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LabelPack A+

"Common understanding of the heating energy labelling concept,

FAQs: Frequently Asked Questions"

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FAQs – Frequently Asked Questions

Providing standardized answers to the market actors to assure that everyone communicates in a harmonized way.

1 GENERAL CONTEXT

1.1 What is the energy labelling context?

The European Commission launched in 1992 the first Council Directive 92/75/EEC of 22th September 1992 on the indication by labelling and standard product information of the consumption of energy and other resources by household appliances. Since then, this framework suffered several changes and a new Directive was published in 2010, the Energy Labelling Directive, 2010/30/EU, on the indication by labelling and standard product information of the consumption of energy and other resources by energy-related products. The goal is to drive improvements in the efficiency and performance of energy consuming products and ensure that end users are aware of the level of energy efficiency inherent to their appliances. As such, the Directive will help European governments reduce carbon emissions and improve the overall efficiency of the housing stock, while helping homeowners to reduce their energy bills.

1.2 What is the energy labelling?

Energy labelling is the categorization of a product according to its energy consumption during the operation stage. The energy labelling is recognized by the application of a label, with which we are already familiar for its application in refrigerators, washing machines and other domestic appliances at the point of sale. The label introduces uniformed information regarding products of the same type, providing potential purchasers with supplementary standardised information on those products' costs in terms of energy consumption.

1.3 How to read the energy label?

The energy label provides information on the equipment's supplier and the model. Regarding energy the label presents an energy class chart, from G to A, where A identifies the most energy efficient equipment, meaning with the lowest energy consumption during use, and G represents the most inefficient product, with the highest energy consumption during use.

The general chart presents 8 classes. Nevertheless, there are some product classes up to A+++, with a total number of 10 classes, depending on the sectors dynamic in enrolling in the deployment of more efficient products. This evolution in energy efficiency is gradually recognized and prompt by the European Commission.

Regarding space and combi heating equipment until the 25th of September 2017 the energy label presents 9 classes, from G to A++. From the 26th of September 2017 onwards, the label will present 7 classes from D to A+++.

For water heating equipment until the 25th of September 2017 the energy label presents 8 classes, from G to A, while after this date, the label will suffer a revision with classes from F to A+, being F the lowest class.

Note that information on energy use during manufacturing and regarding the product disposal at the end of life is not presented.

1.4 How much more efficient an A++ or an A+ product or package is than an A one? (in other words: A is already very good, why should I choose a A+ or A++?)

Recent research in the field of household refrigerators identified a common perception that an A+++-label is only marginally better than an A-label. However, this is not the case, as an A-label refrigerator can consume up to over 50% to 60% three times as much electricity as an A+++-class.

This order of magnitude of difference between a common and the highest label class is also the case for solar thermal products

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2 THE HEATING ENERGY LABEL

2.1 When did the heating energy labelling regulation enter in force?

The eco-design and energy labelling regulations for space heaters and water heaters were published in 2013, in line with the European Commission Energy Labelling Directive, 2010/30/EU.

2.2 Which heating equipment's are labelled?

The energy labelling regulations, delegated regulations n. º 811/2013 and n. º 812/2013, introduce Europe-wide energy labelling requirements respectively for space and water heaters. The products considered are boilers, combination boilers, heat pumps, cogeneration heaters, gas and electric water heaters, solar thermal heaters (thermosiphon with integrated electrical resistance) and other heating products up to 70kW and hot water storage tanks below 500 litres.

Excluded from the heating energy labelling are plants for cogeneration, biogas and biomass plants and plants based on solid fuels, as referred to in detail in the Delegated Regulations n. º 811/2013 and n. º 813/2013.

2.3 What change will come concerning boiler classes?

The classification of boilers within the range of A to G is used from September 26th, 2015 until September 26th, 2017. From then on, only classes A+ to F are allowed on the market.

2.4 Is there any labelling provided for heating systems based on pellets or generally biomass?

Not yet. A new delegated regulation, 2015/1187 has already been published but the energy labelling of solid fuel boilers and packages of a solid fuel boiler, supplementary heaters, temperature controls and solar devices will only enter in force in April 2017.

2.5 What is the heating package label?

Package is a system that is offered to the end-user combining one or more heaters (water, space or combi) with one or more temperature controls (in the case of space and combi packages) and one or more solar devices. The packages can be standard, a system pre-assembled by the supplier constituted by a set of products from the same brand, or it can be a custom-made package, a package of products locally assembled by the dealer or installer, who combines a set of products (not necessarily with the same brand) commercialized by the dealer and assembled at the moment of sale to meet the demand of one precise client.

The package label is issued by the manufacturer, in the case of pre-assembled packages, or by the dealer/integrator installer in the case of custom-made packages.

