier in such a way, that they are able to provide the necessary information to customers. The parameters to be communicated in the product fiche are defined in Annex IV of the respective regulations; technical parameters to be communicated in the technical documentation are defined in Annex V of the respective energy labelling regulations.

6.3. Labelling requirements for packages

For packages of space or combination heaters with temperature control and/or solar devices, for packages for water heaters and solar devices, and for packages of a solid fuel heater, supplementary heaters, temperature controls and solar devices, a customized label to ensure sufficient information for the end user has to be provided.

The following table gives an overview of the package labels, as well as the dates from which the different energy labels are coming into force:

	Space heaters	Combination heaters		Water heaters	Tanks	Solid fuel boilers
		Space heating	Water heating			
TIER I	26.09.2015	26.09.2015		26.09.2015	26.09.2015	01.04.2017
A+++ to G						
TIER II	26.09.2019	26.09.2019		26.09.2017	26.09.2017	26.09.2019
A+++ to G						

The packages are defined in the Energy Labelling Regulations:

- In the case of Regulation 811/2013 they contain one or more space heaters or combination heaters combined with one or more temperature controls and/or one or more solar devices.
- In the case of Regulation 812/2013 they contain one or more water heaters and one or more solar devices.

- In the case of Regulation 2015/1187 they contain one or more solid fuel boiler combined with one or more supplementary heaters and one or more temperature controls and/or one or more solar devices.
- According to the relevant definitions in the Regulations, a solar device is made up of a solar collector, a solar hot water storage tank or a pump in the collector loop. A solar hot water storage tank is defined as a hot water storage tank storing heat energy produced by one or more solar collectors. This means that a solar device always contains a solar collector.

The dealer is defined in the Energy Labelling Regulation (EU) 2017/1369[7] as a retailer or other person who sells, hires, offers for hire-purchase or displays products to end users.

This means that in cases where the dealer is selling packages as defined in Regulation 811/2013, Regulation 812/2013 or Regulation 2015/1187, a package label has to be provided. The different components of the package do not need to come from the same supplier. The package label has to be displayed with the package and the fiche has to be provided to end consumers. This obligation applies in cases where packages are being offered to the final user.

In the heating sector, the dealer is usually the person that is in the best position to advice end users on the different existing solutions for fulfilling their heating needs and their relative efficiency. In order to provide better information to consumers and recognising that not only the individual components of an installation are important but that the combination of them with temperature controls and/or solar devices can greatly increase their efficiency a package label has been introduced for space heaters, combination heaters, water heaters and solid fuel boilers. The obligations of suppliers in relation to the product database is only applicable to suppliers that place single packages on the EU market. For example, installers that combine products from different suppliers into a single package do not have to upload information to the database.

The information provided by this "package label" is based on the information provided by the suppliers for the individual components of the package which needs to be readily available for dealers in the technical documentation of the products.

The overall efficiency of the package has to be calculated in accordance with the Regulations. For the different combinations the regulation provides a calculation scheme for the dealers to determine the efficiency class of the package. The following table gives an overview of the calculation methods depending on the preferential heater. The appropriate calculation method has to be chosen according to the type of package.

Type of preferential heater	**Space heating efficiency class calculation scheme**	**Water heating efficiency class calculation scheme**
Space heater or combination heater	Figure 1 (811/2013)	Figure 5 (811/2013) (for combination heaters)
Cogeneration space heater	Figure 2 (811/2013)	
Heat Pump space heater	Figure 3 (811/2013)	
Low-Temperature Heat Pump space heater	Figure 4 (811/2013)	
Water heater	Not applicable	Figure 1 (812/2013)

[7] OJ L 198, 28.7.2017, p. 1–23

Solid fuel boilers	Figure 1 (2015/1187)	Not applicable
Solid fuel cogeneration boilers	Figure 2 (2015/1187)	Not applicable

With the energy efficiency class resulting from the calculations, the package label can be completed appropriately.

In some cases, packages can include already installed appliances, in these cases, the complete package is not being placed on the market or put into service in the sense of the Regulations and in consequence it is not mandatory to provide a package label as no package as defined by the relevant Regulations is being placed on the market.

6.3.1. Calculation of space heating energy efficiency of packages according to Regulation (EU) No 811/2013

6.3.1.1. Seasonal space heating energy efficiency (I)

The value to be introduced is the seasonal space heating energy efficiency of the preferential heater, which can be a space heater, a combination heater, a cogeneration space heater, a heat pump space heater or a low-temperature heat pump space heater.

This information can be found on the product fiche that needs to be provided by the supplier with the product.

Packages can also include a supplementary heater; in which case, the seasonal space heating energy efficiency of the supplementary heater is also needed. This value is to be found on the fiche of this supplementary heater.

6.3.1.2. Temperature control

Depending on the temperature control class, different correction values are used, defined in classes. The class of the temperature control can be found on the fiche of the temperature control.

- Class I - On/off Room Thermostat: A room thermostat that controls the on/off operation of a heater. Performance parameters, including switching differential and room temperature control accuracy are determined by the thermostat's mechanical construction.
- Class II - Weather compensator control, for use with modulating heaters: A heater flow temperature control that varies the set point of the flow temperature of water leaving the heater dependent upon prevailing outside temperature and selected weather compensation curve. Control is achieved by modulating the output of the heater.
- Class III - Weather compensator control, for use with on/off output heaters: A heater flow temperature control that varies the set point of the flow temperature of water leaving the heater dependent upon prevailing outside temperature and selected weather compensation curve. Heater flow temperature is varied by controlling the on/off operation of the heater.
- Class IV - TPI room thermostat, for use with on/off output heaters: An electronic room thermostat that controls both thermostat cycle rate and in-cycle on/off ratio of the heater proportional to room temperature. TPI control strategy reduces mean water temperature, improves room temperature control accuracy and enhances system efficiency.
- Class V - Modulating room thermostat, for use with modulating heaters: An electronic room thermostat that varies the flow temperature of the water leaving

the heater dependent upon measured room temperature deviation from room thermostat set point. Control is achieved by modulating the output of the heater.

- Class VI - Weather compensator and room sensor, for use with modulating heaters: A heater flow temperature control that varies the flow temperature of water leaving the heater dependent upon prevailing outside temperature and selected weather compensation curve. A room temperature sensor monitors room temperature and adjusts the compensation curve parallel displacement to improve room comfort. Control is achieved by modulating the output of the heater.
- Class VII - Weather compensator and room sensor, for use with on/off output heaters: A heater flow temperature control that varies the flow temperature of water leaving the heater dependent upon prevailing outside temperature and selected weather compensation curve. A room temperature sensor monitors room temperature and adjusts the compensation curve parallel displacement to improve room comfort. Heater flow temperature is varied by controlling the on/off operation of the heater.
- Class VIII – Multi-sensor room temperature control, for use with modulating heaters: An electronic control, equipped with 3 or more room sensors that varies the flow temperature of the water leaving the heater dependent upon the aggregated measured room temperature deviation from room sensor set points. Control is achieved by modulating the output of the heater.

The correction factor per class is:

Class I	Class II	Class III	Class IV	Class V	Class VI	Class VII	Class VIII
1%	2%	1.5%	2%	3%	4%	3.5%	5%

6.3.1.3. Weighting of the heat output of preferential and supplementary heaters (II)

This weighting factor depends on the results of the expressions:

$$II = \frac{P_{sup}}{P_{rated} + P_{sup}} \quad or \quad \frac{P_{rated}}{P_{rated} + P_{sup}}$$

P_{sup} means the declared heat output of the supplementary heater while P_{rated} refers to the preferential heater.

Depending on the result of the above expression and on the presence of a storage tank, element "II" is provided in the Regulations.

For preferential boiler space heaters or boiler combination heaters the following table shall be used:

$P_{sup} / (P_{rated} + P_{sup})$	Without storage tank	With storage tank
0	0	0
0,1	0,30	0,37
0,2	0,55	0,7
0,3	0,75	0,85
0,4	0,85	0,94
0,5	0,95	0,98
0,6	0,98	1,00
>0,7	1,00	1,00

For preferential cogeneration space heaters, heat pump space heaters, heat pump combination heaters or low-temperature heat-pumps the following table shall be used:

$P_{rated} / (P_{rated} + P_{sup})$	Without storage tank	With storage tank

0	1,00	1,00
0,1	0,70	0,63
0,2	0,45	0,30
0,3	0,25	0,15
0,4	0,15	0,06
0,5	0,05	0,02
0,6	0,02	0
>0,7	0	0

In the calculation of the efficiency of the packages with preferential heaters other than boiler space heaters (figures 2, 3 and 4) the contribution of the supplementary heater is to be subtracted in the 3rd step. These figures anticipate that the result of step 3 usually will be negative because the efficiency of the supplementary heater is supposed to be lower than the efficiency of the preferential heater. However, if the result of step 3 is positive, its contribution may be added to the package efficiency, not subtracted.

6.3.1.4. Solar contribution factors (III and IV)

Elements III and IV are calculated as follows:

$$III = \frac{294}{11 \cdot P_{rated}}$$

$$IV = \frac{115}{11 \cdot P_{rated}}$$

These values are combined with the collector size in m^2, the tank volume in m^3 and the collector efficiency in %. All these values are to be found in the solar device fiche.

A factor depending on the energy efficiency class of the tank is also to be used:

A^+	0.95
A	0.91
B	0.86
C	0.83
D-G	0.81

6.3.1.5. Factors for heat pumps (V and VI)

For heat pumps the following values need also to be included:

- V. Difference between the seasonal space heating energy efficiencies under average and colder climate conditions, expressed in %.
- VI. Difference between the seasonal space heating energy efficiency under warmer and average climate conditions, expressed in %.

6.3.1.6. Space heating energy efficiency class of the package

The space heating energy efficiency class of the package is calculated according to the following table:

A+++[8]	≥ 150%
A++	≥ 125%
A+	≥ 98%
A	≥ 90%
B	≥ 82%

[8] A+++ class only applies after 26 September 2019.

C	≥ 75%
D	≥ 36%
E	≥ 34%
F	≥ 30%
G	< 30%

6.3.2. Calculation of water heating energy efficiency of packages according to Regulation (EU) No 811/2013 and Regulation (EU) No 812/2013

6.3.2.1. Water heating energy efficiency (I)

The value to be introduced is the water heating energy efficiency of the preferential heater, which can be a water heater, a combination heater, a cogeneration water heater or a heat pump water heater.

This information can be found on the product fiche that needs to be provided by the supplier of the product.

6.3.2.2. Solar contribution factors (II and III)

Elements II and III are calculated as follows:

$$II = \frac{220 \cdot Q_{ref}}{Q_{nonsol}}$$

$$III = \frac{Q_{aux} \cdot 2.5}{220 \cdot Q_{ref}}$$

Q_{ref} depends on the declared load profile.

	M	L	XL	XXL
Q_{ref}	5,845	11,655	19,07	24,53

Q_{nonsol} and Q_{aux} are to be found on the product fiche of the solar device.

For combinations of water heater, temperature control and solar device including a storage tank, η_{wh} is tested as indicated in the relevant Regulation, transitional methods, and when available, harmonised standards.

6.3.3. Calculation of energy efficiency index of packages according to Regulation (EU) 2015/1187

6.3.3.1. Energy efficiency index (I)

The value to be introduced is the energy efficiency index of the primary solid fuel boiler, which can be a regular solid fuel boiler or a solid cogeneration boiler.

