



## Heat Pump KEYMARK


European KEYMARK Scheme for Heat Pumps

Rev.-No.: 14

Date: 04/04/2024

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Date	Description of modification	Revision number
01/05/2016	Initial version	1.1
10/03/2017	Addition of air/air product Editorial changes Clarifications of tolerances Tolerance on Prated (heating and cooling) has been deleted Annex E has been deleted	2
12/09/2017	Ownership of HP KEYMARK Editorial changes Add reference to guideline in the introduction Reference to annex D1 is withdrawn	3
07/03/2018	Addition of "one-off admission testing approach" Addition that only latest version of standard applies	4
13/09/2018	Addition of space cooling certification for water based heat pumps Clarification of certificate content Update of EN12102 standard Addition of non heated space air heat source for domestic hot water heat pumps Addition to reference to annex K	5
19/03/2019	Complete re-organisation: the part common to all heat pump originally included in annex A have been moved to the scheme rules Changing of certification body for already certified sub-types Update of the technical documentation Introduction of gas heat pumps and hybrid heat pumps Minor corrections	6
24/09/2019	Addition of CO <sub>2</sub> heat pumps Reorganisation of sections Change of marking rules for split type heat pumps Revision of sampling process for heat pumps above 70kW	7
03/09/2020	Addition of tolerance to heating and cooling capacity 11.1.1.2 and 11.1.2.2: will preferably is changed into should Addition to maximum response time for the CB Clarification of marking rules Addition of provision according to CEN CENELEC internal rules part 4; section 5.4 Addition of complaint procedure against certification body	8
17/03/2021	Deletion of "product revision number" document Rules to handle the discontinuing products Revision of part related to handling of complains Additional requirement on T <sub>biv</sub> Precisions on data declaration	9
10/06/2022	Air/air heat pumps also providing domestic hot water are added	10

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	Sections 3 and 7.4 are revised Wording clarification in section 11.1.2.2 Modification of the certification mark and labelling rules section 10	
13/09/2022	Addition of section 7.1; definition of tolerance Update of section 10 to align the wording with the guideline Sections 11,1,1,3 and 11,1,2,3 are suppressed and replaced by section 12	11
28/03/2023	Sampling for the admission tests section 9.1.2. Guidance related to the end of the validity period of certificates section 6	12
06/12/2023	Validity period is moved from section 10 to section 6 Type description is clarified, section 8.1 Clarification that the factory inspection shall be carried out physically and not remotely, section 11.1.2.1	13
04/04/2024	Clarification of the alteration of a subtype, section 13 Extend acceptance of an alternative key component in case of identical declared performance, section 13	14

## Foreword

This KEYMARK Scheme for heat pumps is maintained by the European Scheme Group for Heat Pumps (HPSG) under coordination of the appointed secretariat and supervision of Keymark management organization on behalf of CEN. The heat pump KEYMARK is designated as HP KEYMARK in the scheme documents.

## Revision of HP KEYMARK scheme documents

Documents will be revised by issue of revised editions or amendments. Details will be posted on the website at [www.keymark.eu](http://www.keymark.eu).


Technical or other changes which affect the requirements for the approval or certification of the product or service will result in a new issue. Minor or administrative changes (e.g. corrections of spelling and typographical errors, changes to address and copyright details, the addition of notes for clarification etc.) may be made as amendments.

The issue number will be given in decimal format with the integer part giving the issue number and the fractional part giving the number of amendments (e.g. Issue 3.2 indicates that the document is at Issue 3 with 2 amendments).

Users of this document should ensure that they possess the latest issue and all amendments.


## Possible conflict of HP KEYMARK scheme documents with national regulations (A-deviations)

No possible conflict with national regulations has been detected. In case any conflict is detected by any actor involved or not in the HP KEYMARK scheme, the conflict is to be reported to the HP KEYMARK secretariat and the needed provision, according to CEN CENELEC internal rules part 4 section 5.4 will be added in the scheme rules.

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## 1. Introduction

This Scheme document identifies the certification requirements and practices for the purposes of HP KEYMARK certification and listing of heat pumps for space heating and/or space cooling and/or domestic hot water production. Certification and listing of products is based on evidence acceptable to the certification body:

- that the product tested meets the requirements of this scheme document; and,
- that the product manufacturer has staff, processes and systems in place to ensure that the HP KEYMARK certified products meet and will continue to meet the requirements of this scheme document.

And on:

- regular audits of the product manufacturer including audit testing of products as appropriate; and,
- compliance with the contract with the certification body for the certification and listing of products, including agreement to rectify faults as appropriate.

## 2. Ownership

The KEYMARK certification scheme for heat pumps is owned by

### **CEN-CENELEC Management Centre**

Avenue Marnix 17 - B-1000 Brussels

Tel: +32 5 550 08 11 - Fax: +32 2 777 70 79

Email: [legal@cencenelec.eu](mailto:legal@cencenelec.eu)

The most recent contact information can be found at [www.keymark.eu](http://www.keymark.eu)

Documents, Website and database are property of the scheme and thus owned by CEN.