For package systems an additional label should be issued, identifying the equipment constituting the final solution. It's important to underline that this label does not replace the individual labels. For example, when installing a water heating system with a conventional water heater and a forced circulation solar thermal system, with a storage tank decoupled from the solar thermal collector, three labels must be issued: a label for the conventional water heating equipment, a label for the hot water storage tank and a label for the package of water heater and solar device.

2.6 How is the heating energy labelling processed?

The label is a responsibility of the market. Regarding individual equipment and pre-assembled packages, meaning the combination of a conventional heater with a renewable energy equipment, the manufacturer has the responsibility of issuing and making available the energy label, as well as all the relevant documentation, to the dealer. As for custom-made packages, the professional, dealer or installer integrator, responsible for assembling the package has the responsibility of issuing and providing the energy label and additional documentation to the final customer.

2.7 Which data influences the energy class of the package label of combined systems?

Regarding the space heating function, the rated power and efficiency of the boiler (or heat pump) and the size and efficiency of the solar thermal system. Regarding the water heating function, the efficiency of the heater, size and technical characteristics of the solar thermal collectors, volume and losses of the storage tank and the control of the backup heater.

2.8 Are district heating plants affected by the energy labelling?

No.

2.9 What is the range of energy efficiency classes associated to solar thermal labels?

Package labels present an energy efficiency scale that goes from G to A+++. Solar thermal heaters (thermosiphon with an integrated electric resistance) have a product label, and the energy efficiency classes ranges from G to A (the label is revised on the 26th of September 2017, and a new scale from F to A+ will enter in force).

2.10 What is the energy label's added value for the end-user?

Energy labels help consumers choose energy efficient products and adequate their needs to the best market offer. Choosing energy efficient products directly impacts their energy bill, reducing the billing related to the use of their equipment. When choosing a new energy user equipment, the final consumer should attend to his profile of consumption regarding that specific equipment and calculate how much the option for a class A equipment will represent in terms of billing savings.

According to the European Commission, the global result of applying energy labels and standards to house appliances (general housing appliances and not only heating equipment) will represent an energy saving of around 166 Mtoe by 2020, roughly equivalent to the annual primary energy consumption of Italy. For consumers, this can mean savings of €465 per year on household energy bills. Moreover, energy efficiency measures will create €55 billion in extra revenue for European companies[1].

2.11 Can suppliers and dealers support installers concerning the calculation of package labels?

Yes, of course

2.12 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 make a package label for the combination installed? The regulation does not mention installers and the role of installers.

[1] Source: http://ec.europa.eu/energy/en/topics/energy-efficiency/energy-efficient-products

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.

2.13 What is the energy label's added value for the heating industry?

The introduction of the energy labelling in the heating appliances market is an added value for the industry that can publicly disclaim the efficiency of their products, putting to light the efforts endorsed in the last decade regarding the production and commercialization of affordable and more sustainable heating solutions.

This tool provides the market with new communication mechanisms to present the most efficient heating solutions to the final consumer, illustrating, via the energy label, the variety of solutions and the added value of a new water heater in comparison to an older one.

The package label will additionally show the advantages of renewable energy technologies, namely solar thermal, and controllers, enhancing how renewable technology and controls can bring up the system's rating and efficiency.

2.14 Is the energy labelling a risk or an opportunity for the solar thermal industry?

The energy labelling of heating products and systems offers an opportunity for the solar thermal industry to present the solar energy output in a consumer-friendly way. Furthermore, the label and product fiches information report to primary energy, for the sake of comparability with the conventional solutions.

2.15 What is the energy label's added value for the solar industry?

The energy labelling regulation offers important new opportunities to communicate the benefits of a solar thermal system to the customer. The package label will show the advantages of renewable energy technologies, namely solar thermal systems, and controllers, enhancing how renewable technology and controls can bring up the system's rating and efficiency. This will attract new consumers and, improve the business for all solar suppliers and dealers.

2.16 Can I estimate the savings of a new system based on the energy label?

Space heating equipment presents, in the energy label, the rated heat output in kW. Considering the number of hours, the equipment is to be used the end-consumer could be expected to estimate the foreseen energy consumption per year. Nevertheless, space heating equipment's normally work at part-load, what implies that the assumption of the pre-mentioned calculus would lead to an overestimation in the energy invoice. In this sense, it is difficult to estimate the savings between heating systems solely with the information from the energy label.

Water heaters energy label present the expected annual electricity consumption per year in kWh and/or the annual fuel consumption in GJ, according to the load profile for witch the equipment was tested.

Knowing the contracted electricity tariff the consumer can calculate how much he can save acquiring a more energy efficient equipment.

2.17 Are photovoltaic systems affected by the Energy Labelling or Eco Design guidelines?

No.

2.18 Is the energy efficiency class of the heating energy labels to be rescaled?

Yes, the first rescaling will enter in force on the 26th of September 2017. Regarding space heaters, the new scale will range from D to A+++, combination heaters, will range from D to A+++ (space) and F to A+ (water). Regarding water heaters the new scale will range from F to A+ and hot water storage tanks also from F to A+. The package labelling scale, both for space heating and water heating systems does not suffer any changes, from G to A+y++.