This information can be found on the product fiche that needs to be provided by the supplier of the product.

6.3.3.2. Temperature control

Section 6.3.1.2. of these guidelines apply.

6.3.3.3. Weighting of the heat output of preferential and supplementary heaters (II)

Section 6.3.1.3. of these guidelines apply with,

- $P_{rated} = P_r$;
- for all solid fuel boilers except solid fuel cogeneration boilers

$$II = \frac{P_{sup}}{P_{rated} + P_{sup}}$$

and the table for preferential boiler space heaters or boiler combination heaters

– for solid fuel cogeneration boilers,

$$II = \frac{P_{rated}}{P_{rated}+P_{sup}}$$

and the table for preferential cogeneration space heaters, heat pump space heaters, heat pump combination heaters or low-temperature heat-pumps

6.3.3.4. Solar contribution factors (III and IV)

Section 6.3.1.4 of these guidelines apply.

6.3.3.5. Energy efficiency class of the package

The energy efficiency class of the package is calculated according to the following table:

A+++	≥ 150
A++	≥ 125
A+	≥ 98
A	≥ 90
B	≥ 82
C	≥ 75
D	≥ 36
E	≥ 34
F	≥ 30
G	< 30

Figure 1 (811/2013): Calculation scheme for preferential boiler heaters (space heating energy efficiency)

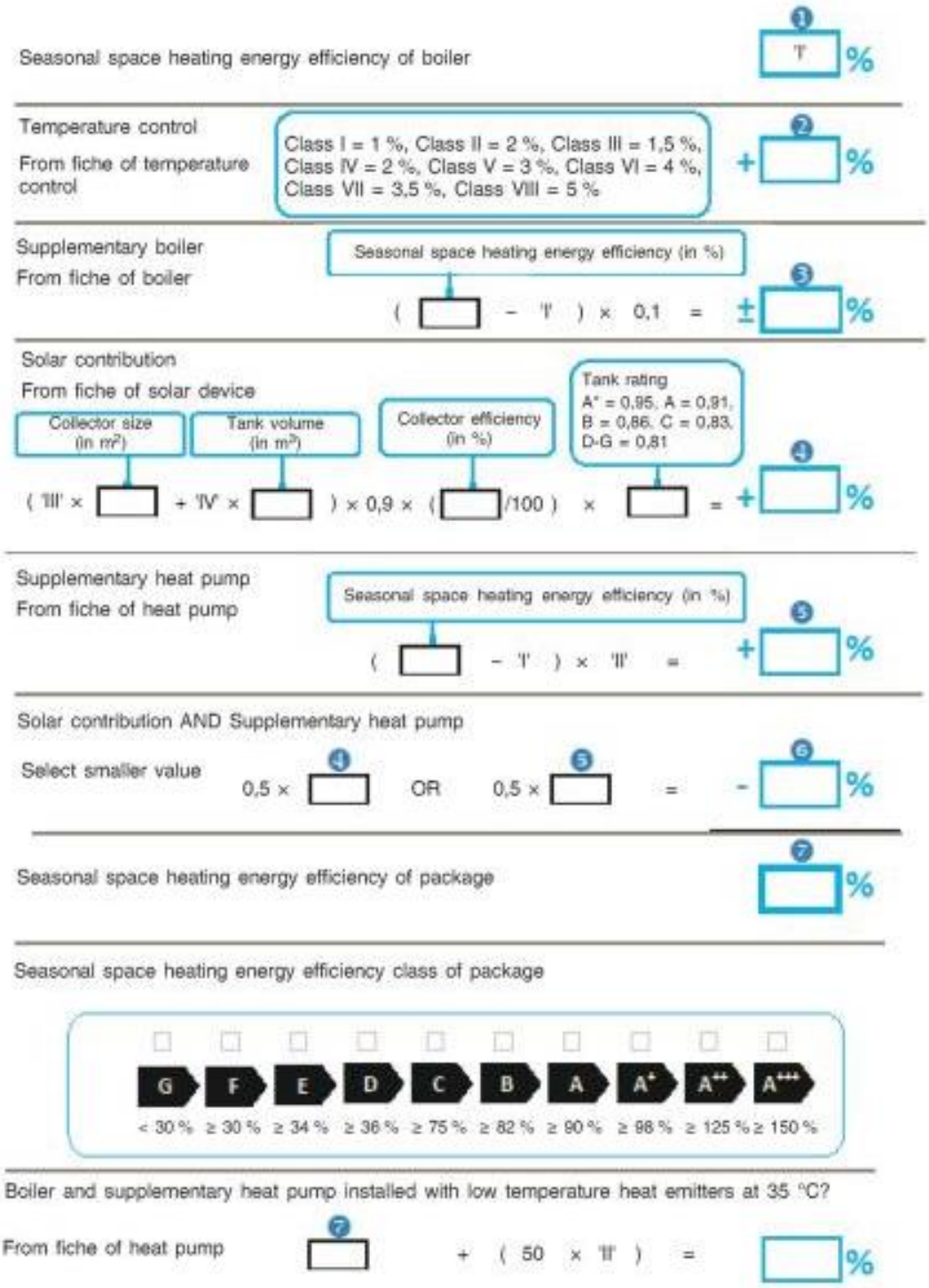


Figure 2 (811/2013): Calculation scheme for preferential cogeneration space heaters (space heating energy efficiency)

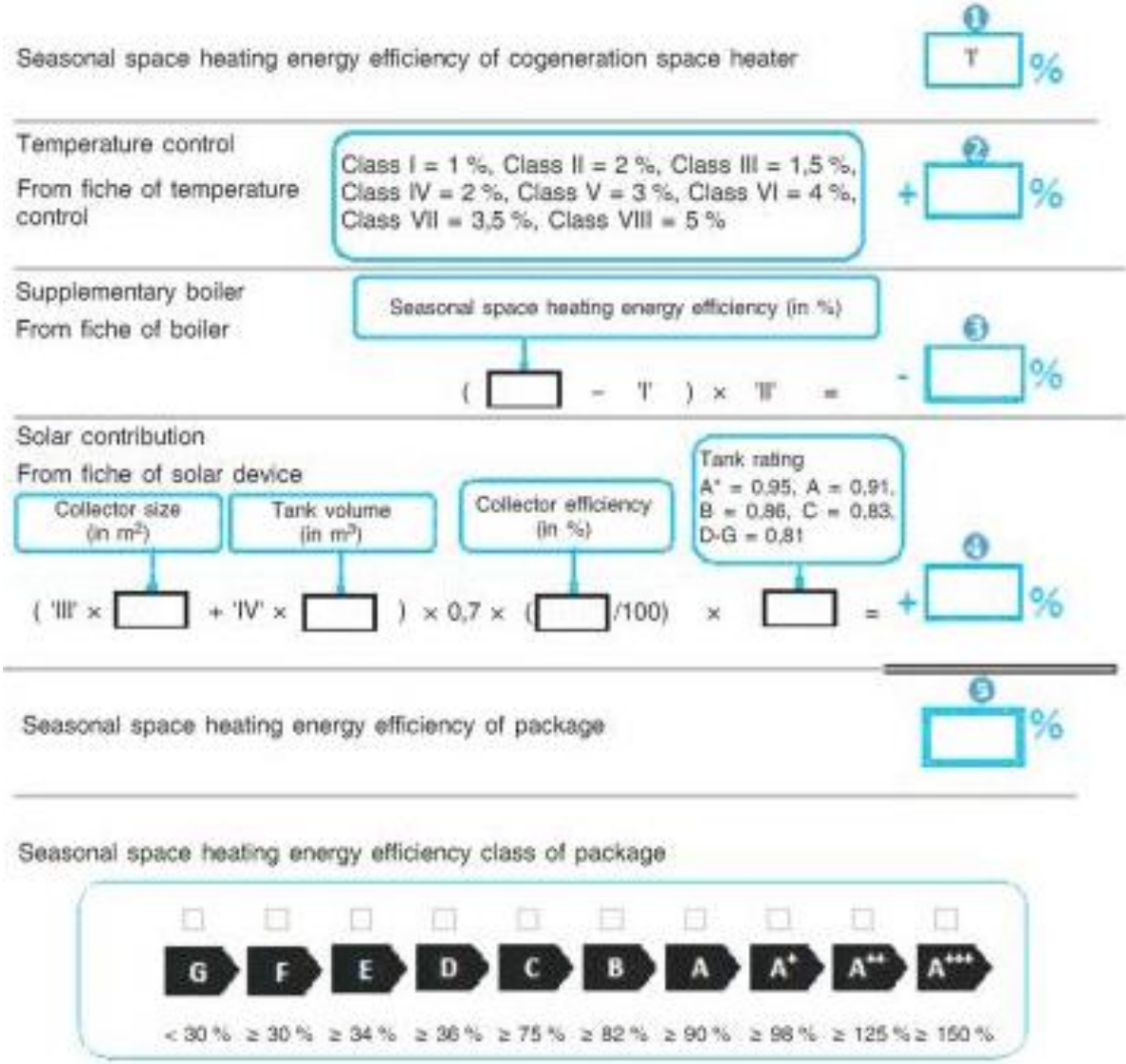


Figure 3 (811/2013): Calculation scheme for preferential heat pump heaters (space heating energy efficiency)