## 3. Scope, testing and certification basis


The scope of this KEYMARK scheme encompasses all heat pumps included in COMMISSION REGULATION (EU) No 813/2013 or 814/2013 of 2 August 2013, or COMMISSION REGULATION (EU) No 206/2012 of 6 March 2012, where industry recognised European products and testing standards are available. This includes:

- heat pump space heaters providing heat to water-based central heating systems for space heating purposes, with heating capacities up to 400 kW,
- heat pump combination heaters providing heat to water-based central heating systems for space heating purposes and heat to deliver domestic hot water, with heating capacities up to 400 kW,
- heat pump water heaters, which are dedicated to providing domestic hot water, with heating capacities up to 400 kW,
- air/air heat pumps up to 12 kW cooling capacity (or heating capacity for air/air heating only products), except single duct and double duct units.

Gas heat pump combination heater are excluded from the scope as no testing standard is available.

The scope of this KEYMARK also includes:

- hybrid heat pumps and hybrid combination heat pumps that meet the following definition: "Encased assembly or assemblies designed as a unit consisting of an air/water(brine)/DX-to- water(brine) electrically driven heat pump with a second heat

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- generator using fossil fuel, and managed by a common controller providing an optimized operation of the heat generators for space heating”,
- CO<sub>2</sub> heat pumps specifically designed for heating domestic water and which are placed on the market without a water tank,
  - air/air heat pumps included in the scope of REGULATION (EU) No 206/2012 of 6 March 2012 that also provide domestic hot water and that use outdoor air as a heat source. Air/air heat pumps providing simultaneously domestic hot water and space cooling and/or heating are excluded. Air/air heat pumps using another heat source than outdoor air are excluded. Air/air heat pumps with ventilation heat recovery heat exchanger are excluded.

This KEYMARK scheme provides on-going independent assessment and approval of companies who wish to demonstrate that their heat pump(s) meets and continues to meet the requirements of COMMISSION REGULATION (EU) No 813/2013 or 814/2013 of 2 August 2013 or COMMISSION REGULATION (EU) No206/2012 of 6 March 2012 including testing which is compliant with the appropriate European standards and documents listed below:

- EN 14511 Parts 1 – 4 “Air conditioners, liquid chilling packages and heat pumps with electrically driven compressors for space heating and cooling”; or,
- EN 12309 parts 1 - 7 “Gas-fired absorption and adsorption air-conditioning and/or heat pump appliances with a net heat input not exceeding 70 kW”; or,
- EN 16147 “Heat pumps with electrically driven compressors. Testing and requirements for marking of domestic hot water units”,
- EN 14825 “Air conditioners, liquid chilling packages and heat pumps, with electrically driven compressors, for space heating and cooling. Testing and rating at part load conditions and calculation of seasonal performance”,
- EN 12102-1 “Air conditioners, liquid chilling packages, heat pumps, process chillers and dehumidifiers with electrically driven compressors – Determination of the sound power level – Part 1: Air conditioners, liquid chilling packages, heat pumps for space heating and cooling, dehumidifiers and process chillers,
- EN 12102-2 “Air conditioners, liquid chilling packages, heat pumps, process chillers and dehumidifiers with electrically driven compressors – Determination of the sound power level – Part 2: Heat pump water heaters,
- EN 15879-1 “Testing and rating of direct exchange ground coupled heat pumps with electrically driven compressors for space heating and/or cooling. Part 1: direct exchange/water heat pumps”,
- EN16905 parts 1 to 5: Gas-fired endothermic engine driven heat pumps methods,
- EN13203-5: DHW testing standard for hybrid boiler,
- Relevant annexes of this Scheme Document,
- The performance and testing criteria detailed in section 7,
- CEN/CENELEC Internal Regulations, Part 4 “Certification”.


Only valid standard versions apply. Provisions are made in section 11.1.2.3. to handle standard revisions.

#### **4. Application to join the scheme**

Applications shall be made to an empowered certification body operating this KEYMARK scheme, which will provide the appropriate application form and details of the applicable fees.

#### **5. Management systems certification**

Manufacturers shall operate a documented and product related Factory Production Control (FPC) in compliance with the requirements of the HP KEYMARK Factory Inspection Requirements (see Annex B).

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## 6. Certification and approval

Certification and approval is based on demonstration of satisfactory compliance with the appropriate standards and the requirements of this scheme document, taking into account any limitations imposed by the standard(s), scheme document(s) and other appropriate guidelines, and satisfactory verification/assessment of the applicant's manufacturing processes (Factory Inspection) and technical documentation.

There are two alternatives to apply to the HP KEYMARK from which any applicant shall choose from. The first certification approach consists of a random test at admission of one or several heat pumps and periodic surveillance tests whereas the other approach is based on testing every product at admission and does not include any periodic surveillance test but technical document control. The first certification approach is named "periodic testing approach", the second one "one-off admission testing approach".