2.19 I need more information on the heating energy label. Who can provide?

At the European level, the Label Pack A+ project provides all the information on the context, the process and the regulations requirements.

At the national level the National Energy Agencies and similar bodies should provide information on the adoption of legislation into the national context and the available mechanisms to comply with it.

Also, the market surveillance authorities and the consumer protection associations provide information on the market obligations and consumers rights and the channels to report on non-compliances.

At the local levels the local authorities can also provide assistance, mainly forwarding to the competent entities.

The manufactures, and the respective associations, have also a deep understanding of the legislation and can provide helpful information regarding market access.

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3 LABELLING AND PRODUCT FICHES

LABELS

3.1 Where should the heating energy label be available?

The supplier has to supply a printed label with each product placed on the market (along with the product fiche). The supplier has to ensure also that any advertisement on the heater, referring its energy characteristics or disclosing its price, also references the energy class.

The dealer has to make sure that the energy label is available to the consumer, normally placed on the product in display at the store. All the advertisement and technical promotional material also has to reference the heater energy class.

These guidelines are true for physical and online sales and also apply to renting.

3.2 Should the energy label be displayed in the heater itself or is it enough to mention the energy efficiency class in the technical documents?

Whenever it is compulsory for the heater to present an energy label (in general heaters below 70kW), this should be evidenced and the label displayed with the heater. The dealer should also make available to the consumer the product fiche, where all the relevant technical characteristics of the heater are stated, including the energy efficiency class. As for heating packages, the label should be displayed when it's a standard package, available to the consumer at the store as a close system, or, when dealing with customized packages, the energy label should be calculated by the dealer and made available to the consumer during the procurement process.

3.3 Who is responsible for issuing and making available the product label?

The supplier (manufacturer/legal importer) is responsible for issuing and making available to the dealer the energy efficiency label of individual heaters and standard heating packages.

3.4 Which components of the heating package are labelled?

Individual heaters (including solar thermal thermosiphons with an integrated electric heater), as well as hot water storage tanks are to have an individual energy efficiency label, as well as a product fiche. Solar thermal collectors and control units are not labelled but should present the corresponding product fiche, where the relevant data to issue the package label is presented.

3.5 Who is responsible for incorrect labelling?

Incorrect labelling can cause claims out of liability of defects due to service contracts and/or out of compensation for the end consumer. The consumer himself is held responsible for verification and proofing of these claims.

Due to the law against unfair competition incorrect labelling can be reprimanded. Competitors and controlling organisations (e.g. market surveillance) are asked to observe the market concerning offences against fair competition.

3.6 Where are the label design requirements stated?

The labels design is defined in the Delegated Regulations. Manufacturers can freely access the European Commission's official label generator for the correct labelling of individual products[2].

For packages, namely customized packages, the Label Pack A+ consortium developed an online tool, freely available[3].

3.7 Must the energy label be available in advertising materials as prize lists, product fiches, websites, etc.?

The energy efficiency class of the heater should be indicated in any advertising and technical promotional material concerning the heater. At the store, and for online sales, the label and product fiche should be available to the consumer.

3.8 Who is responsible for issuing the package label?

Package is a system that is offered to the end-user combining one or more heaters (water, space or combi) with one or more temperature controls (in the case of space and combi packages) and one or more solar devices. The packages can be standard, a system pre-assembled by the supplier constituted by a set of products from the same brand, or it can be a custom-made package, a package of products locally assembled by the dealer or installer, who combines a set of products (not necessarily with the same brand) commercialized by the dealer and assembled at the moment of sale to meet the demand of one precise client.

The package label is issued by the manufacturer, in the case of pre-assembled packages, or by the dealer/integrator installer in the case of custom-made packages.

3.9 Which heating systems are labelled with the package label? Does the package label apply exclusively to systems with solar thermal systems?

The package label exists whenever a heater is combined with a temperature control device, with a hot water storage tank, with a supplementary heater (in the case of space heating), or with a solar thermal system (in the case of space and water heating). Some examples of heating packages can include boilers and solar thermal collectors, boilers and heat pumps, heat pumps and solar thermal collectors and cogenerations of heat and power.

3.10 Who is responsible for making the package label available to the consumer?

The professional responsible for selling the package to the end consumer is held responsible for supplying the package label, regardless of whether it is the manufacturer or the retailer who sells the system. (For further details see page 5, article 3(5) a – Lot 1 (811/201) or page 4, article 3 (4)a – Lot 2 (812/2013)

3.11 How should the solar thermal system information be made available for the consideration in packages?

The solar thermal collectors do not present an energy efficiency label but should present the product fiche with the relevant data to calculate the package label.