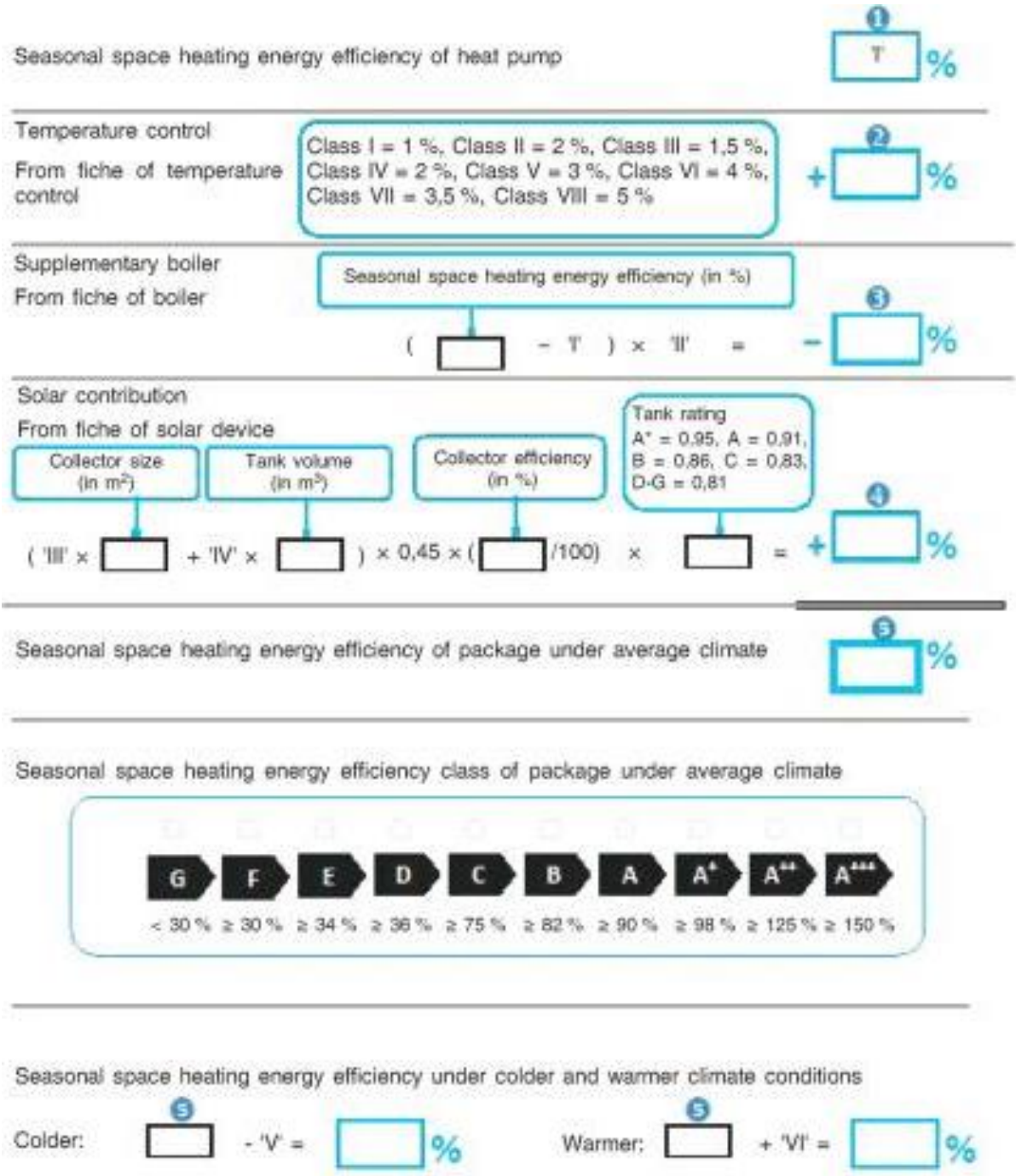


Figure 4 (811/2013): Calculation scheme for preferential low-temperature heat pump heaters (space heating energy efficiency)

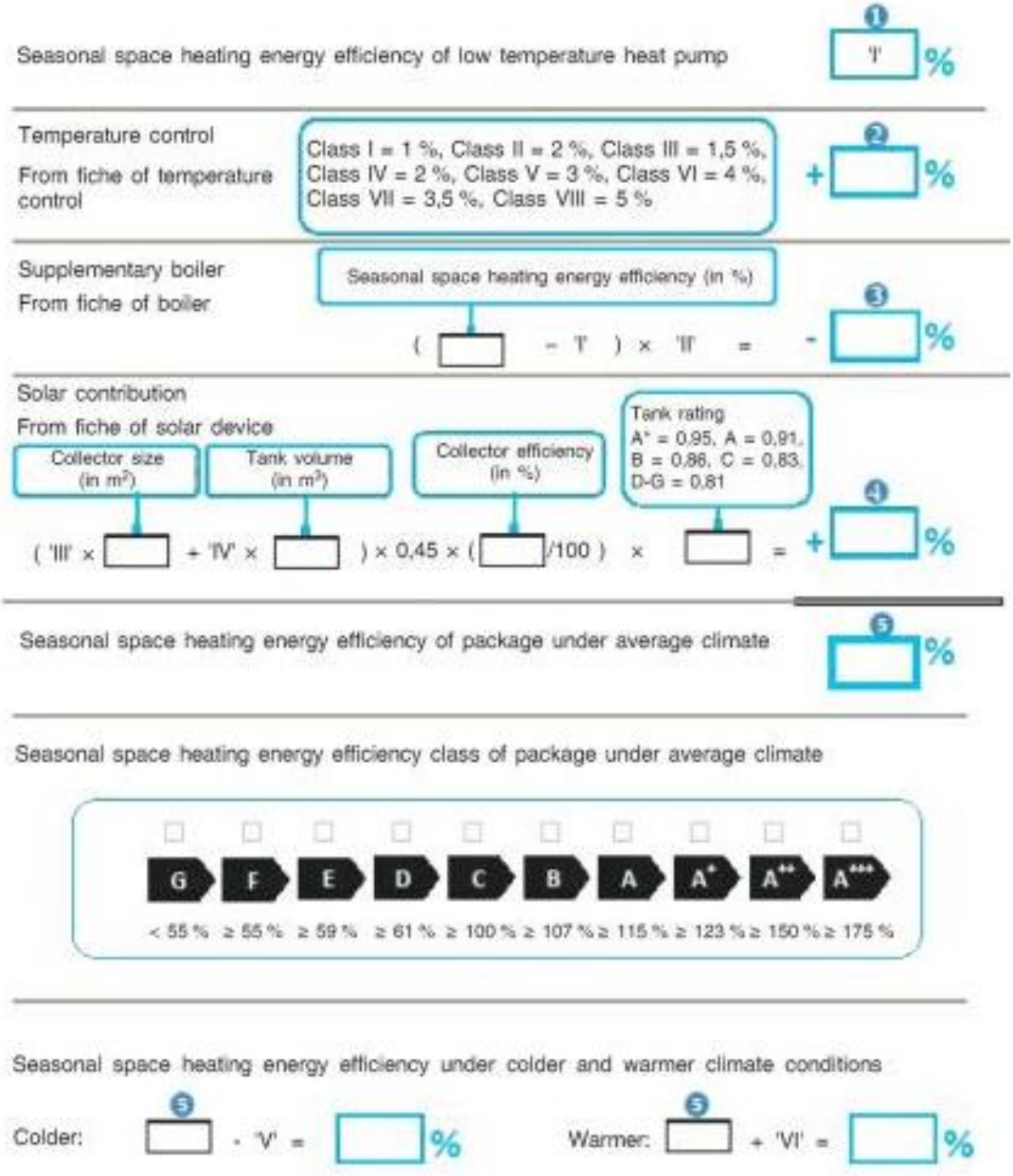


Figure 5 (811/2013): Calculation scheme for preferential boiler combination heaters (water heating energy efficiency)

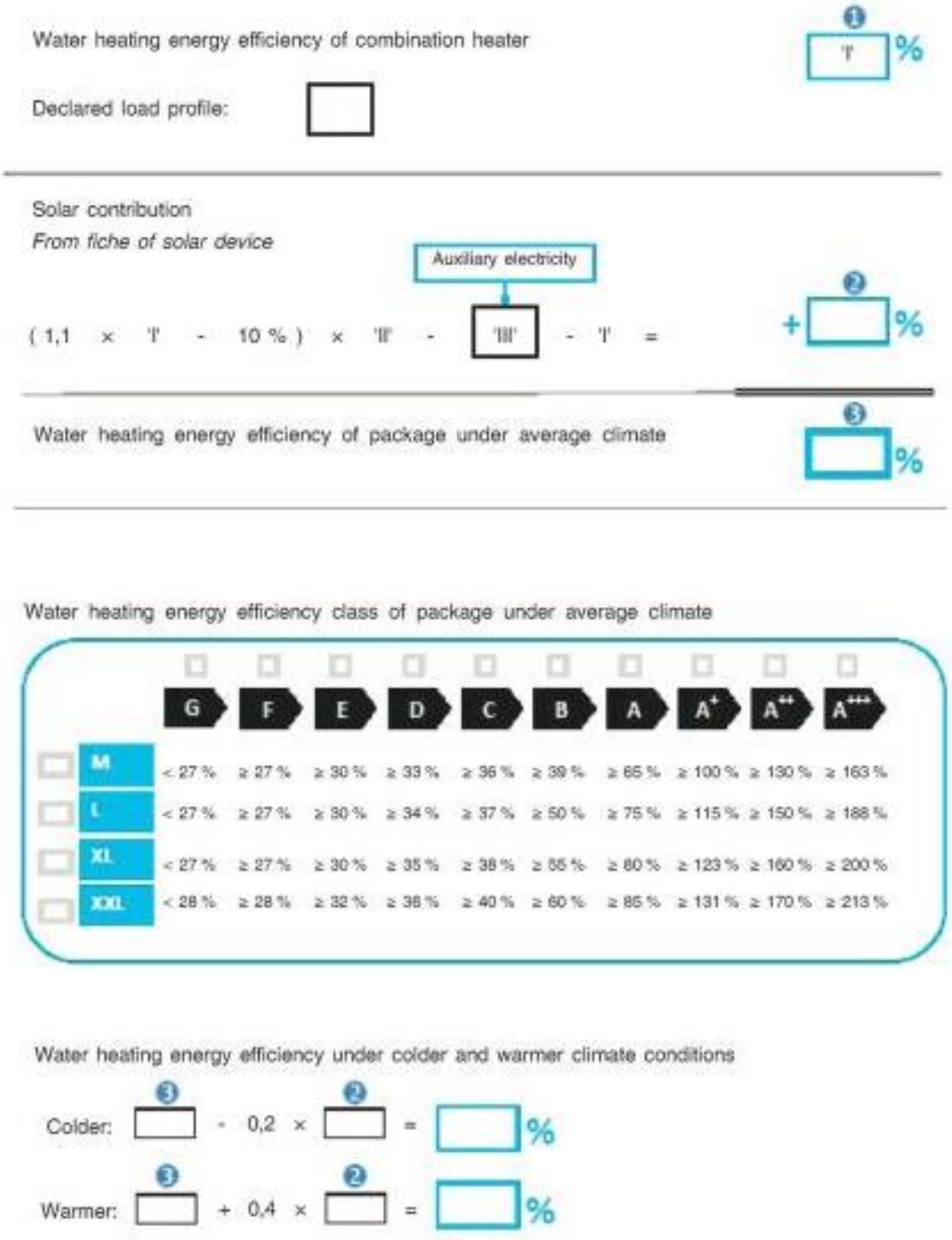


Figure 6 (2015/1187): Calculation scheme for primary solid fuel boilers (energy efficiency index)