A unique approach shall be chosen for each product type. Changing of approach shall only be possible if certification process is restarted.

For both certification approaches, evidence of compliance is given by:

- a) Results from testing by a testing laboratory recognised by any of the empowered certification bodies. Requirements for testing laboratories are given in Annex H.
- b) Verification of the establishment and maintenance of the manufacturing company's quality management system in accordance with FPC requirements (see Annex B) and.
- c) Review of the technical documentation relating to the product (see section 9).

Applications for a type of common products (sub-types) will be dealt in accordance to the process defined in section 9.

A certificate is awarded following demonstration of satisfactory compliance with the scheme requirements. A certificate is awarded for each certified sub-type. Several models can be included in the same certificate.

The certification bodies shall issue the certificate not later than 1 month after the decision to award the certificate has been made.

Certificates will be prepared according to the KEYMARK certificate template (see Annex D2)


Certificates are valid for 10 years from the date of issue They are maintained and held in force subject to satisfactory completion of the requirements for maintenance of certification (see section 11), but remain the property of the issuing certification body. After the 10 years validity period has expired, a new application for certification is required. The certification body shall proceed to a technical documentation review of the sub-type, as described in section 9. If no technical change on the sub-type is identified, a new certificate can be issued.

Details of the certificate holder and the certified product(s) are listed at [www.keymark.eu](http://www.keymark.eu).

## 7. Performance and testing criteria

### 7.1. Definition of tolerance

The tolerance is the accepted deviation of the measured value from the declared value to prove conformity.

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### 7.2. Heat pumps for space heating

For compliance with this scheme, heat pumps that are in the scope of COMMISSION REGULATION (EU) No 813/2013 shall meet the minimum criteria defined in the regulation. In particular, the heat pumps shall meet the minimum performance criteria defined in Annex II section 1, the requirements for sound power level defined in Annex II section 3 and the requirement for NO<sub>x</sub> emission defined in Annex II section 4.

As hybrid heat pumps are not in the scope of COMMISSION REGULATION (EU) No 813/2013, there are no requirements to be met.

The space heating performance and sound power level of indoor and/or outdoor units for average climate shall be certified. The certification of performance for colder and warmer climates is optional. Certification of NO<sub>x</sub> emission is mandatory for gas heat pumps.

The bivalent temperature  $T_{biv}$  shall be chosen among the bin temperatures of the corresponding climate, meaning that  $T_{biv}$  shall be an integer.

Evidence of testing of products shall be provided in accordance with Annex A.

The tolerances are the following:

- $\eta_s$ : - 8 % of the declared value,
- $P_{rated}$ : - 8 % of the declared value,
- sound power level: + 2 dB(A) higher than the declared value.

Space cooling performance can be certified as an option. The certified performance are ( $P_{designc}$ , SEER/SPER<sub>c</sub>) and the evidence of testing of products shall be provided in accordance with annex A.

The tolerance related to the space cooling performance is the following:

- SEER/SPER<sub>c</sub>: -8% of the declared value,
- $P_{designc}$ : - 8 % of the declared value.

The tolerance related to NO<sub>x</sub> emission is the following:

- the measured value shall not be more than 20% higher than the declared value.

The applicant has to declare all performance data in the HP KEYMARK database.


### 7.3. Heat pump combination heaters

For compliance with this scheme, heat pumps for space heating and domestic hot water production that are in the scope of COMMISSION REGULATION (EU) No 813/2013 shall meet the minimum criteria defined in the regulation. In particular, the heat pumps shall meet the minimum performance criteria defined in Annex II section 1 and section 2 and the requirements for sound power level defined in Annex II section 3.

As hybrid heat pumps are not in the scope of COMMISSION REGULATION (EU) No 813/2013, there are no requirements to be met.

The certification of space heating for medium temperature application and domestic hot water production performance ( $P_{rated}$ ,  $\eta_s$ , Load profile,  $\eta_{DHW}$ ) and sound power level of indoor and/or outdoor units in space heating mode for average climate is mandatory. The certification of performance for low temperature application or for colder and warmer climates is optional.



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The bivalent temperature  $T_{biv}$  shall be chosen among the bin temperature of the corresponding climate, meaning that  $T_{biv}$  shall be an integer.

Evidence of testing of products shall be provided in accordance with Annex A.

The tolerances are the following:

- $\eta_s$ : -8 % of the declared value,
- $\eta_{DHW}$ : - 8 % of the declared value,
- $P_{rated}$ : - 8 % of the declared value,
- sound power level: +2 dB(A) higher than the declared value.

Space cooling performance can be certified as an option. The certified performance are ( $P_{designc}$ , SEER) and the evidence of testing of products shall be provided in accordance with annex A.

The tolerance related to the space cooling performance is the following:

- SEER: -8% of the declared value,
- $P_{designc}$ : - 8 % of the declared value.