3.12 Is the package label the only label to present when commercializing a heating package?

[2] http://eepf-energylabelgenerator.eu/en/eepf-labels

[3] http://www.label-pack-a-plus.eu/home/calculate-the-label/

No, the package label does not replace the individual labels. For example, when installing a water heating system with a conventional water heater and a forced circulation solar thermal system, with a storage tank decoupled from the solar thermal collector, three labels must be issued: a label for the conventional water heater, a label for the hot water storage tank and a label for the package of water heater and solar device. The product respective product fiches should also be made available, as well as the package fiche.

3.13 How is the information concerning the data of the components necessary for calculating the package label provided to the installer?

The supplier is responsible for issuing the product fiche for all the components that can be assembled within the package.

3.14 Which tools for calculating the package label are available?

For heating packages, a non-official tool is provided on the project website of LabelPackA+[4] Other options include using the official artworks or the official product label generator[5], provided all the information required is available/known.

3.15 Should the package label be printed or is handwriting possible?

The label should respond to the design established in the Delegated Regulations, which means that handwriting is not an option.

3.16 When substituting a component or upgrading an existing heating system is the package label required?

No. Only fully new packages require a package label. Nevertheless, the individual products subjected to the energy label (heaters and hot water storage tanks) should present the labels in any case.

3.17 Are freshwater stations labelled too? Is it considered a single component within the package labelling?

No, freshwater stations are not considered in the heating labelling regulations.

3.18 Can energy labelling calculations be used as examples in advertising, underlining the influence of the various criteria, e.g. heater profile, components used, in the package class?

Yes, that can be used.

[4] http://www.label-pack-a-plus.eu/home/calculate-the-label/

[5] http://eepf-energylabelgenerator.eu/en/eepf-labels

PRODUCT FICHES

3.19 Where is the information concerning the package fiche for calculation of the package label provided?

The content of the package fiches, which details the calculation procedure for the package energy efficiency class, is detailed in Annex IV, section 5 and 6 of the Commission Delegated Regulation (EU) N.º 811/2013 for space and combination packages and in Annex IV, section 4 of the Commission Delegated Regulation (EU) N.º 812/2013 for water packages.

3.20 Are there free product databases (solar thermal collectors, boilers, tanks, etc.) displaying the required information for calculating the package label?

National wide there are several manufacturing companies that provide the technical characteristics of their products in their websites, available for the dealer to consult and use in the package label calculation. Also, some manufacturers have opted to deploy brand specific labelling tools where the dealer can access the product information. Despite the case, the dealer should always refer to the manufacturer for the product fiche.

Regarding solar thermal collectors the Solar Keymark database is freely available for consultation[6].

If using the free online LabelPack A+ calculation tool, the dealer should insert the information manually.

3.21 Are suppliers compelled to provide the dealers all the technical data of a product?

Yes, the supplier is responsible for the product's label (when applicable) and product fiche, according to the parameters listed in the Commission's Delegated Regulations.

3.22 Who is responsible for providing the product and package fiches in a heating package compiled by an installer?

The supplier is responsible for providing the products label (whenever applicable) and product fiches. Whenever we are dealing with a standard package, the supplier also assures the package label and package fiche. When the installer assembles a custom-made package, he is responsible for issuing the package energy efficiency label and the corresponding package fiche.

3.23 When should the installer provide the product and package fiches? Is it possible to provide them only upon the authorities' request?

The installer should provide the product and package fiches whenever offering a commercial proposal to the end-consumer. Upon authorities request he should make available the specific technical documentation, as specified in the Commission's Delegated Regulations (EU) No. 811/2013 and 812/2013, in Annex V.

[6] Available in http://www.solarkeymark.org , under "List of Certified Products"

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4 DEVICES AND COMPONENTS

SOLAR THERMAL COLLECTORS

4.1 Which information, concerning the solar thermal collectors, should the manufacturer provide to enable the calculation of the package labelling? Is the collector efficiency enough?

All the data needed concerning solar thermal devices is listed in the Commission's Delegated Regulations (EU) N.º 811/2013 and N.º 812/2013, in the annex concerning the detail of the product fiche.

Commission Delegated Regulation (EU) N.º 811/2013 – Space heating

(a) supplier's name or trade mark;

(b) supplier's model identifier;

(c) the collector aperture area in m^2 to two decimal places;

(d) the collector efficiency in %, rounded to the nearest integer;

(e) the energy efficiency class of the solar hot water storage tank;

(f) the standing loss of the solar hot water storage tank in W, rounded to the nearest integer;

(g) the storage volume of the solar hot water storage tank in litres and m^3;

(h) the annual non-solar heat contribution Qnonsol in kWh in terms of primary energy for electricity and/or in kWh in terms of GCV for fuels, for the load profiles M, L, XL and XXL under average climate conditions, rounded to the nearest integer;

(i) the pump power consumption in W, rounded to the nearest integer;

(j) the standby power consumption in W, to two decimal places;

(k) the annual auxiliary electricity consumption Q aux in kWh in terms of final energy, rounded to the nearest integer