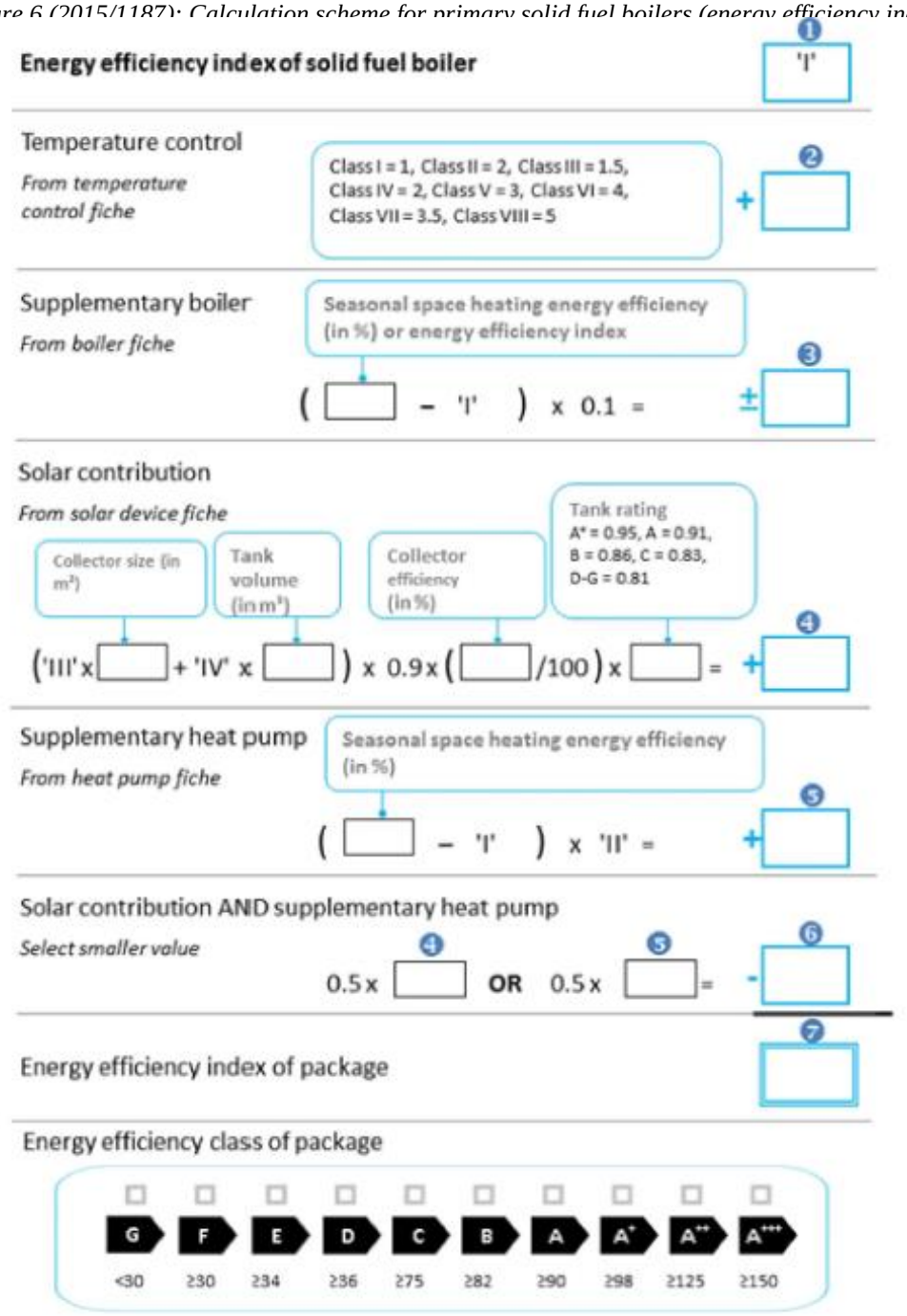
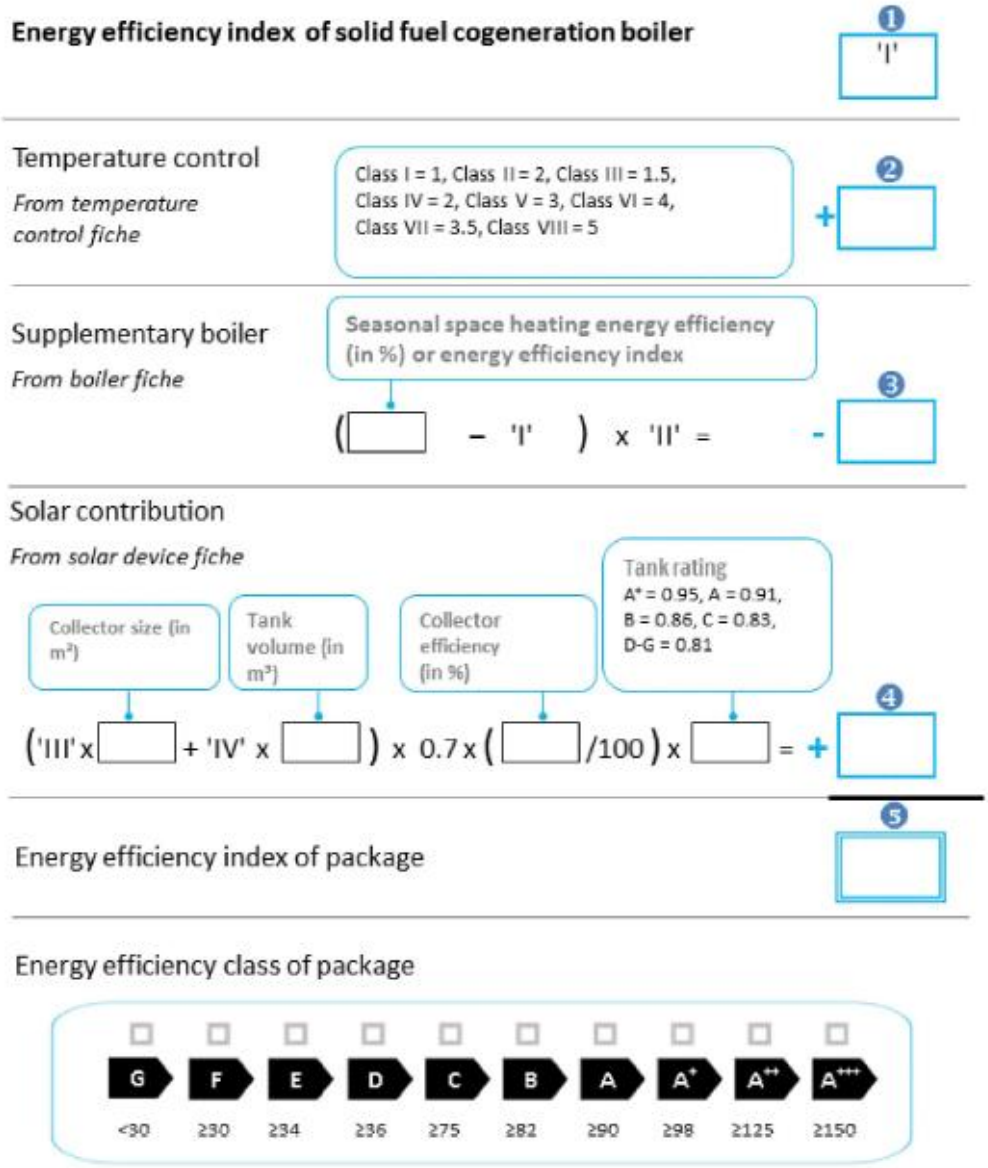


Figure 7 (2015/1187): Calculation scheme for primary solid fuel cogeneration boilers (energy efficiency index)



6.4. Packages where not all information is available

In some cases, notwithstanding Annex IV and V in the relevant regulations, all the information needed for the package label might not be available, e.g. for packages providing domestic hot water using a space heater the water heating energy efficiency might not be available, or might only be available for a combination of the space heater with a specific hot water storage tank (tested at the appliance level).

In this case, the dealer would not be able to provide the package label unless certain assumptions are made to estimate η_{wh} of a standard boilerboiler used in solar packages.

The methods presented in this chapter are for use ofof packages including a solar device and are not intended to be used as a way of labelling a space heater for its potential water heating efficiency when used with a conventional (non-solar) single coil cylinder.

6.4.1. Packages of water heater and solar device

For packages using a boiler space heater, the following calculation method is proposed.

$$\eta_{wh_calc} = \frac{Q_{ref}}{Q_{fuel} + CC \cdot Q_{elec} + Q_{cor}}$$

$$Q_{fuel} = \left(Q_{ref} + \left(24 - \frac{Q_{ref}}{P_4}\right) \cdot P_{stby}\right) \cdot \left(\frac{100}{\eta_4}\right)$$

$$Q_{elec} = Q_{elec,on} + Q_{elec,stby} = (24 - t_{on}) \cdot PSB + t_{on} \cdot el_{max}$$

$$t_{on} = \left(Q_{ref} + \left(24 - \frac{Q_{ref}}{P_4}\right) \cdot P_{stby}\right) \cdot \frac{1}{P_4}$$

All the necessary data can be found in the relevant Annexes of the Regulations or in the data sheet of the boiler.

This method makes a series of simplifications:

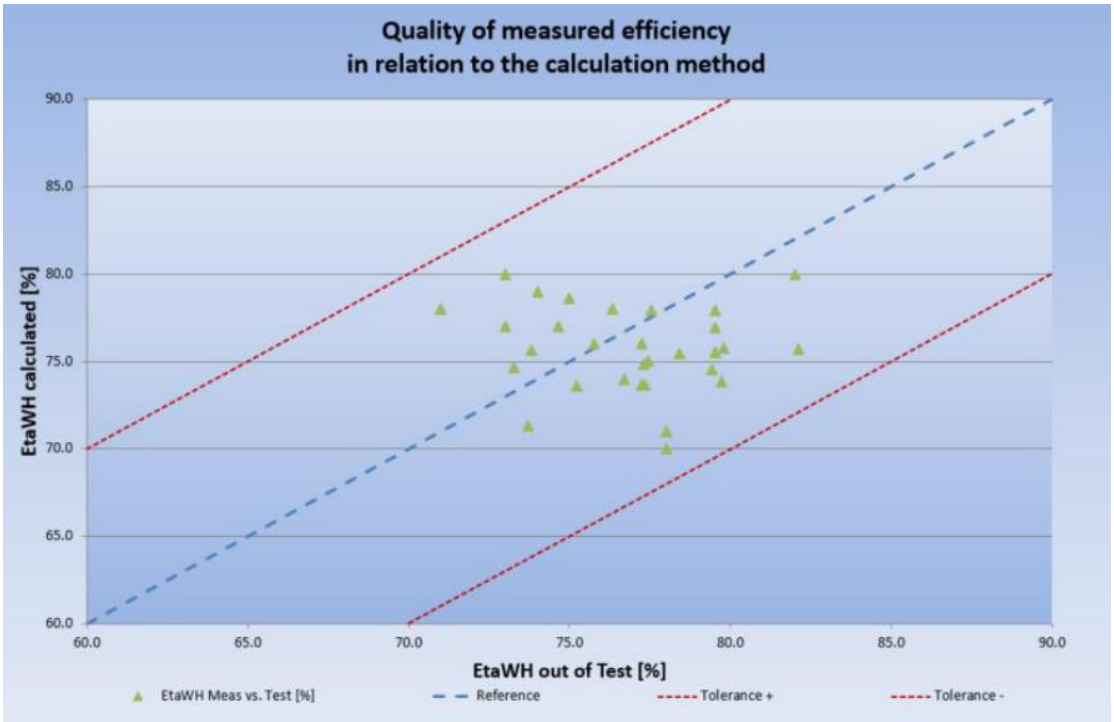
- The smart control factor is not used as it does not apply in this context;
- The tank losses are set to 0 as they are already considered in the SOLCAL method.

The scope of the energy labelling regulation excludes water heaters with a rated heat output > 70 kW and with a storage volume > 500 litres. Therefore, this method is only applicable to packages with a load profile M, L, XL and XXL.

The load profile to be selected is to be done according to the table below according to the storage capacity. The load profile to be selected is the next smaller one.

Profile	Capacity @ 40ºC	Minimum volume [55ºC]
M	65	44
L	130	87
XL	210	140
XXL	300	200

Several tests have been carried out in order to verify the applicability of the proposed method, the results of which are shown below.



In order not to create an incentive driving the market towards calculation instead of measurements and to ensure that adequate information is provided to consumers the water heating energy efficiency to be used for the purposes of the package label when the calculation method is being used shall be corrected using the formula below:

$$\eta_{wh} = \eta_{wh_calc} \cdot 0.95$$

The graphic presented above is based on a series of 30 tests carried out according to EN 13203-2:2006 and the calculation method presented above.

If a normal error distribution is presumed, the correction applied to calculated results makes them more conservative than measured ones in around 90% of the cases.