The applicant has to declare all performance data in the HP KEYMARK database.

#### 7.4. Heat pump water heaters

For compliance with this scheme, heat pump water heaters shall meet the minimum criteria defined in COMMISSION REGULATION (EU) No 814/2013.

The certification of performance (Load profile,  $\eta_{DHW}$ , mixed water volume at 40 °C) and sound power level of indoor and/or outdoor units for average climate is mandatory. The certification of performance for colder and warmer climates is optional. Certification of products using non-heated indoor air as a heat source may be conducted as an option. Certification under this heat source shall be conducted in addition to the certification using a heat source defined in regulation 814/2013.

Evidence of testing of products shall be provided in accordance with Annex A.

The tolerances are the following:

- $\eta_{DHW}$ : -8 % of the declared value,
- mixed water volume at 40 °C: -3 % of the declared value,
- sound power level: +2 dB(A) higher than the declared value.


The applicant has to declare all performance data in the Heat Pump KEYMARK database.

#### 7.5. Air/air heat pumps and air conditioning units below 12 kW

For compliance with this scheme, heat pumps shall meet the minimum criteria defined in COMMISSION REGULATION (EU) No206/2012.

The certification of performance ( $P_{rated}$ , SCOP/SEER) for reversible units, ( $P_{rated}$ , SCOP) for heating only units and ( $P_{rated}$ , SEER) for cooling only units as well as sound power level of indoor/outdoor units, for average climate is mandatory. The certification of performance in heating mode for colder and warmer climates is optional.

Evidence of testing of products shall be provided in accordance with Annex A.

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The tolerances are the following:

- SCOP/SEER: -8 % of the declared value,
- $P_{rated}$ : - 8 % of the declared value,
- sound power level: +2 dB(A) higher than the declared value.

Domestic hot water performance for air/air heat pump also providing domestic hot water can be certified as an option. The certified performance is ( $\eta_{DHW}$ ) and the evidence of testing of products shall be provided in accordance with annex A.

The tolerance is the following:

- $\eta_{DHW}$ : -8 % of the declared value.

The applicant has to declare all performance data in the HP KEYMARK database.

### 7.6. CO<sub>2</sub> heat pumps

For compliance with this scheme, heat pumps using R744 as refrigerant, namely CO<sub>2</sub> heat pumps in the HP KEYMARK documents, designed for heating the domestic hot water and placed on the market without storage tank shall meet the minimum requirements for sound power level defined in Annex II section 3 of COMMISSION REGULATION (EU) No 813/2013.

The certified performance for CO<sub>2</sub> heat pumps designed for heating domestic hot water and placed on the market without storage tank are the following:

- COP according to the testing condition defined in Annex A part D,
- heating capacity according to the testing condition defined in Annex A part D,
- sound power level.

Evidence of testing of products shall be provided in accordance with Annex A.

The tolerances are the following:

- COP: -8 % of the declared value,
- heating capacity: - 8 % of the declared value,
- sound power level: +2 dB(A) higher than the declared value.

## 8. Classification of products

### 8.1. Type

A type of heat pumps is defined by the use of the same:


- Heat source,
- heat sink,
- driving energy (gas, electricity etc...).

For each driving energy, the types covered by the KEYMARK Scheme are:

- outdoor air (or exhaust air)/water - heat pumps,
- water (or brine)/water - heat pumps,
- direct expansion/water - heat pumps,
- air/air – outdoor air/recycled air heat pumps and air conditioners except single duct and double duct units.

Note: hybrid heat pumps constitute a separate type.

The types are declared by the manufacturers.

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## 8.2. Sub-type

A sub-type is part of a type. Heat pumps with an identical refrigeration circuit design, including same refrigerant and mass of refrigerant are considered as being the same sub-type if they fulfil all conditions below:

- same compressor: identical (same manufacturer and commercial reference),
- same condenser: identical (same manufacturer and commercial reference),
- same evaporator: identical (same manufacturer and commercial reference) – except for air/air multi-split units,
- same defrost process (when relevant),
- expansion device: same technology.

Heat pumps with and without 4 way-valve shall not be included in the same sub-type.

In addition, for combination heat pumps, heat pump water heaters and air/air – outdoor air/recycled air heat pumps and air conditioners providing domestic hot water:

- same tank volume,
- same heat exchanger.

For air/air multi-split units the sub-type classification only applies to outdoor unit.

Sub-types are declared by manufacturers but the final decision on sub-types rests with the certification body.

## 8.3. Model

A sub-type may consist of several different models, i.e. heat pumps using identical refrigeration circuits, but otherwise differ in design. Examples of such differences are given, but not limited to the list below:

- with or without integrated circulator pump(s),
- with or without integrated storage tank,
- with or without integrated back up heater,
- different corrosion protection of storage tank(s),
- different location and dimensions on pipe connections,
- different electrical supply (frequency, single/three phases),
- different brand names.

in case models have deviating performance, provisions in Annex A, part E apply.