Commission Delegated Regulation (EU) N.º 812/2013 – Water heating

(a) supplier's name or trade mark;

(b) supplier's model identifier;

(c) the collector aperture area in m^2, to two decimal places;

(d) the zero-loss efficiency, to three decimal places;

(e) the first-order coefficient in W/(m^2 K), to two decimal places;

(f) the second-order coefficient in W/(m^2 K^2), to three decimal places;

(g) the incidence angle modifier, to two decimal places;

(h) the storage volume in litres, rounded to the nearest integer;

(i) the annual non-solar heat contribution Qnonsol in kWh in terms of primary energy for electricity and/or in kWh in terms of GCV for fuels, for the load profiles M, L, XL and XXL under average climate conditions, rounded to the nearest integer;

(j) the pump power consumption in W, rounded to the nearest integer;

(k) the standby power consumption in W, to two decimal places;

(l) the annual auxiliary electricity consumption Qaux in kWh in terms of final energy, rounded to the nearest integer.

4.2 Which data concerning temperature controls has to be included in the product fiche?

The Commission Delegated Regulation (EU) N.º 811/2013, Annex IV, Part 3 "product sheet temperature controls" details that the following data has to be provided in the following order and shall be included in the product brochure or other literature provided with the product:

(a) supplier's name or trade mark;

(b) supplier's model identifier;

(c) the class of the temperature control;

(d) the contribution of the temperature control to seasonal space heating energy efficiency in %, rounded to one decimal place.

It is acknowledged in the regulation that one fiche may cover a number of temperature control models supplied by the same supplier.

4.3 Are there minimum performance standards concerning the energy efficiency output of solar thermal collectors for the energy labelling?

No.

4.4 Are solar thermal collectors' product fiches compulsory for all the solar collectors in the market, or only for those integrating a heating package?

Product fiches are compulsory for all solar thermal collectors on the market.

4.5 The overall solar thermal collector surface is considered in the calculation of the water heating system (SOLCAL) as well as in the calculation of the space heating system. Is that correct?

Yes. For the water heating system, the overall collector surface area is an input for the Qnonsol calculation (a calculation developed using the SOLCAL methodology), while in space heating system the area is a direct input in the label calculation.

4.6 Does the EN 12975-2 norm for certified collectors require separate documentation of data concerning the solar collector performance in different climate zones?

No. The influence of different climate zones can be calculated in the package label tool. For warmer regions add 40% and for colder regions subtract 20%.

4.7 Regarding the solar thermal collector aperture area, how many decimal places should be presented?

The solar collector aperture area should be presented in m^2, rounded to two decimal places.

4.8 Are PVT-collectors considered within the energy labelling?

Yes, but only the ratio of the solar heating output is included in the calculation.

4.9 Are there any restrictions concerning the source of the solar thermal collector certification within the guidelines of the energy labelling?

No, there are no restrictions concerning the certification process, as long as all the required data is included.

BOILERS

4.10 Is the labelling provided for tap water boilers and for supplementary boilers as well?

Yes, all heaters up to 70kW are considered in the energy labelling (for exemptions report to the Commission Delegated Regulations (EU) N. º 811/2013 and N. º 812/2013)

4.11 Are boilers with a storage volume of more than 500 litres considered in the package label calculation?

Yes, all boilers up to 70kW are considered within the energy labelling regulation. Energy relevant data must be part of the product fiche of the boiler.

4.12 Does a solar thermal heating system with two or more e.g., 1.500 litres boilers connected in series require a package label?

Yes, if the boilers are up to 70kW.

4.13 Does a boiler with a volume of more than 2.000 litres require a package label?

All the boilers up to 70kW have to present an energy label. If sold in an integrated package with other components the package label has to be presented also. Regarding hot water storage tanks, the energy label is compulsory for tanks up to 500 litres. Nevertheless, if integrated in a package all the components have to be considered in the calculation of the package energy efficiency.

4.14 Calculating the package label of a combination system: has the hot water production and the space heating energy production of a multi boiler to be presented separately?

For combination systems the energy efficiency class is calculated in two distinct steps, one for the space heating and another for the water heating. The energy label presents two distinct energy classes and the package fiche is composed of two sheets, one corresponding to the space and another to the water heating. The solar thermal collectors' area is fully considered in both calculations, as well as the overall storage volume of the boilers and energy losses.

4.15 How to calculate supplementary boilers with an integrated hot water storage tank or supplementary boilers with coiled tube exchanger? Which is the volume data needed for calculation?

Only the boiler volume as a whole is needed, there is no distinction.

4.16 Should a 1000-litres-multi-boiler, as a part of a heating and hot water producing package, considered into the labelling calculation? How to deal with the different volumes?

Yes, the whole volume has to be considered in the calculation.

STORAGE TANKS

4.17 Should a fireplace with an integrated water tank, as a part of a combined system, be referred to in the package energy class calculation?