6.4.2. Packages of heat pump and solar device

For packages using a heat pump space heater, the following calculation method is proposed:

$$\eta_{wh_calc} = f \cdot \frac{COP_{rated}}{CC} \cdot \frac{Q_{ref}}{Q_{ref} + S \cdot 24h}$$

All the necessary data can be found in the relevant Annexes of the Regulations or in the data sheet of the heat pump.

The adjustment factor f is to be chosen according to the table below:

Type	**Outdoor air**			**Exhaust air**	**Brine**	**Water**
Climate	**Average**	**Colder**	**Warmer**	**All**	**All**	**All**
f	0.919	0.840	1.059	0.888	0.931	0.914

COP_{rated}: rated coefficient of performance at standard rating conditions at medium-temperature application (55°C outlet temperature) according to EN 14511 for air-to-water, brine-to-water, water-to-water heat pumps or to EN 15879 for direct exchange-to-water heat pumps

CC: the value of the 'conversion coefficient' is 2,5.

This method makes a series of simplifications:

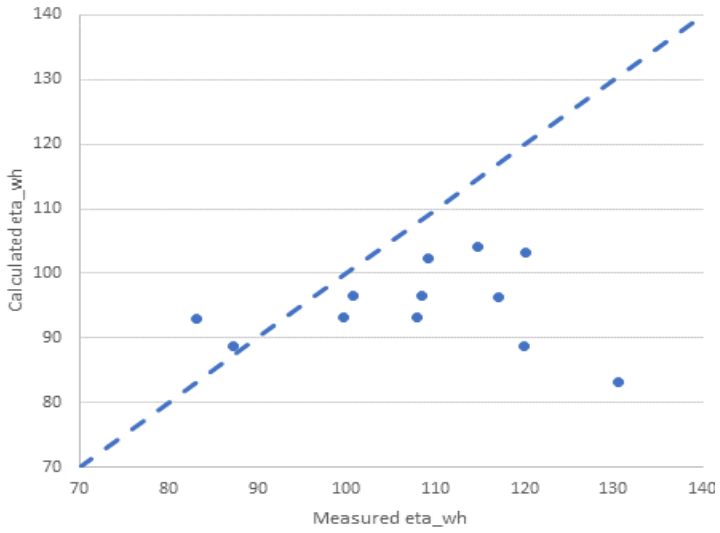
- The total energy demand is provided by charging the tank at 60ºC, in consequence, this method does not apply to low-temperature heat pumps;
- At least 0.25 m^2 of heat exchanger surface are used per kW of thermal capacity;
- The storage losses are pre-determined by standard measurement at a storage temperature of 65ºC;
- The smart factor is not taken into consideration;
- The approach is suitable for heat pumps with electrically driven compressors.

This method is not suitable for low temperature heat pumps.

The scope of the energy labelling regulation excludes water heaters with a rated heat output > 70 kW and with a storage volume > 500 litres. Therefore, this method is only applicable to packages with a load profile M, L, XL and XXL.

The load profile to be selected is to be done according to the table below according to the storage capacity. The load profile to be selected is the next smaller one.

Profile	Capacity @ 40ºC	Minimum volume [55ºC]
M	65	44
L	130	87
XL	210	140
XXL	300	200



In order not to create an incentive driving the market towards calculation instead of measurements and to ensure that adequate information is provided to consumers the water heating energy efficiency to be used for the purposes of the package label when the calculation method is being used shall be corrected using the formula below:

$$\eta_{wh} = \eta_{wh_calc} \cdot 0.95$$

The graphic presented above is based on a series of 13 tests carried out according to EN 16147:2011 and the calculation method presented above.

If a normal error distribution is presumed, the correction applied to calculated results makes them more conservative than measured ones in around 94% of the cases.

7. MEASUREMENTS AND CALCULATIONS, THE RELATIONSHIP BETWEEN THE REGULATIONS, THE COMMISSION COMMUNICATIONS AND HARMONISED STANDARDS

For purposes of conformity assessment and verification of compliance, measurements and calculations shall be done by using harmonised standards.

If the reference numbers of the standards have not been published in the Official Journal of the European Union, the standards have not been recognised by the European Commission as providing presumption of conformity with the Regulations. In that case, the regulations have to be applied in combination with the Commission communications, also referred to as the transitional methods.

In case the Commission communication and/or the standard contradict the regulation, the regulation prevails.

In the following table, the Regulations and the related Commission Communications are shown:

Product group	Regulations	Commission Communication (Transitional methods)
Water heaters	(EU) No 814/2013 and (EU) No 812/2013	(2014/C 207/03) OJ C 207 p 22-40
Space heaters	(EU) No 813/2013 and (EU) No 811/2013	(2014/C 207/02) OJ C 207 p 2-21
Solid fuel boilers	(EU) 2015/1189 and (EU) 2015/1187	(2017/C 076/01) OJ C 76 p 1-3

8. FREQUENTLY ASKED QUESTIONS

Use and obligations regarding the label

1. Is voluntary application of the label before the official introduction admitted? How to ensure uniform application in the EU?

Voluntary application of the label before the official implementation date is not allowed. Delegated acts specify the date from which a particular label shall be supplied. If it is supplied and subsequently displayed before that date the label is thus used in a manner not provided for in the delegated act.

2. Can the energy label be displayed before application at trade fairs, where products are not sold and end-users do not have access (the fairs are only for professional intermediates, such as installers)?

The energy labelling Regulations establish that the dealer has to ensure that each space heater, water heater and boiler bears the label at the point of sale. A trade fair, where products are not sold and end-users do not have access, is not a point of sale, there is no obligation to display the label and at the same time information can be provided to professionals about the energy labelling class

of the product. Even if no energy labelling legal requirements apply, common sense dictates that in order to provide accurate information, the labels displayed shall be in line with the relevant regulations.

3. ***Should the energy label be delivered together with the product inside the box, or could it be provided for each product by means of separate literature regarding the product, websites, brochures, evidence at sales point, etc.?***

According to Article 3 of Regulation 811/2013, 812/2013 and 2015/1187, the label shall be printed; there is no specific indication on where to provide it, but websites cannot be used to provide "printed" labels. The supplier has to make sure that the products that are placed on the market are accompanied, for each individual unit, with the correct printed label. It is to be understood that the dealer has to be provided with correct and clear information on the energy performance of heaters. For heat pump space heaters there is a specific provision indicating that the label has to be provided at least in the packaging of the heat generator.

4. ***With regard to the obligation to communicate the efficiency class, the definitions of energy related information and technical parameters are unclear (e.g. are dimensions technical parameters?).***

Dealers are obliged to provide information on the energy efficiency of the product together with any technical promotional material or together with information describing the technical parameters of the product. The technical parameters are reflected in Annex V of the respective Regulations. Dimensions are not listed as technical parameters.

5. ***Is a price list of the supplier, which is used for dealers only, defined as advertisement?***

Any advertisement relating to a specific product and containing price information has to include a reference to the energy efficiency of the product. As price lists obviously include information on prices, they are covered by this obligation.

For price lists used in digital format, e.g. for retailers' databases, a reference to the seasonal space heating energy efficiency class under average climate conditions for that model should be included.

6. ***For combination heaters with components delivered separately, should the manufacturer use one or two labels when bringing the products to the market? What if components are then sold separately by anybody in the distribution chain?***

If the combination heater and the domestic hot water tank are sold under two different model identifiers, then the domestic hot water tank is considered as a hot water storage tank and the two components shall be labelled separately. They also need to be tested as individual products and meet the minimum requirements set for them.

For solid fuel combination boilers, the water heating efficiency is not regulated. The label of a combination boiler should include the symbol for the water heating function, see Annex III of Regulation 2015/1187. Hot water storage tanks sold under different model identifiers and combined with these

heaters are regulated under Regulations 814/2013 and 812/2013. They should meet the minimum requirements and be labelled separate accordingly.

7. ***How to deal with "double-configuration boilers" in the Regulations 811/2013 and 813/2013 – i.e. boilers or combi-boilers provided with two possible installation configurations, first a more classic configuration for a condensing boiler, where the connection with a condensation disposal system (drain tube or collection tank) is foreseen, second an alternative configuration where a "bypass", supplied by the boiler manufacturer with full installation and regulation instructions, is foreseen between the supply and return heat transfer fluid pipes, to decrease the condensation formation?***

Given that the product is placed on the market with two possible configurations, test reports should be available for both those configurations:

- For configuration 1: the more classic configuration for a condensing boiler, where the connection with a condensation disposal system (drain tube or collection tank) is foreseen;
- For configuration 2: the alternative configuration where a "bypass", supplied by the boiler manufacturer with full installation and regulation instructions, is foreseen between the supply and return heat transfer fluid pipes, to decrease the condensation formation.

Both those 'products' need to be compliant with the Regulations 811/2013 and 813/2013, and two energy labels need to be provided. The values can be declared through two different product information sheets.

However, if the "bypass", provided either as an accessory or directly with the boiler, does not directly or indirectly alter the energy efficiency of the boiler – but, for example, only modifies the distribution performance – it should not be considered as changing the boiler configuration. In this case, the boiler does not require any additional testing or additional conformity assessment, nor additional energy label(s) / declarations under Regulations 811/2013 and 813/2013. However, information about the function of the bypass should be provided, including information on why this does not alter the energy efficiency of the unit.

8. ***How to deal with the labelling and ErP requirements of hybrid products made by the combination of two or more technologies in one casing, delivered on the market by one supplier? How to deal with heat pump integrating a fossil fuel supplementary heater?***

A "hybrid" put on the market consisting of two or more technologies integrated in one casing would be considered a single "product". A hybrid consisting of a heat pump and a gas boiler is to be considered a heat pump as boiler space heaters are defined as space heaters that generate heat using the combustion of fuel and / or the Joule effect.

In the absence of a calculation methodology for heat pumps integrating a fossil fuel supplementary heater, suppliers can use the same methodology proposed by EN 14825 for electrical supplementary heaters by replacing performances of electrical supplementary heater with the performances of fossil fuel

supplementary heater. It is up to the standardisation process to develop specific standards for these hybrid products.

9. How to deal with a hybrid heat pump made by an electrical driven heat pump space heater and a boiler combination heater, where the water heating function is provided by the fossil fuel boiler and the heating function is provided by both? What kind of label can be used?

The hybrid heat pump can be labelled as a heat pump combination heater, in which the water heating performance has been tested according to gas boiler combination heater methodology, while the space heating performance has been evaluated according to FAQ(8).

10. How can cogeneration space heaters that also provide domestic hot water be labelled?

Cogeneration space heaters are defined as space heaters that simultaneously generate heat and electricity in a single process. In principle, they can also be designed to also provide heat to deliver hot drinking or sanitary water at given temperature levels, quantities and flow rates during given intervals and be connected to an external supply of drinking or sanitary water.

In such cases, information about their water heating energy efficiency shall also be provided in the energy label, by using one of the following two options:

- Use the labels foreseen in Regulation 811/2013 for cogeneration space heaters and for combination heaters.
- Use the label foreseen in Regulation 811/2013 for combination heaters including the pictogram corresponding to the electricity function.

It is to be noted that the seasonal space heating energy efficiency of combination heaters needs to be determined according to point 3 of Annex VII of Regulation 811/2013. In the case of their water heating energy efficiency, point 5 needs to be applied, which mean that their electrical efficiency is only taken into account for the determination of their seasonal space heating energy efficiency. When the review of the Regulations is carried out, this point is to be taken into account.