Models are declared by manufacturers but the final decision on models rests with the certification body.


## 9. Admission process

### 9.1. Admission tests

#### 9.1.1. General process

Admission tests shall be conducted by a recognised testing laboratory (see Annex H). The test report shall be communicated to the certification body together with the technical documentation.

For admission according to the “one-off admission testing approach”, every sub-type shall be tested prior to certification. The model to be tested is chosen by the certification body according to the sampling process described in this section.

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For admission according to the “periodic testing approach”, the sub-type to be tested shall be selected by the certification body according to the sampling rules (section 9.1.2.), the model to be tested shall be selected according to the sampling process described below.

For the sampling process; the applicant shall provide a minimum of three units (traceable by serial numbers) for the model selected by the certification body; from which the certification body will select one random unit (traceable by serial number) to be tested by a recognised testing laboratory. The selection does not require that the units are physically selected or picked up by the certification body or inspector. For example, the whole process can be conducted by email.

For units with  $P_{rated}$  greater than 70kW, the applicant is allowed to provide the certification body with a single serial number.

The certification body also indicates to the applicant the testing conditions (climates; temperature application and part load conditions), annex L template may be used for that purpose. The applicant shall send the sample to a recognised testing laboratory and inform the certification body within the following month about the schedule and place for the tests.

### 9.1.2. Sampling rules

The following tables specify the number of sub-types to be tested according to the types of heat pumps.

Applications are made separately for each sub-type, thus the sample size as described in the following tables applies regardless of the time elapsed during several applications.

Eg: for the air/water type, one test is enough to certify 5 sub-types. A certificate holder that tests a sub-type in January 2023 can apply for the certification for 4 additional sub-types without showing a test report, even though the applications are made in 2024 or later.


**Table 1** Sample size for all types of heat pumps except air/air type

Number of sub-types to be certified	Number of sub-type to be tested
$\leq 5$	1
$> 5 \leq 10$	2
$> 10 \leq 15$	3
$> 15 \leq 20$	4
$> 20 \leq 25$	5
$> 25$	every 5 <sup>th</sup> sub-type will require one additional test

For air/air type, different rules for single split/package units and multi-split units apply.

**Table 2** Sample size for split and package air/air units

Number of sub-types to be certified	Number of sub-type to be tested
$\leq 10$	1
$> 10 \leq 20$	2
$> 20 \leq 30$	3

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Number of sub-types to be certified	Number of sub-type to be tested
> 30 ≤ 40	4
> 40 ≤ 50	5
> 50	every 10 <sup>th</sup> sub-type will require one additional test

For multi split air/air units, as each outdoor unit can be combined with several kinds of indoor units;

- wall,
- ducted,
- cassette,
- floor,
- ceiling,
- etc...

The combination of the outdoor unit with indoor units shall be selected so that the capacity ratio is equal to 1 (±5%) within the combinations declared by the applicant.

All declared kinds of indoor units shall be tested in combination with one or several of the selected outdoor units at least once.

**Table 3** Sample size for multi split air/air units.


Number of sub-types to be certified	Number of outdoor units to be tested
≤ 5	1
> 5 ≤ 10	2
> 10 ≤ 15	3
> 15 ≤ 20	4
> 20 ≤ 25	5
> 25	every 5 <sup>th</sup> sub-type will require one additional test

### 9.1.3. Data declaration

The applicant shall declare all the requested data in the HP KEYMARK database for all sub-types and models.

While declaring the data in the HP KEYMARK database, the following rules apply:

- the declared heating capacities  $P_{dh}(T_j)$  mean the heating capacity a heat pump space heater or a heat pump combination heater is able to deliver for an outdoor temperature  $T_j$ .
- $P_{sup}$  corresponds to the supplementary heating capacity that supplements the declared heating capacity at  $T_{designh}$  to meet  $P_{rated}$ ,
- performance at -15°C outdoor temperature condition shall be declared only in case the following three conditions are gathered:

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- the heat pump space heater or combination heater is using outdoor air as heat source,
- the performance apply to colder climate conditions,
- TOL<20°C.

### 9.2. Factory inspection

Factory inspection is part of the first admission process and shall be performed according to Annex B. Factory inspection prior to admission is not required if the factory is already subject to periodic factory inspection in the scope of HP KEYMARK maintenance (i.e. an already certified sub-type is being produced in the factory).

### 9.3. Technical Documentation review

The review of technical documentation for the sub-types and models is part of the admission process. This documentation shall be presented in English, or another language agreed by the certification body and shall be such that it can be assured that the sub-types and models submitted for certification are equivalent to those that are to be manufactured. The documentation must consist of the following:

- a) Description of the product including the details of intended use (space heating, cooling, domestic hot water, etc).
- b) Key component part list document in accordance with the key components listed below. For each key component, type, reference and brand shall be provided.
- c) Installation, use and maintenance instructions.

