

# ENERGY EFFICIENCY OF AIRZONE SYSTEMS IN EUROPE

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ALTRA BUSINESS CORPORATION S.L.

**Control version**

Version	Elaborated by	Revised by	Approved by
v01	Maria Benavides 08/11/2022	-	-
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Product Quality, Energy & IAQ Department

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## 1. Introduction

This document purpose is to show how Airzone systems improves the energy efficiency of Residential and Commercial HVAC installations in Europe.

All the voluntary certifications and incentive programs in which Airzone systems cooperate or is part of in Europe are explained in this document.

## 2. Voluntary Certifications

In this section are explained all the certifications that Airzone systems have in Europe. These certifications aren't mandatory by governments but they give an extra value to the Airzone systems demonstrating the reliability of the products, the contribution to global sustainability and the protection of the environment reducing CO<sub>2</sub> emissions and energy wasting.

### 2.1. Eu.bac

Various EU-Directives and National Regulations regarding energy saving and energy performance of buildings require proof of energy efficiency. In response to this, Eu.bac (European Building Automation and Controls Association) set up the European Certification Scheme for Building Automation and an European label of Energy Efficiency for Home Controls and Building Automation Products and Systems.

Home Controls and Building Automation products and systems have a significant influence on the overall energy efficiency of buildings. Therefore, the energy efficiency labelling scheme has been designed to assist the consumer with the selection of energy efficient products and systems based on an accredited third-party Certification Scheme.

The Eu.bac Certification Mark ensures users the conformity of the products and systems defined in the European Directives and Standards. The registered Eu.bac Cert Mark is a symbol that expresses Energy Efficiency and Quality. The Eu.bac Cert Mark is the European Quality Label for products and systems in Building Automation and Controls.

Eu.bac offers test Certification and Labelling for Electronic Individual Zone Controllers regarding EN 15500 in Building Automation – BA (with Communication) and Home Controls – HC (Stand-alone).

**Airzone has the Eu.bac certification for Flexa and Easyzone.**

### 2.2. CEE

The system of Energy Savings Certificates (EEC) was created by the energy law of 13/07/2005 (PAPA law) and is one of the main political tools in France for controlling energy demand. The primary goal is to achieve energy savings in the construction, industry, agriculture and transport sectors, and meet France's commitment within the European Union to improve the energy efficiency by 2030, compared to the forecasted scenarios.

This system is based on a three-year energy saving obligation imposed by the public authorities to energy suppliers. To receive a CEE, they are therefore encouraged to actively promote energy efficiency among energy consumers: households, local authorities or professionals.

The CEE mechanism is open also to other market players, that can also undertake energy efficiency projects, receive the CEE, and sell them in the market, thus creating a market mechanism.

**Airzone systems have a Class B according to the standard EN 52120-1:2022 and they comply with the standard EN 12098-5:2017.**

Link to the official document for [EN 52120-1:2022](#).

Link to the official document for [EN 12098-5:2017](#).

**Airzone Systems are class IV and could be class V with an OpenTherm gateway.**

Link to the official document [here](#).

### 2.3. ATEC

The Avis Technique (technical opinions) elaborated by the CSTB (Centre Scientifique et Technique du Bâtiment) laboratory guarantee the use of innovative construction processes through the opinion formulated by a group of experts called GS (Groupe spécialisé).

Technical Approvals are issued by the CCFAT (Commission Chargée de Formuler des Avis Techniques) attached to the ministry of construction and housing.

ATEC is not mandatory, but it is recognized by all market players to establish the level of confidence in the construction sector innovations. This is the case of the joint operation of a hygrometry (humidity) controlled ventilation equipment and an air conditioning unit.

GS 14.5, relating to ventilation systems, verifies the proper functioning by checking:

- 1) The air conditioning fan does not generate an overpressure that implies a change in the direction of the ventilation flow that causes the intake ports to become extraction ports and vice versa.
- 2) The air conditioning equipment does not alter the ambient relative humidity at a level that could affect the humidity control.