For solid fuel boilers, the water heating efficiency is not regulated. It is sufficient for solid fuel cogeneration combination boilers to use the pictogram corresponding to the water heating function and the electricity function as indicated in Annex III of Regulation 2015/1187 (see also answer to FAQ 6 above).

11. Do solar hot water storage tanks (solar devices designed to be connected to solar collectors) have to comply with ErP requirements and to be labelled as hot water storage tanks?

A solar hot water storage tank is a subcategory of a hot water storage tank and has therefore to meet the relevant requirements under the Regulations.

12. How should a water heater with a rated heat output < 70 kW be labelled under Regulation 812/2013, declared ErP compliant according to load profile 4XL under Regulation 814/2013? Which load profile needs to be used?

The water heater is in the scope of the energy labelling Regulation and therefore needs to be labelled. The load profile to be used is one of the load profiles provided in the Energy Labelling Regulation.

13. Is it mandatory to label a solar natural circulation system as a hot water storage tank?

A natural circulation system consists of a solar hot water storage tank specifically designed to be connected to one or more solar collectors. The product is only able to work in this specific configuration and is sold using a single model identifier.

The natural circulation system is a solar only system. If the tank is never sold as a single device, it does not need to be labelled as a hot water storage tank. The necessary information for issuing the package label shall be provided.

14. Can the symbol of the sound power level be removed from the label of conventional or solar water heaters (not subject to Ecodesign requirements on sound power level)?

The format of the label shall be respected, the symbol cannot be removed. The transitional methods (2014/C 207/3) provide information about the determination of the sound power level of different types of water heaters.

If no sound power level is applicable then a dash (-) must be inserted as the value for this symbol.

15. Does a manufacturer who is placing a package on the market need to provide both the package label and the product label?

Yes. Any economic actor that is placing a package on the market has to fulfil the obligations set out by the Regulation and needs to provide the package label. If in addition it is also placing the different components of the package on the market individually, it also needs to provide the product labels.

16. How to deal with packages of a space heater or a solid fuel boiler, temperature control and solar device made with storage tanks larger than 500 l?

Energy label classes are only provided for storage tanks with a capacity up to 500 l. Packages incorporating a storage tank with a volume larger than 500 l and a space heater or water heater with a capacity below 70 kW are in principle covered by the definitions of the Regulations.

In order to properly calculate the solar contribution, the tank rating can be calculated according to the standing loss S using table 4 of Regulation (EU) 811/2013.

17. How to deal with packages of a space heater or a solid fuel boiler, temperature control and solar device made with a solar device, in which one solar collector is connected to two or more storage tanks with different tank ratings?

The calculation scheme Annex IV of the respective regulations is only provided for one solar connector connected to one tank.

In cases where the solar collectors are connected to more than one tank, the sum total of the included volumes can be applied; the volume-weighted

standing losses and the worst energy efficiency class of the tanks should be used.

18. How to deal with a package of a combination heater temperature control and solar device in which one solar connector is connected to one or more tanks for space heating and one or more tanks for water heating?

Analogous to the answer to FAQ 17.

19. When a heat pump space heater, combination heater or water heater does not have an indoor unit (e.g. monobloc heat pump), what should be shown on the Energy Label and the product fiche regarding indoor sound power level? How shall suppliers show this on the label, when they are not allowed to remove the sound power level symbol? Shall they include the symbol without adding a number?

In this case, indoor sound power level is not applicable;; it is sufficient to fill in a dash in the label and the product fiche for the indoor sound power level. The product should be marketed as heat pump for outdoor installation only. On the energy label where the value for the indoor sound power needs to be added, a dash should be filled in.

20. Shall the energy label and the product fiche include information for the colder climate conditions even if the product is not intended to be used under such conditions? What if the TOL > -15°C?

Single market rules establish that products can move freely through the EU, it is in consequence necessary to provide information for the different climate conditions independently of where the product will be placed on the market. The Regulations do not establish that any climate condition is optional.

However, when TOL is higher than -15°C for technical reasons, the rated heat output cannot be declared as per the regulation. In this case, it is sufficient to fill in a dash on the label for the rated heat output under cold climate and state clearly in the fiche that this heat pump is not designed for cold climate conditions. For heat pump combination heaters, this also applies to the water heating energy efficiency and the corresponding annual electricity consumption.

21. Model series of heat pumps that consists of e.g. 3 to 5 different outdoor units of various heat capacities may be combined with several indoor units, normally containing a storage tank, supplementary heater and a control. Each part can be sold as a spare part or be used in combination with one or several other parts. Each part is however not intended to be used on its own. The final decision on which parts to combine is made by the installer on the basis of the heat demand and other technical requirements. When these types of products are sold through wholesalers the manufacturer does not know which units that will be combined at the point of sale to the end consumer. Under these circumstances clarity should be provided regarding what labels need to be provided by the manufacturer.

Article 3 “Responsibilities of suppliers and timetable” of the Directive states that for heat pump space heaters and heat pump combination heaters, an energy label has to be provided with the heat generator. It does not say that the supplier is obliged to provide all possible labels that may apply to the product

in the packaging. The supplier may choose to deliver one label of on possible combination and it is reasonable that this label should reflect the most common combination and that the packaging should contain information on where and how information on all other combinations and respective labels may be found. The label should clearly show in the field for the model identifier, what combination it represents.

Article 3 does not restrict the supplier to provide only one label. The supplier may provide a space heater product label, as well as a combination heater product label and package label for common combinations.

If the indoor unit is not intended to be used on its own, but only in combination with a specific type of heat generator, it should not be treated as a product on its own and does thus not require an energy label. However if the indoor unit is a storage tank that may be used in combination with any type of boiler or heat pump it has to be labelled as a storage tank.

22. Shall the negative contribution F(1)=3% be used even though the product has an integrated control and is therefore not intended to be used in a package with any further control?

Yes. Otherwise there is risk for misuse of the bonus values for the different controls, that they are added on the package label by the dealer, even though no reduction of F(1)=3% had been done on the declaration on the product label.

23. In addition to the product label, is it also possible to put a package label (heat pump + temperature control) on the unit, for which the bonus value for the temperature control (1,5 – 5%) is added to the etas value? If not, the brine-to-water heat pumps will not be able to benefit from advanced temperature controls.

It is possible for the manufacturer (supplier) to prepare a package label for different combinations of the heat pump space heater and different types of control and distribute them with the space heater. Then the dealer can select and fill in the appropriate number on the package label and fiche for the control system he/she sells or offers the consumer together with the heat pump space heater. The appropriate number and type of sensors and/or thermostats for the selected temperature control class shall be included in the package. If the manufacturer or supplier fill in and finalize the package label and fiche, the appropriate number of sensors must be sold together with the space heater and temperature control.

24. How shall the dealer declare and label combinations of more than two space heaters?

If more than two heat pumps are installed together, it is sufficient that the separate space heaters are labelled with a product label. The dealer can of course calculate the expected performance of the package and include that in the offer (but not on a package label as this combination is not covered by its definition).

25. In the heat pump and solar system labels, there are "European temperature maps" and "European solar maps" displaying three zones. Where can we find a precise definition of these zones?

These zones were defined during the development of Regulation 206/2012 on air conditioners and are based on the climatic conditions of Strasbourg, Helsinki and Athens. Nevertheless, these zones are only indicative.

26. Are templates of the labels available for stakeholders to download?

Templates for the labels are available on the DG ENER Website.

http://ec.europa.eu/energy/efficiency/labelling/labelling_en.htm

27. If a heat pump combination heater is labelled with domestic hot water efficiency for a given profile, does it mean that the capacity and the efficiency for the space heating mode must be declared for the same ventilation exhaust rate?

No, different ventilation exhaust rates can be used if the heat pump has been tested for them and if they apply to the different operation modes.

28. If an installer combines a package within the scope of the regulation at the customer's site, possibly with parts from different suppliers/dealers? Is the installer then to be seen as a supplier who has an obligation to preparepreprepare a package label for the installed combination? The regulation does not mention installers and the role of installers.

The regulation does not refer to 'installer', but it does refer to 'dealer'. A package label has to be provided by the dealer defined in the Energy Labelling Directive as "retailer or other person who sells, hires, offer for hire-purchase or displays products to end users". If the person installing the product is doing any of these, he/she will be considered the "dealer" and the package label is required. In addition, note that the package label has to be presented to the end user prior to sale and installation.

29. According to the regulations, a reference to the seasonal space heating energy efficiency class under average climate conditions for that model shall be included in advertisement and technical promotional material. For medium temperature heat pumps, which energy efficiency class is to be indicated; the one for medium temperature applications or for low temperature applications?

Since the medium temperature application is the most common application, at least the energy class for this application should be displayed in advertisements and technical promotional material. In case both classes are displayed, the correct temperature application should clearly be indicated together with each class.

30. Which seasonal space heating energy efficiency class shall be used on the space heater package label for packages of heat pumps (point 3 of Annex III of Regulation 811/2013), the one for low-temperature application (35°C) or for the medium-temperature application (55°C)?

For all heat pumps, except low temperature heat pumps, the seasonal space heating energy efficiency class for the medium-temperature application (55°C) shall be displayed on the space heater package label.

For low temperature heat pumps, the seasonal space heating energy efficiency class for the low-temperature application (35°C) shall be displayed on the space heater package label.

31. Which seasonal space heating energy efficiency class shall be used on the combination heater package label for packages of combination heaters (section 4 of Annex III of Regulation 811/2013), the one for low-temperature application (35°C) or for the medium temperature application (55°C)?

The seasonal space heating energy efficiency class for the medium-temperature application (55°C) should always be displayed on the combination heater package label.

32. Is it enough to include information on the energy efficiency class of the package (e.g. a heat pump combination heater with integrated temperature control) according to 811/2013 Article 3, 6 (d), or is it necessary to also include information on the energy efficiency class of the product (i.e. the heat pump, which is never sold without the temperature control) according to 811/2013 article 3, 2 (d)? Thus, is it necessary to include 4 energy efficiency classes in the advertisement of a package, or is it enough with 2?

Four classes have to be provided: the space and the water heating classes of the heater and of the package.

33. Does it have to be made clear that the energy efficiency class of a package in an advertisement is related to a package and not a product? In cases where the package consists of a space heater or heat pump space heater and solar devices it will be clear, but not in cases where the package consists of a heat pumps space heater with integrated temperature control.

In the case of a package, both the classes of the heater and of the package have to be indicated. If multiple classes have to be indicated in advertisements, it is necessary to indicate which class refers to what.

34. How should a heat pump combination heater be labelled that

- ***fulfils the ecodesign requirements for water heating energy efficiency (e.g. 30 % for load profile L);***
- ***fulfils the ecodesign requirements for seasonal space heating energy efficiency for low temperature heat pumps (115%);***
- ***does not fulfil the ecodesign requirements for seasonal space heating energy efficiency for heat pump combination heaters (100 %).***

There is no label for low temperature heat pump combination heaters.

If the ecodesign regulation allows this product to be placed on the market, then it cannot be labelled. If it would carry a label this would mean that it is considered a (medium temperature) combination heater that would not meet the ecodesign requirements.

35. According to regulation (EU) 518/2014 the energy label must be displayed in web shops and if necessary through a nested display. If a nested display is used, the image used for accessing the label should be an arrow stating the energy class and having the colour of the correspondent energy class. However, the energy label covering heat pumps states two energy classes

covering the space heating function for medium- and low-temperature application, respectively. In addition when selling a combination heater for both space heating and hot water production, there are two energy classes; one for heating efficiency and one for hot water production efficiency Which one is to be used for the nested display image?