If present, the key components are: compressor(s), circulating pump(s), condenser(s), evaporator(s), expansion valve(s), fan(s); motor(s), refrigerant (designation and amount shall be given), pressure switches, fossil fuel burner (only for hybrid heat pump). Additional key components might be listed for gas heat pumps.

## 10. Certification mark and labelling

It is not mandatory to affix the HP KEYMARK logo on a certified product. In case the logo is affixed, the marking rules as described in this section shall be applied


While marking a product, the following template shall be used:



**xxx-000**

Where 'xxx' is the identification code of the certification body which issued the certificate and "000" is the specific certificate number.

Indoor and/or outdoor units that are constituting parts of several combinations of split systems, some of which are not HP KEYMARK certified, are not allowed to bear any KEYMARK marking.

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The HP KEYMARK certified products shall be clearly identified in the certificate holder documentation.

Indoor units and/or outdoor units that are part of split systems, all possible combinations of which are HP KEYMARK certified, can bear a KEYMARK marking that is only showing the “xxx” identification code of the certification body as per follow:



xxx

The KEYMARK marking rules are detailed in CEN/CENELEC Internal Regulations Part 4, section 4.4 and its Annex A.

## 11. Maintenance of certification and listing

Certificates and listed products are maintained and held in force subject to satisfactory completion of the following requirements for maintenance of certification:

### 11.1. Periodic surveillance

#### 11.1.1. One-off admission testing approach

The surveillance process is passed if both factory inspection and documentation control are confirmed to conform by the certification body.

##### 11.1.1.1. Factory inspection

Factory inspection shall be performed at each manufacturing site at least every 12 months according to Annex B.

##### 11.1.1.2. Technical documentation control process


Technical documentation control applies to each type and to each manufacturing site independently. The technical documentation control process is called Physical Inspection and shall include every aspect included in Annex K.

For the model to be controlled, the certificate holder shall provide the key component list, drawings and all other documents that may be requested by the recognised inspector. The technical documentation control is done on site by the recognised inspector. The technical documentation control is passed if the certification body can confirm that the heat pump being produced is equivalent to the certified model. In case equivalency cannot be proved, the control is failed.

- **Model and unit selection rules**

The models to be controlled shall be selected by the certification body and units shall be chosen by a recognised inspector.

For a technical documentation control, one model of a sub-type per type is selected by the certification body. If the selected sub-type includes heat pumps for space heating and combination heat pumps then a combination heat pump should be selected.

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One unit of the selected model shall be chosen by a recognised inspector from the existing stock of products or directly from the production line. The unit selection may be done during an annual factory inspection or during a specific visit upon certification body request.

In case of split type heat pump, this rule applies to the indoor and outdoor parts of the selected model. In case outdoor and indoor units are not produced in the same manufacturing site, the technical documentation control is done in each site. The control is passed only if both indoor and outdoor unit technical documentation control is confirmed to conform by the certification body.

- **Periodicity**

Regular technical documentation control periodicity is 12 months. Every 12 months, one model of a sub-type per type is to be controlled in each manufacturing site.

- **Penalties**

In case the technical documentation control is failed, the certificate for the controlled sub-type shall be withdrawn by the certification body.

### 11.1.2. Periodic testing approach

The periodic surveillance process shall start 12 months after the first certificate has been granted to the applicant. Surveillance (including positive assessment of the certification body) has to be completed not later than 3 months after the process has started.

The process starts with the factory inspection where models are chosen by recognised inspector for surveillance test.

Surveillance test process and rules apply to each type independently.

Retesting rules shall be applied to each “failed” test according annex A part A.

The surveillance process is passed if factory inspection, operating test and test are confirmed to conform by the certification body.

#### 11.1.2.1. Factory inspection

Factory inspection shall be performed, physically, at each manufacturing site at least every 12 months according to Annex B.

#### 11.1.2.2. Surveillance test process

Periodicity of surveillance test depends on the test results and number of manufacturing sites.

A surveillance test is “passed” when the certification body has confirmed that the certified performance listed in section 7 that are tested conformed to the declared performance according the scheme requirements. A surveillance test is “failed” when at least one of the performance listed in section 7 that is tested deviates from the declared performance in a higher level than the defined tolerances.


- **Model and unit selection rules**

The models to be tested shall be selected by certification body and units shall be chosen by recognised inspector.

For a surveillance test, one model of a sub-type per type is selected by the certification body. If the selected sub-type includes heat pumps for space heating and combination heat pumps a combination heat pump should be selected.

One unit of the selected model shall be chosen by a recognised inspector from the existing stock of products or directly from the production line. The unit selection may be done during an annual factory inspection or during a specific visit upon certification body request.



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In case of split type heat pump, this rule applies to the indoor and outdoor parts of the selected model.

- **Periodicity**

- Single manufacturing site

Regular surveillance test periodicity is 24 months. If the surveillance test is “passed”, then the next surveillance will be performed after 24 months.