**Currently, Airzone systems have ATECs with Daikin-Renson, Hitachi-Anios & Mitsubishi Electric-S&P Unelvent.**

**The ATECs for Daikin-Anios, Hitachi-Anios, Panasonic-Renson and Toshiba are in progress.**

### 2.4. PEP Ecopassport

The PEP (Product Environmental Profile) registered under the PEP Ecopassport® Program is a type III environmental declaration according to the ISO 14025 standard.

It is dedicated to electric, electronic and HVAC-R products and requires a multicriteria LCA.

The Product Category Rules (PCR) provides common rules to apply for Life Cycle Assessment of electrical, electronic and HVAC-R products.

**Airzone has the PEP Ecopassport certification for Aidoo Controller.**

### 2.5. DGNB (GBCe, VERDE)

VERDE® is the Spanish certification tool for environmental sustainability. It consists of a set of tools that make up a methodology for environmental assessment and certification of buildings developed by the GBCe (Green Building Council Spain). The GBCe Technical Committee has defined some criteria and rules to establish the necessary limits and requirements to be able to grant the VERDE® Certification to a building.

VERDE® is a certificate equivalent to BREEAM or LEED but adapted to the regulations, socioeconomic and cultural situation of Spain. Therefore, the evaluation system is based on the CTE (Technical Building Code) and European Directives. It is based on the principles of bioarchitecture and respect for the ecosystem, making the building compatible with the environment and high standards of life quality and comfort for users.

The evaluation criteria are grouped into different areas: selection of the plot, site and planning project, quality of the indoor environment, energy and atmosphere, quality of service, natural resources, socio-economic impact and innovation.

**In this association, Airzone systems can cooperate in the following categories:**

- ENERGY AND ATMOSPHERE (EA)
  - Heating and cooling demand:
    - (VERDE Ω EQUIPMENT can contribute **up to 8.49% of the score**)
    - (VERDE Ω HOUSING can contribute **up to 6.83% of the score**)
  - Non-renewable primary energy consumption:
    - (VERDE Ω EQUIPMENT can contribute **up to 5.03% of the score**)
    - (VERDE Ω HOUSING can contribute **up to 4.04% of the score**)
  - CO<sup>2</sup> emissions from HVAC and domestic hot water processes:
    - (VERDE Ω EQUIPMENT can contribute **up to 3.14% of the score**)
    - (VERDE Ω HOUSING can contribute **up to 3.10% of the score**)
- QUALITY CONCEPT
  - Availability of a building management system (BMS):
    - (VERDE Ω EQUIPMENT can contribute **up to 3.32% of the score**)
    - (VERDE Ω RESIDENTIAL can contribute **up to 3.41% of the score**)
  - Availability of partial operation of technical facilities and systems:
    - (VERDE Ω EQUIPMENT can contribute **up to 1.21% of the score**)
  - Availability of HVAC systems local control in non-residential areas:
    - (VERDE Ω EQUIPMENT can contribute **up to 1.81% of the score**)

## 2.6. LEED

LEED® (Leader in Energy Efficiency and Sustainable Design) is an evaluation system and international standard developed by the U.S. Green Building Council to promote the development of buildings based on sustainable and highly efficient criteria.

To achieve LEED® certification, a project earns points by adhering to prerequisites and credits that address carbon, energy, water, waste, transportation, materials, health and indoor environmental quality. Projects go through a verification and review process by GBCI and are awarded points that correspond to a level of LEED® certification: Certified (40-49 points), Silver (50-59 points), Gold (60-79 points) and Platinum (80+ points).