Regulation 518/2014 refers to 'the' image which indicates on its arrow 'the' energy efficiency class. Thus, there should be only one nested display image for one label and indicating one class. The 'nested display' referred to in Annex IX of Regulation 811/2013 (introduced by Regulation 518/2014) is optional, as such it is possible for dealers to avoid this issue and display the label directly by not using a nested display.

Given that this may require more screen space (cf. recital 6 of Regulation 518/2014) the option of nested display is nonetheless available for heat pumps and combination heaters. For heat pumps, considering that the medium temperature application is the most common one, the nested display image should indicate the medium temperature (55 °C) application class. For combination heaters, considering that Regulation 811/2013 defines a combination heater as a space heater with the function of providing heat to deliver hot drinking or sanitary water being additional, the nested display image should indicate the seasonal space heating energy efficiency class.

36. The energy label for heat pump space heaters includes a value for the sound power level. Label example in Annex III, point 1.1.3. The test standard prescribes, that measurements are to be performed at "standard rating conditions" – however, there are two standard ratings for these heat pumps, both high temperature (55 °C) and low temperature (35 °C). Neither the regulation, the test standard (EN 14825) nor the Guidelines provided by the Commission clarifies which of the conditions measurements are supposed to cover. Which conditions are to be applied when measuring sound power level?

Measuring the sound power level at both conditions may lead to extra cost at no obvious benefit. As long as the standard does not specify at which of the two standard rating conditions measurement should be performed, testing at the medium temperature conditions (55 °C) seems the most appropriate as it is the most common application.

37. How should packages consisting of both a space heater a water heater and a ventilation unit be labelled and documented?

An assessment of the contribution from the discharged air from the ventilation unit (after the passive heat exchanger) is not defined in the regulations.

As such, the combined unit needs to be tested as prescribed by the Regulations on space heaters, water heaters and ventilation units and the relevant standards. If the mentioned contribution is not considered in the Regulation or harmonised standards, then it cannot be taken into account.

38. For a cogeneration space heater with one supplementary heat pump space heater Regulation 811/2013, annex IV, Figure 2 presents the rules for a package consisting of a preferential cogeneration space heater combined with temperature control, supplementary heater and/or solar device. However, the only option for a supplementary space heater is a (one) boiler

space heater (and not a heat pump space heater). Can Figure 2 also be used to determine the package label for a package consisting of a cogeneration space heater combined with one or more supplementary space heaters where one of them is a heat pump space heater?

Yes, but the factor "II" shall be the one calculated according to Table 6 for heat pumps.

39. In Regulation 811/2013, annex IV, Figure 1, the rules for a package consisting of a preferential boiler space heater combined with temperature control, supplementary heaters and/or solar device is presented. In these rules, there are two options for a supplementary space heater - one boiler space heater and one heat pump space heater. Can a manufacturer use this Figure 1 to calculate the package label by: 1) inserting the seasonal efficiency of the preferential cogeneration space heater instead of the seasonal efficiency of a preferential boiler; 2) inserting the seasonal efficiency of the supplementary boiler space heater; and 3) inserting the weighing factor "II" of table 6 instead of the factor "II" of table 5 and the seasonal efficiency of the supplementary heat pump space heater?

Yes, the package is covered by the regulation and this is the only way to take both supplementary heaters into account.

40. What does the 'biomass label factor' used for solid fuel space heaters mean?

The 'biomass label factor' was introduced to promote renewable energy in line with Directive 2009/28/EC. The value of 1.45 reflects consumer expectations of running costs for boilers (biomass, coal, oil, gas) in different label classes and positions these boilers in the same label class as other renewable technologies in scope of the regulation.

41. At the point of sale, how shall products that are also defined as packages (i.e. boilers and heat pumps with integrated temperature control) be labelled? Should they have only the product label, only the package label or both the product and the package label displayed clearly visible?

At the point of sale, products that are also defined as packages (for example, boilers and heat pumps with integrated temperature control) should have both the product and the package label displayed and clearly visible.

Conformity assessment

42. For boilers, except solid fuel boilers, which items are covered by third party certification under Article 7(2) and 8 and Annexes III to V of Council Directive 92/42/EEC?

According to Regulation (EU) 813/2013, all the items applicable under Articles 7(2) and 8 and of Annexes III to V of the Boiler Efficiency Directive 92/42/EEC (BED) shall be identical to the scope of Council Directive 92/42/EEC. In effect, this means that third party certification only applies to the energy efficiency of boilers fired by liquid or gaseous fuels which were previously covered by the BED.

Third party certification should therefore only apply to the efficiency values like the values declared in the BED, so that the existing conformity assessments delivered by Notified Bodies under the BED – i.e. calculated

value out of the measured full load efficiency and part load efficiency – are still valid (or default values can be applied as stated in the transitional methods).

43. Which Bodies can act as a Notified Body using Regulation 813/2013 and what are the notification criteria?

Clause 8 and Annex V of Council Directive 92/42/EEC continue to apply and therefore Notified Bodies continue to exist under Council Directive 92/42/EEC. Applications of new Bodies looking to become a Notified Bodies shall be based upon clause 8 & Annex V of Council Directive 92/42/EEC. Member states repealing Council Directive 92/42/EEC (with the exception of Articles 7(2) and 8 of and Annexes III to V), shall continue the notification of Notified Bodies under Directive 92/42/EEC. For this, Notified Bodies shall comply with the minimum criteria as given in Annex V of 92/42/EEC.

44. What is the authorization of a Notified Body in respect to Regulation 813/2013?

A Notified Body notified under Directive 92/42/EEC is authorized to perform: The conformity procedure in accordance with module B as described in Annex III of Directive 92/42/EEC. Where the type meets the efficiency requirements of Regulation 813/2013 the Notified Body issues an EC type-examination certificate using Regulation 813/2013 as the reference (instead of 92/42/EEC).

The conformity procedure in accordance with module C, D or E as described in Annex IV.

45. Heat pump space heaters and heat pump combination heaters are products that are covered by several pieces of Union harmonisation legislation requiring an EU Declaration of Conformity, not only EU No 813/2013. This is true since heat pumps contain fans (EU No 327/2011) and circulation pumps (641/2009). When the heat pump supplier establishes a declaration of conformity for the heat pump, should this reflect the fact that the heat pump has an integrated circulation pump and/or fan?

Based on the documents "Frequently asked questions to Commission regulation (EU) No 327/2011 of 30 March 2011" and "Discussion Paper Ecodesign for energy related products integrated into other energy related products", the following conclusion can be drawn: The supplier of the heat pump, placing the heat pump on the market, is responsible for establishing a single declaration of conformity for the heat pump and its integrated products. The declaration of conformity should include all the required information for both the heat pump and all the integrated products. The single declaration of conformity can be made up of a dossier containing all relevant individual declarations of conformity.

46. An air-to-water heat pump consists of an outdoor unit and an indoor unit. The outdoor unit contains the heat generator and should be labelled as a heat pump. The indoor unit does not need a separate energy label if sold in combination with the outdoor unit, only if it is sold separately. It could then be labelled as a water heater for example. To be defined as a combination heat pump, able to provide hot tap water, the outdoor unit has to be sold together with an indoor unit, labelled as a combination heat pump. There

seems to be two options on how to establish an EU Declaration of Conformity for an air-to-water combination heat pump:

a. ***The supplier establishes a single EU Declaration of Conformity, covering both the outdoor and indoor unit, with reference to the Commission regulation (EU) No 813/2013 and the standards used for measuring space heating, water heating and noise***

b. ***The supplier establishes two different EU Declaration of Conformities, one covering the outdoor unit with references to the standards used for measuring space heating and noise, and one covering the indoor unit with references to the standards used for measuring water heating and noise.***

Which of the alternatives above is the preferred? Or are the suppliers able to choose either one of the two alternatives above?

The first option is preferable, in particular as the combination heat pump is sold as a single product.

Other questions

47. Which volume is the basis for validating the thermal losses of instantaneous water heaters (defined according to EN26) and fresh water stations: the domestic hot water volume, the buffer volume, or total?

The volume to validate the thermal losses of instantaneous water heaters is the total of domestic hot water volume and buffer volume.

48. How to define a product made by a solar hot water storage tank specifically designed and connected with a solar collector, an electrical resistance and a bracket, put on the market as one single unit?

If the electrical resistance is part of the solar hot water storage tank and operates as a backup immersion heater, then the product is a solar-only system.

If the electrical resistance is a heat generator other than a backup immersion heater, this product must be considered as a solar water heater.

49. How to define a product made by a solar hot water storage tank with a pump and a controller placed on the market as one single unit? How shall it be labelled?

It is a solar hot water storage tank, with a pump and a controller as defined by Regulation 812/2013 Annex I, point 39. It cannot be considered as solar only system because solar collectors are missing. In consequence, the product should be labelled as a hot water storage tank.

50. For heat pump water heaters which use ventilation exhaust air or indoor air or brine or water as the heat source, how to fill in the data for the colder and warmer conditions (these conditions do not apply to these kinds of products)?

In the case of heat pump water heaters using indoor air, exhaust air, brine or water as a heat source, there is no possible differentiation according to climate conditions. However, to determine the efficiency, different loads might apply, resulting in different outlet temperatures. As such, the efficiency for each

climate could be different and in this case, data for use of climate zones is needed. In cases where there is no differentiation between climates, all 3 fields can be filled with the same values.

51. What is the maximum tapping profile to be used to test water heaters < 400kW having a rated capacity exceeding tapping profile 4XL?

The water heater is in the scope of Regulation 814/2013 and in consequence needs to meet the minimum requirements set. The water heater is to be tested with the highest declared tapping profile (e.g. 4XL).

52. A hot water storage tank isn't included in the definitions of package in article 2 of Regulations 811/201 and 2015/1187 but is included in the description of packages in Annex III. Do a space heater, combination heater or a solid fuel boiler, a hot water storage tank and a solar device and / or temperature controls make a package too?

Yes, the definitions of packages indicate that they must include a space heater, a combination heater or a solid fuel boiler combined with solar device and / or temperature controls. A hot water storage tank does not prevent a package meeting the above definition to be considered as such.

53. The product fiches described in the Regulations are slightly different. How could we have a harmonisation to make the document management easier?

The format of the fiches provided in the Regulations is indicative. The key requirement is that the information requested is made available by the supplier and that the information is in the same order as the fiches of the Regulations. Therefore, the supplier can always construct a single fiche covering all the necessary information. Other information, considered relevant by the supplier, might also be provided, keeping in mind that the order of the information is as per the relevant Regulations.

54. How can the manufacturer of "boiler space or combination heaters" put on the market without burner verify and declare the compliance of the boiler to the ecodesign and labelling requirements?

Boiler space or combination heaters without burners ('heater housing to be equipped with a heat generator') and burners ('heat generators') are both within the scope of the ecodesign regulation according to definition of 'heat generator' in Article 2(5) of Regulation 813/2013 which indicates that "a heat generator designed for a heater and a heater housing to be equipped with such a heat generator shall be also considered a heater". As regard testing, point 2(f) of Annex III requires that "Any heat generator designed for a heater, and any heater housing to be equipped with such a heat generator, shall be tested with an appropriate heater housing and heat generator, respectively."