In case the surveillance test is “failed”, the next surveillance, on another model of another sub-type or same sub-type upon decision of certification body, shall be performed after 12 months. The unit to be tested shall be chosen during factory inspection.

In case this test performed 12 months later than the first one is also “failed”, another test, on another model of another sub-type or same sub-type upon decision of certification body shall be performed after 6 months. The unit to be tested shall be chosen by a recognised inspector.

The periodicity remains one test every 6 months until the test is “passed”. Then the regular periodicity applies again.

- Multi manufacturing sites

If the manufacturing of a type takes place at more than one manufacturing site, the regular surveillance test periodicity is 12 months. The unit to be tested should be selected from a different manufacturing site every 12 months, at the discretion of the certification body. For air/air type, only the manufacturing sites of the outdoor units are considered for the following procedure.

If the surveillance test is “failed” the regular surveillance test periodicity as described above goes on but in addition, another unit manufactured at the same manufacturing site shall be tested within 12 months. The model can belong to another sub-type or to the same sub-type upon decision of the certification body. The unit to be tested shall be chosen by a recognised inspector.

In case this second test is “failed”, another unit manufactured on the same manufacturing site shall be tested within 6 months. The model can belong to another sub-type or to the same sub-type upon decision of the certification body. The unit to be tested shall be chosen by a recognised inspector.

The periodicity remains one test every 6 months until the test is “passed”. Then the regular periodicity applies again.

The process is described through an example and a chart in a note at the end of this document.


- **Shipment of the test sample to a recognised testing laboratory**

After the unit has been chosen by the recognised inspector the certificate holder shall send the unit to a recognised testing laboratory and shall inform the certification body within the following month about the schedule and place for the tests.

- **Performance to be tested**

The template proposed in annex L can be used by the certification body to inform the certificate holder about the test conditions that are to be tested.

The performance to be tested are described in the annex A.

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### 11.2. Fees

By applying for the licence to use the HP KEYMARK, the applicant also agrees to meet:

1. the KEYMARK license fees specified in the CEN/CENELEC Internal Regulations, Part 4 "Certification".
2. the fees for the Administration of the HP KEYMARK as specified in the internal rules.

### 12. Standard revision

The certificate holders shall ensure at all time that the declared performance are updated when standards are revised. This procedure does not apply to heat pumps certified according to the one-off testing approach.

### 13. Alteration of HP KEYMARK certified heat pumps

A sub-type can be modified either because of a change in models included in the sub-type or because of addition of a model. Certified performance modification can only occur in case of rerating or in case of standard revision according to section 12.

Each modification, including any modification of certificate holder details, to a certified sub-type shall be declared to the certification body. Template provided in annex F can be used.

- The certificate holder has to inform the certification body about any changes of the key components as specified in section 9 - before the change is implemented. Alternative key components are acceptable in case of identical declared data only.  
In any case, the certificate holder has to provide the certification body with an updated key components parts list and filled Annex F. The need for additional tests shall be decided by the certification body based on expert opinion provided by a recognised testing laboratory.  
Annex F may be used for this purpose. The certificate holder may recommend a recognised testing laboratory or the certification body may decide by itself to choose a recognised testing laboratory if the certificate holder does not provide any recommendation. Any alteration follows the rules of test admission concerning sampling, data declaration and testing if tests required,
- when a new model is to be added in an existing certified sub-type, the certificate holder shall inform the certification body and provide him with the technical documentation related to this new model in accordance with section 9,
- the modified certificate will keep the same registration number but the certificate version shall be changed so that it is clear for the users that the certificate has been updated,
- the HP KEYMARK database shall be updated accordingly with the change.


### 14. End of production of a certified product

When a certified model production is discontinued, the certificate holder shall inform the certification body.

The model shall be withdrawn from the database two years after the model production stopped. When all models belonging to the same subtype are discontinued, the certificate shall be withdrawn from the database two years after the last model production stopped.

### 15. HP KEYMARK certificates and sub-licenses for other brands, product names, and sellers

The rules for issuing certificates and sub-licenses within the Heat Pump KEYMARK certification are defined in Annex G.

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## 16. Change of certification body while HP KEYMARK process is on-going

It is possible at any time for a certificate holder to change his certification body for another empowered certification body. Switch may concern several or all certificates. The certification body shall not put any obstacle to this change.

Certificates already issued are deemed valid and no additional testing nor factory inspection is needed when changing of certification body.

When switching certification body, the certificate holder shall provide the new certification body with:

- a copy of all application files originally sent to the previous certification body (including technical documentation and test reports),
- admission and surveillance factory inspection reports,
- surveillance test report together with related decision taken by the previous certification body where relevant.

The move of certificate also includes Own Brand Labelling (OBL) products. OBL certificate holder shall provide the new certification body with:

- a copy of the application file,
- an updated declaration according annex G mentioning the new certification body.