No, a fireplace is not considered a supplementary heater and as so should not be considered in the package energy class calculation.

4.18 Are there any exclusions concerning standards for hot water storage tanks mentioned in the draft of the EN 12977, EN 12897, EN 15332?

There is no new procedure planned. Using the procedures of the standards EN 12977, EN 12897 and EN 15332. In Lot2, Annex IX there is a tolerance mentioned: the maximum between the measured value and the nominal value is 2%.

4.19 How to deal with storage tanks with integrated heating energy producers? Does the measurement procedure refer to the storage tank and the heating device as a whole unit? Or has the measurement of the boiler and the heating device to be made separately?

A storage tank with one or more integrated heat producers is a space heating system, water heating system or a combined heater. In any case it should receive a product label. It only requires a package label if is part of a combined system including a temperature control and/or a solar thermal system.

Further information concerning the calculation of the energy efficiency of space and water heating is offered in the memorandum of the Commission for Execution of the Directive for space heating (2014/C207/02) and for hot water production (2014/C 207/03). It is not possible to make any general decisions concerning engaged or separate calculation.

4.20 How to deal with combined systems for space and water heating which include a supplementary storage tank (with internal coiled tube for hot water production) with a volume of more than 500 litres? Should the energy efficiency class only report to the space heating function, or has the water heating function to be considered as well?

The energy efficiency class has to be calculated for the combined product, one class for each function. The whole volume is used for both calculations.

4.21 How to deal with multi storage tanks, e.g. 200 litres fresh water and 550 litres supplementary storage? Does a supplementary storage tank need a labelling?

Up to a volume of 500 litres a storage tank labelling is mandatory. For tank with a volume more than 500 litres a product sheet has to be provided for the package label calculation.

4.22 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 in consequence to meet the relevant requirements under the Regulations.

4.23 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 no need to be labelled as a hot water storage tank. The necessary information for issuing the package label shall be provided.

THERMOSIPHON-SYSTEMS

4.24 How are thermosiphon systems dealt with in the directive of energy related products (ErP)?

a) A pure solar thermal thermosiphon, with no electrical resistance integrated in the hot water storage tank, does not require an energy label. It should present an energy label for the hot water storage tank, together with the respective product fiche and a product fiche for the solar collector.
b) A thermosiphon with an integrated electrical resistance as a backup heater is considered a solar water heater and it should present an energy label and the respective product fiche.
c) A pure solar thermosiphon assembled with a conventional heater should receive a package label and the respective package fiche. (all the documentation referred to in a) should also be made available).

If a separate measuring of the collector and the boiler is not possible, the measuring of the system has to be done due to the guidelines of SOLICS, included in the transitional methods[7].

4.25 Are thermosiphon – solar driven warm water producers labelled with the product label, the package label or both?

Systems with supporting electrically driven immersion heater are labelled with the product label. To issue the package label is not possible since the data for EtaWH is usually missing. It is allowed to use the following formula: $\eta_{wh} = \eta_{wh\_calc} \cdot 0.95$

[7] Commission communication 2014/C 207/02 – transitional methods for space heaters http://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:52014XC0703(01)&from=EN

HEAT GENERATING COMPONENTS

4.26 What are the rounding rules for the performance figures of heat pumps?

The product label for heat pumps rounds the heating potential to the next whole number. Specifications for technical parameters should be given by each national authority.

4.27 Has a heating cartridge or a single glow bar to be labelled as a heat generator? Is the market release of heating cartridges or single glow bars with efficiency of 40% or less possible?

Due to the directive heat producers such as burners or cartridge heaters are considered components and as such no separate product labelling is required.

Until the 1st of January 2018 these heat producers are allowed in the market, if they are designed to substitute existing devices of the same kind. Appropriate information referring to the specific type of heating system has to be provided on the wrapping of the product or on the product itself.

4.28 How to calculate the annual energy consumption of a heat producer (except heat pumps)?

The annual energy consumption Q_{HE} in GJ of space heating for boilers in an average climate is calculated with the formula[8]

$$Q_{HE} = \frac{H_{eh} \times P_{design}}{\eta_s} \times \frac{3{,}6}{1000}$$

- H_{eh} = 2066 = equivalent for working hours per year
- P_{design} in kW described either as

a)

$$P_{design} = \frac{P_{rated} \times 800}{2066}$$

or

P_{design} = arithmetic mean of the maximum and the minimum effective energy output multiplied with 800 and divided by 2066

4.29 Is the maximum heat nominal capacity P_{rated} , the correct data to use in a modulating boiler concerning a combined system for space and water heating including solar heat for calculating the solar output?

No, only the data of P_{rated} is used. There is no reference to the modulating property of the boiler.