In addition, according to Annex II point 5(a) penultimate indent of the Ecodesign regulation, information requirements apply: "for heat generators designed for heaters, and heater housings to be equipped with such heat generators, their characteristics, the requirements for assembly, to ensure compliance with the ecodesign requirements for heaters and, where appropriate, the list of combinations recommended by the manufacturer".

The manufacturers of boiler space or combination heaters to be sold separately from burners 'heater housings' will verify and declare the compliance of the

boiler to the ecodesign requirements by means of a reference burner of their choice and declare the burner type used for test in the instruction manuals for installers and end-users, and free access websites of manufacturers, their authorised representatives and importers. An appropriate burner can be identified either:

- Based on the matching list provided by the burner 'heat generator' and/or boiler space or combination heater 'heater housing' manufacturer or,
- By using the technical instructions provided by the burner 'heat generator' and boiler space or combination heater 'heat housing' manufacturers.

The practical matching is to be based on the procedure established standards EN 267, EN 676, EN 303 and EN 304.

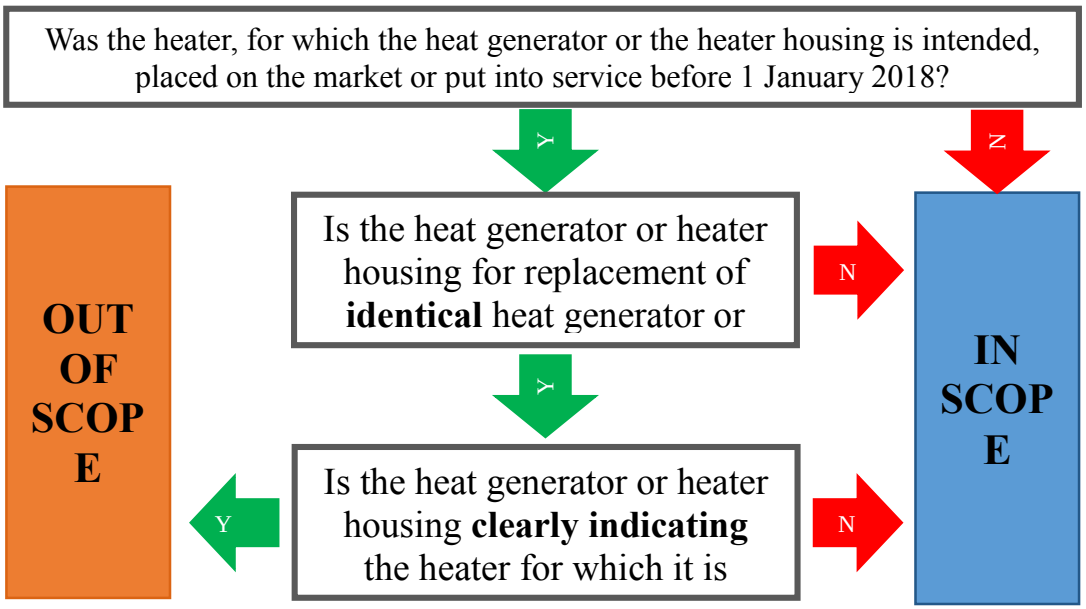
Boiler space or combination heaters without burners and burners are both out of the scope of the energy labelling regulation since the definition of 'heat generator' in Article 2(5) of Regulation 811/2013 does not include the provision quoted above from Article 2(5) of Regulation 813/2013.

In addition, according to Article 1 point 2(g) of Regulation 813/2013, until the 1 January 2018 heat generators designed for heaters and heater housings to be equipped with such heat generators placed on the market to replace identical heat generators and identical heater housings are excluded from the scope of the Ecodesign Regulation. The replacement product or its packaging shall clearly indicate the heater for which it is intended.

55. Should a burner ('heat generator designed for heaters') and a heater housing to be equipped with such heat generator used for replacement comply with ecodesign requirements after 26 September 2018?

A burner (heat generator), or a heater housing to be equipped with such heat generator, used for replacement is out of the scope of the regulation from the moment it is designed for replacing an identical heat generator used in a heater or heater housing, or an identical heater housing, placed on the market before 1 January 2018.

Decision tree for defining the application of Regulation 813/2013, article 1 point 2(g):



The exemption of Regulation 813/2013, article 1 point 2(g) applies when either the heater housing or the heat generator is being replaced, but:

- It does not apply to like for like replacements of entire heaters (as sold product) units. In this case, the requirements for placing a new heater on the market shall apply;
- It does not apply when an entire heater is replaced with another new heater which has been assembled and placed on the market using a replacement heater housing and a replacement heat generator at the same time. In this case, the requirements for placing a new heater on the market shall apply.

For this purpose, the heater housing should be understood as the sum of the heater components designed to have a heat generator fitted (i.e. the heat exchanger and the casing).

In addition, this exemption should not apply if a "refurbishment kit" to renovate existing heaters is provided without any clear indication of the heater for which it is intended.

56. What is the definition of preferential heater?

A preferential heater is a heater that generates heat in cases where the heat demand is lower than or equal to its rated output.

In general, a preferential heater is a heater which is to be switched on first (usually because it gives the best efficiency). Only if the heat demand exceeds the output of the preferential heater, the supplementary heater is switched on.

57. In the load profiles S-XXL for water heaters, there is a parameter Tp, 'peak temperature', that should be achieved during tapping. The definition of Tp is as follows: "'peak temperature' (Tp) means the minimum water temperature, expressed in degrees Celsius, to be achieved during water draw-off, as specified in Annex III, Table 1".For how long time should Tp be achieved during tapping? Should it be during the whole tapping, or is it enough with a few seconds?

Peak temperature (T_p) means the minimum water temperature, expressed in degrees Celsius, to be achieved during water draw-off, as specified in Annex III, table 1. The peak temperature T_p shall be calculated as a mean value over the water draw-offs with a minimum value as specified in the tapping cycles.

In cases where the peak temperature is not reached, additional the product cannot be declared under this tapping profile and needs to be tested under another tapping profile.

58. How should water heaters that are installed together with a mixing valve be tested?

As indicated in the transitional methods, water heaters have to be tested in the "out of the box" mode. This means that if the water heater is delivered with the mixing valve or it is indicated that it must be used, the water heater should be tested with the mixing valve.

59. Which heat output shall be given on the energy label for a heat pump with variable heat capacity?

The heat output on the energy label is the design load for heating $P_{designh}$ for which the η_s value was calculated for.

60. There are in the market hot water storage tanks that are sold uninsulated, to be insulated by the customer or the installer. Are the tanks included in the scope of 812/2013 and 814/2013? Will the installer or the customer who does the insulation be considered as a supplier, obliged to show that the product meets the ecodesign requirements? How to solve this in practice? Can the supplier of the uninsulated tank provide information together with the tank, about what minimum amount and type of insulation that is necessary for the tank to be compliant with the ecodesign requirements?

Hot water storage tanks need to comply with ecodesign requirements and have an energy label when placed on the market or put into service. If a tank is placed on the market uninsulated, the manufacturer has to provide the information on how to insulate the tank so that it complies with the requirements when putting it into service. This is specified in Annex II, point 2.2(c) of Regulation 814/2013 in the information requirement of "any specific precautions that shall be taken when the hot water storage tank is assembled, installed or maintained" (also included in Regulation 812/2013 Annex V, point 2(g)).

61. In the definition text of the different temperature controls - it is anticipated that the temperature control is controlling one single space heater. In case of packages of more space heaters - or e.g. a package containing a cogeneration space heater and a storage tank for accumulating heat for space heating - will it still be possible to add a temperature control to the package, if the temperature control is controlling the whole package, and the purpose of the control is the same as if there was only one single heater? And supplementary hereto, can a 'Class II' temperature control (Weather compensator control, for use with modulating heaters) be used with a package of more space heaters - or e.g. a package containing a cogeneration space heater and a storage tank for accumulating heat for space heating - if the individual space heaters are not modulating, but the whole package can operate as and with the same purpose as one single modulating heater?

Yes, nothing prevents (nor should it be prevented) to add such temperature control to the package.

62. How to deal with the hot water storage tank and measure its efficiency in the Ecodesign Regulation (EU) 2015/1189?

Tanks are not in scope of 2015/1189. Hot water storage tanks sold a under different model identifier and combined with solid fuel boilers are regulated under Regulations 814/2013 and 812/2013. They should meet the minimum requirements and be labelled accordingly.

63. How to deal with an electric heat generator placed in the same vessel as a pellet boiler in Ecodesign Regulation (EU) 2015/1189 and Energy labelling regulation (EU) 2015/1187?

If the functionality of the electric heat generator is only to take over heating when the pellet boiler is out of order, and during maintenance periods, it is a back-up heater.

If the functionality of the electric heat generator is in addition to deliver extra heat if the heat demand is greater than the heat output of the primary solid fuel boiler, it is a supplementary heater.

In this case, the product is a "hybrid" put on the market consisting of two or more technologies integrated in one casing would be considered a "product".

The declared energy efficiency values should be the combined energy efficiency of the pellet boiler and the electrical boiler.

The product should only have one energy label integrating both the efficiency of the pellet and electrical boiler.

64. Which parameters in table 1 and 7 of Regulations 813/2013 and 811/2013 are not relevant for electrical boilers? How should they be dealt with?

The following parameters are not relevant for electrical boilers:

- P_1: Useful heat output at 30 % of rated heat output and low-temperature regime
- η_1: Useful efficiency at 30 % of rated heat output and low-temperature regime
- elmax: Auxiliary electricity [power] consumption at full load
- elmin: Auxiliary electricity [power] consumption at part load
- P_{ign}: Ignition burner power consumption
- NOx: Emissions of nitrogen oxides
- Q_{fuel}: Daily fuel consumption [for water heating]
- AFC: Annual fuel consumption [for water heating]

A dash can be filled in in the Tables.

65. To determine the standing loss S of storage tanks, should the market surveillance authority always choose the method chosen by the supplier, as long as it is published in the Commission communication?

The manufacturer has the choice to use any of the standards for testing, however, it is recommended to use the test method based for the specific tank considered based on the scope of the standard.

In principle market surveillance authorities should follow the manufacturer's choice.

66. Are the suppliers of products covered by Regulation (EU) No 811/2013 and (EU) No 812/2013 that are considered "silent" obliged to declare a sound power level for their products, by measuring sound power according to a standard or by estimating the sound with other "reliable, accurate and reproducible methods"? Are they obliged to verify the declared value with test reports or other documentation if asked to send technical documentation to a market surveillance authority?

Yes and yes.

67. What type of information can a market surveillance authority demand from a supplier who claims that declared parameters are decided using a calculation method? Is this the case for all calculations, including these obtained from other models?

Market surveillance authorities can request the details of such calculations and/or extrapolations, and of any tests undertaken to verify the accuracy of the calculations, including details of the mathematical model for calculating the performance of such combinations and details of the measurements taken to verify this model, including how these are obtained from other models.

68. Does article 4, point 3 a, in Energy Labelling Regulation (EU) No 811/2013 regard offers of packages in situations when the end-consumer can see the displayed product?

Yes, (a) applies only to situations when the end-consumer can see the displayed product; (b) applies only to situations when the end-consumer cannot see the displayed product.

69. Do dealers have to include the value of the parameters I to VI in Figures 1-5 in Regulation (EU) No 811/2013 and I to IV in Figures 1-2 in regulation (EU) 2015/1187 in cases where the end-user can see the products displayed?

Yes.