**In this standard, Airzone systems can cooperate in the following sections:**

- Energy and Atmosphere (EA)
  - Category focused on: Commercial Interiors, Retail, Hospitality, Existing buildings, Interiors, Residential Family Homes and Multifamily Homes Core and Shell.*
  - EA Credit Optimize Energy Performance: **Up to 24 credits.**
  - EA Credit Annual Energy Use: **Up to 36 credits.**
  - EA Credit HVAC Start-Up Credentialing: **Up to 1 credit.**
- Indoor Environmental Quality (EQ)

*Category focused on: New Construction, Core & Shell, Schools, Retail, Data Centers, Warehouses, Distribution Centers, Hospitality, Healthcare, Commercial Interiors, Residential Family Homes and Multifamily Homes Core and Shell.*

EQ Credit Enhanced Indoor Air Quality Strategies: **Up to 4 credits.**

EQ Credit Thermal Comfort: **Up to 1 credit.**

EQ Credit Balancing of Heating and Cooling Distribution Systems: **Up to 6 credits.**

## 2.7. BREEAM

BREEAM (Building Research Establishment's Environmental Assessment Method) is a method of evaluating and certifying the sustainability of buildings, widely recognized internationally, which favors a more sustainable construction that translates into greater profitability for those who build, operate and/or maintains the building, achieving a reduction in its impact on the environment, and greater comfort and health for those who live, work or use the building.

It evaluates impacts in 10 categories (Management, Health and Well-being, Energy, Transport, Water, Materials, Waste, Ecological Land Use, Pollution, Innovation) and awards a final score after applying an environmental weighting factor that considers the relative importance of each impact area. The final score is translated into a label that shows the level obtained: Approved, Good, Very Good, Excellent and Outstanding.

The BREEAM Association has their own programs in Netherlands, Spain, Germany, Austria, Switzerland, Sweden and Norway. For the rest of the world, BREEAM International would apply.

**In this evaluating method, Airzone systems could cooperate in the following sections of the International Code:**

### BREEAM INTERNATIONAL

#### International New Construction

- Management  
Man 05 Aftercare: **Up to 1 credit.**
- Health and Wellbeing  
Hea 02 Indoor Air Quality: **Up to 2 credits.**  
Hea 04 Thermal Comfort: **Up to 1 credit.**
- Energy  
Ene 02b Energy monitoring (residential buildings): **Up to 1 credit.**  
Ene 08 Energy efficient equipment: **Up to 2 credits.**

#### International Non-Domestic Refurbishment

- Management  
Man 05 Aftercare: **Up to 1 credit.**
- Health and Wellbeing  
Hea 02 Indoor Air Quality: **Up to 1 credit.**  
Hea 04 Thermal Comfort: **Up to 1 credit.**

- Energy  
Ene 08 Energy efficient equipment: **Up to 2 credits.**

## 2.8. WELL

The WELL Building Standard is a performance-based standard that combines best practices in design and construction with evidence based in health and wellness interventions. It looks to support human health, well-being and comfort.

The WELL Construction Standard is organized into 7 wellness categories called concepts: air, water, nutrition, light, exercise, comfort and mind.

Each concept is made up of multiple features, intended to address specific aspects of occupant health, comfort and knowledge. Each feature is divided into parts, which are often tailored to a specific type of building, and each part has one or more requirements that determine specific parameters or metrics that must be met. For a project to receive points for a particular feature, it must meet all parts applicable to that feature.

The WELL Building Standard can be applied in many real estate sectors, but the current standard is optimized for commercial and institutional office buildings, although it can be applied to any type of new or existing building.

**In this standard, Airzone systems can cooperate in the following sections:**

- Air
  - A05 Enhanced Air Quality: **Up to 3 points.**
  - A08 Air Quality Monitoring and Awareness: **Up to 2 points.**
- Thermal comfort
  - T03 Thermal Zoning: **Up to 2 points.**
  - T04 Individual Thermal Control: **Up to 2 points.**
  - T05 Radiant Thermal Control: **Up to 2 points.**
  - T06 Thermal Comfort Monitoring: **Up to 1 point.**
  - T07 Humidity Control: **Up to 1 point.**

## 2.9. Passivhaus

The Passivhaus Building Platform (PEP) is a non-profit association that promotes passive buildings in Spain through its delegations and is part of the International Passive House Association and EuroPHit. It is formed mainly by technicians and people related to the construction sector who are aware of buildings with high energy efficiency, minimum energy demand and high interior comfort.