[8] Guidelines Accompanying Regulations (EU) No 811&812/2013 , 813&814/2013, 2015/1187&1189 (2018) : http://www.label-pack-a-plus.eu/wp-content/uploads/2018/07/Guidelinesspacewaterheaters_2018_final-official.pdf

4.30 How to calculate ηwh if there is no information concerning boiler data?

This information needs to be provided by the supplier of the product. For more detail please report to the Implementing Guidelines Page 27 (Part 6.4.1).

Also, if the information missing reports to a space heating boiler, that, due to the installation arrangement also produces hot water, the Label Pack A+ project has produced a excel file that allows you to calculate the water heating efficiency of the space heating boiler, based on the space heating characteristics[9].

CONTROLLERS

4.31 How to consider a system with more than one temperature controller? E.g. concerning tele monitoring or space sensors with operating units?

The rules are that the efficiency date of all controllers of a combined system have to be referred to as centralized in one controller.

4.32 How is the contribution of a heat sensor concerning the seasonal efficiency of the space heater defined?

According to the guidelines concerning the efficiency inputs mentioned in the transitional document 813 number 6.

From class I devices (on/off space thermostats: efficiency input 1%) up to class VIII (space heat controllers with several sensors for a modulated heating system: efficiency input 5%).

The operation area of the controller (on/off or modulated heat producer) has to be referred to and mentioned in the data sheet of the controller. For further information see the transitional document with reference to 813/2013[10]

[9] Support file: Calculating the water heating efficiency of the space heating boiler http://www.label-pack-a-plus.eu/wp-content/uploads/2015/09/Calculo-de-Eficiencia-AQS-em-caldeiras-de-aquecimento-ambiente.xlsx

[10] Commission communication 2014/C 207/02 – transitional methods for space heaters http://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:52014XC0703(01)&from=EN

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5 CHARACTERISTIC VALUES AND GUIDELINES FOR CALCULATION

5.1 Shall the heat losses of the distribution pipes be considered?

No. The characteristics of the installation are not considered in the energy labelling.

5.2 Has the focus of the tapping profile to be laid on the possible maximum output of the system or on the needs of the consumer?

The heater load profile is defined by the manufacturer according to the load profiles applied in the testing of the heater. The consumer should select a heater according to his heating needs and for this he should consult a qualified professional and follow the indicative guidance from the table below.

Heater load profile	Hot water needs associated to the profile	Application	
3XS	Seldom hand wash	Small offices	
XXS	Household washes	Small offices	
XS	Kitchen (dish wash) and household washes simultaneously	Offices	
S	Kitchen (small dish wash) household washes	Offices	
M	Kitchen, household washes and 2 showers	Residential (1-2 pax)	
L	Kitchen, household washes, showers or bath	Residential (3 – 5 pax)	
XL	Kitchen, household washes, showers and/or baths	Residential (5 – 8 pax)	
XXL	Kitchen, several household washes, showers and bath simultaneously	Residential (9 and more pax)	

5.3 In the water heating package which load profile has to be used? The one indicated in the conventional hot water heater, or does it depend on the installer's decision?

The load profile of the conventional water heater is defined by the manufacturer according to the load profile used for testing the product. In the package label, the same load profile applies to the package, independently of the solar thermal collector field dimension and the storage capacity of the hot water tank.

5.4 How to label a water heater with a rated heat output < 70 kW, declared ErP compliant according to load profile 4XL (Reg. 814/2013). Is it correct to label this appliance using load profile 2XL (the highest one given by the Labelling regulation 812/2013)?

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

5.5 Are boiler or heat pump manufacturers able to provide the required technical specifications without any knowledge about the future heating package?

Yes, the calculation of the heater's efficiency, η_{wh}, is an independent procedure deployed by the manufacturer and it applies to individual heaters and package integrated.

5.6 Does SOLCAL as a calculation tool provide the data needed for setting the efficiency of a solar driven warm water producer with an electrically driven supporting heater? Or are system tests required?

The SOLCAL result is not appropriate for the calculation of a combined system.

Otherwise the evaluation of the ηwh for a solar driven warm water producer with an electrically driven heating element is only possible through load profile depending testing.

For avoiding testing the following formula is accepted: η_wh=η_(wh_calc)·0.95

5.7 In the SOLCAL methodology, in situations that we have a modelling pump, which is the pump power, Solpump to consider? The maximum power?

In the case the pump is a modulating pump, with at least three stages of modulation, the power to be used for the label is half of the maximum power. For non-modulating pump or pump with less than three stages, the maximum power must be used.

5.8 In SOLCAL, the heat losses coefficient of the storage tank (psbsol) is required (in W/K). In the product fiche of the storage, I just find the heat losses (in W). How can I calculate the coefficient?

The coefficient can be calculated dividing the heat losses by 45 K, which is a conventional temperature difference defined in the standards.

5.9 In the case when selecting a heat pump to what corresponds the "Seasonal space heating energy efficiency of heat pump (in %)"? Is it to the average climate conditions? Since that the upcoming information regards colder and warmer climates this would be the missing one no?