The new certification body shall update both the Heat Pump KEYMARK database and the certificates with the following information:

- new registration number,
- update of the certification body,
- OBL certificates shall be updated as well.

The new certification body shall provide notification to the previous certification body on the date that the new certificate will be issued. The previous certification body shall withdraw the certificates it granted, including the OBL certificates.

Certificate holder, including OBL certificate holders shall update the registration number on their product label and documentation.


## 17. Handling complaints on bodies engaged in certification, testing and inspection

The procedure to handle the complaint is set in order to:

- have a harmonised procedure for handling complaints,
- solve complaints in an appropriate time and way,
- maintain the high reputation of HP KEYMARK,
- ensure a fair competition between the testing laboratories, inspectors, and certification bodies.

The following procedure for complaints is applied to testing institutes and inspectors:

- the complainant will inform the respective certification body in writing,
- the certification body will forward the complaint to the relevant testing laboratory / inspector and ask for clarification and appropriate corrective actions within a defined due time,
- the clarification and corrective actions will be sent to the certification body for assessment,

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- complaint to inspectors: the certification body will assess the inspector's report of actions related to the complaint and will decide if a witness audit of the inspector is required. If the certification body decides by itself or with recommendation of the certification body peer group that a special audit of the inspector is required, the party at fault, whether that be the inspector or certification body, has to pay for the audit,
- complaint to testing institutes: the certification body will assess the testing laboratory's report of actions related to the complaint and will decide if it requires the technical support of the testing laboratory peer group to decide of the relevance of the corrective actions. In such a case the complaint and the corrective actions shall be analysed by the testing laboratory peer group and reported to the certification body. The certification body may decide by itself or under the recommendation of the testing institute peer group that a special audit is needed. In that event, the testing laboratory peer group shall choose one or several appropriate auditors to perform this audit. The party at fault, whether that be the testing laboratory or the certification body, has to pay for the audit,
- if the certification body agrees to the provided corrective actions and the complaint is solved, the certification body will inform the complainant about the result by sending back the form.

If the complainant is still not satisfied with the response he may appeal against the decision. Notice of appeal shall be filed to the secretariat no later than 30 days after previous decision.

The certification bodies peer group will prepare a summary of all complaints and send to the HPSG for presentation at next HPSG meeting.

All HP KEYMARK certification bodies are required to have complaints and appeals procedures. Therefore, for complaints or appeals that concern certification bodies, the complainant should follow the certification body complaints or appeals procedure as appropriate.

## List of Annexes

Annex A HP KEYMARK Testing and rerating rules

Annex B Requirements for Factory Production Control (FPC) and Inspection

Annex C Factory Production Control (FPC) – Report

Annex D2 Template HP KEYMARK certificate


Annex F Report of modification to products certified according to the HP KEYMARK scheme

Annex G Rules for OBL and Brands

Annex H Requirements for and recognition of testing laboratories

Annex I HP KEYMARK transition rules

Annex K HP KEYMARK Physical Inspection

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Annex L Sampling template

HP KEYMARK – Internal Rules



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## Note 1 Example of surveillance test process related to 10

Matrix	Manufacturing site							
		A	B	C	D	E	F	G
Types	1	X	X	X				
	2				X	X		
	3				X			
	4						X	X
	5						X	X
Year 1	Manufacturing site							
		A	B	C	D	E	F	G
	1	X	X	X				
	2				X	X		
	3				X			
4						X		
5						X	X	
Year 2	Manufacturing site							
		A	B	C	D	E	F	G
	1	X	X	X				
	2				X	X		
	3				X			
4						X		
5						X	X	

The picture „Matrix“ shows a manufacturer with seven factories (A-G) at which 5 types of heat pump (1 – 5) are produced.

Since not every type of heat pump has to be verified annually in every factory the picture “Year 1” shows the types that have been tested from the different factories (marked with a circle). Green circles are successful tests (A1, D2, F2) red circles are failed tests (D3, F5).

As D3 and F5 failed in year 1, they have to be tested again in year 2. In addition, 3 other units from B1, E2 and G5 are tested. No test on type 4 as year 1 test passed. All tests performed in year 2 passed, except E2.



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Year 3	Manufacturing site							
		A	B	C	D	E	F	G
Types	1	X	X	X				
	2				X	X		
	3				X			
	4						X	
	5						X	X

As E2 failed in year 2, it has to be tested again in year 3. In addition, 4 other units from C1, D2, F4 and F5 are tested. No test on type 3 as year 2 test passed. All tests performed in year 3 passed, except C1, D2 and E2.

Year 4	Manufacturing site							
		A	B	C	D	E	F	G
Types	1	X	X	X				
	2				X	X		
	3				X			
	4						X	
	5						X	X

As C3, D2 and F3 failed in year 3, They have to be tested again in year 4. In addition, 3 other units from A1, E2 and G5 are tested. No test on type 4 as year 3 test passed. All tests performed in year 4 passed.