Yes.

5.10 In a package system, consisting of a preferential heater and a thermosiphon system does the user acknowledge the existence of a storage tank?

The storage tank should only be registered in a package system when it has its own energy label, according to the regulations. In the case of a thermosiphon system, labelled as a solar water heater, the user does not need to acknowledge the storage tank.

5.11 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.

6 MARKET SURVEILLANCE

6.1 Will the market still offer unlabelled heating products or systems?

From the 26th of September 2016 suppliers cannot place new heaters with a power below 70kW on the market without an energy label and the additional documentation. There is a period for selling the existing stock of heaters, with no label, and that are also exemptions, which consider products not commonly used in the residential sector.

6.2 Can the end consumer be held accountable for installing unlabelled products?

No, the responsible for issuing/making available the energy label lies with the supplier or dealer. Therefore, the installer (acknowledge in the regulation as dealer) can be accused of neglecting the legal guidelines for new heating products or systems up to 70 kW. Whenever the consumer identifies a noncompliance situation he can report it to the national consumer protection entities or to the market surveillance organization.

6.3 Who is responsible for assuring that only labelled products are installed?

The national market surveillance entities are responsible for monitoring the market and assuring that all the products available on the market comply with the European legal requirements.

6.4 Is the labelling process reliable? Is somebody checking the labels?

The labelling of individual products and standardized packages is the manufacturer's responsibility and it is based in test and certification procedures conveyed by qualified entities.

Market surveillance authorities are responsible for economic surveillance activities and regarding the energy labelling of heating products Annex VIII in the Regulated Acts No.811/2013 and Annex IX in No.812/2013 establishes the verification procedure for market surveillance purposes.

6.5 What are the fees imposed to the professionals that do not comply with the labelling regulation and do not present the product and/or system label to the consumer?

According to the Labelling Directive, each country is responsible for defining the fees to which non-complying professionals are sanctioned. The Labelling Directive should be transposed into the national legislation and within that one of the articles should deal with fees.

As an example, we present the Portuguese case. The labelling directive is transposed into the national law via the Decree Law 63/2011. The fees are established in article 17º and are:

- From 150€ to 1500€ when the label is miss appropriated (wrong apposition in the product, miss use of symbols and inscriptions that do not comply with the regulation)
- From 250€ to 2500€ when the energy label, and complementing documents, are not made available to the consumer
- From 300€ to 3000€ when the supplier does not provide the label and complementing documents or when the data in the documentation is not correct.

More FAQs available in the Commission's guidelines[11]:

[11] Guidelines Accompanying Regulations (EU) No 811&812/2013 , 813&814/2013, 2015/1187&1189 (2018) : http://www.label-pack-a-plus.eu/wp-content/uploads/2018/07/Guidelinesspacewaterheaters_2018_final-official.pdf

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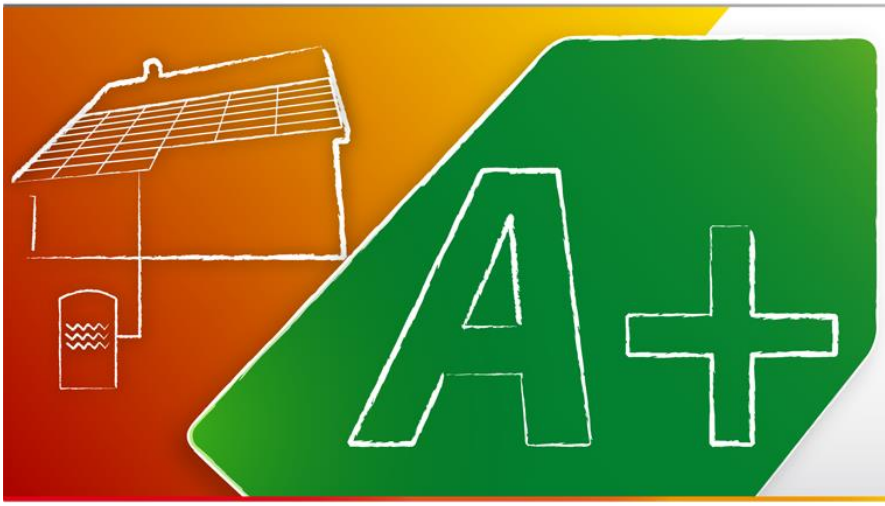

About the Labelpack A+ Project

The 'LabelPackA+' project aims at supporting the implementation of the energy labelling of heating appliances while boosting its impact, the focus being on the "package label" and its potential to push for the uptake or renewable technologies, in particular solar thermal, in combination with more efficient conventional technologies.

The project addresses one of the main challenges related to this particular energy labelling process in relation to other Energy-related Products : the issuing of the package label by installers. This challenge involves the preparation of the industry, retailers and installers for this process, including the communication to the final consumer.

More information at:
www.label-pack-a-plus.eu