The association is organised under an assembly system, where all individual members can participate and contribute to the work of disseminating this construction standard.

**Airzone systems could cooperate to achieve the goals of this association.**

## 3. Incentive Programs

Airzone systems cooperate to achieve punctuation in the following European incentive programs.

### 3.1. Ecobonus

The Italian Decree first introduced the Ecobonus 110% in 2020, a tax deduction package for anyone who has energy efficiency work done on existing buildings.

This benefit allowed homeowners to deduct 110% of their home renovation costs from their taxes, as long as the renovations were aimed at making buildings greener and more sustainable. This includes projects to improve energy efficiency, install solar-power systems, develop e-mobility infrastructure, or make buildings more resistant to earthquakes. The 110% tax deduction was valid on expenses incurred up until June 30, 2022.

Currently, with state expenses rising, the present government has announced — through the “*Decreto Aiuti Quater*” (Amendment to the Subsidies Decree) and the *Budget Law 2023* that it’s immediately scaling back the subsidy to 90%, and then will be gradually reducing it over the next few years (to 70% in 2024 and 65% in 2025).

**Airzone systems can cooperate to achieve this incentive.**

### 3.2. PREE Program

The Spanish PREE program was approved by the Council of Ministers, at the proposal of the Ministry for the Ecological Transition and the Demographic Challenge, through Royal Decree 737/2020. This Decree regulates the incentive program for energy rehabilitation works in existing buildings.

The aim of the PREE program is to give a boost to the sustainability of existing buildings in Spain. It will be carried out by replacing thermal generation facilities with fossil fuels by renewable sources such as biomass, geothermal, thermosolar, heat pumps, or renewable electricity generation for self-consumption. Also, through the incorporation of regulation and control technologies as well as the improvement of energy efficiency in lighting.

**Airzone systems can cooperate to achieve this incentive.**

### 3.3. Ma Prime Renov

To finance energy renovation work, the public authorities of France set up a financial aid on 1st of January 2020 in the form of an energy transition bonus, paid by the National Housing Agency (Anah). Ma Prime Renov’ is a building energy renovation aid extended to all French households in the scope of the government’s economic restart plan.

Created to replace a previous public aid, it operates according to the following principles:

- ‘Ma Prime Renov’ is accessible to all owners and co-owners, occupants or lessors.
- It is granted for heating, insulation, ventilation equipment and works and certain services.
- It must be requested before the work begins; it is paid at the end of the work.
- Its amount is modulated according to household income and the nature of the work.

**Airzone systems cooperate to achieve this incentive as a class IV and could cooperate as a class V with an OpenTherm gateway.**

### 3.4. Efficient Home Program 2020

The Efficient Home Program 2020 (Programa de Casa Eficiente 2020) aims to grant loans under favourable conditions for operations that promote the improvement of the



environmental performance of private residential buildings, in the field of energy and water efficiency, as well as in the management of urban waste. Interventions may affect the building envelope and its systems.

Owners of residential buildings or their fractions, as well as their respective condominiums, can apply. Buildings can be located anywhere in the national territory. Operations may concern private parts or common parts.

The Program is promoted by the Portuguese State and promoted by CPCI – Portuguese Confederation of Construction and Real Estate. Its execution has the technical support of APA – Portuguese Environment Agency, EPAL – Empresa Portuguesa das Águas Livres and ADENE – Energy Agency.

**Airzone systems can cooperate to achieve this incentive.**

### 3.5. IFRRU 2020 Program

IFRRU 2020 Program is a financial instrument designed to support investments in urban rehabilitation and energy efficiency throughout the national territory, whenever the buildings to be rehabilitated are located in an area defined by the Municipality (urban rehabilitation area – ARU).

This instrument supports the full rehabilitation of buildings (multi-family or houses) aged 30 years or more (or, in the case of less age, which demonstrate a level of conservation equal to or less than 2 years, determined under the terms of Decree-Law no. 266-B/2012, of December 31st).

To access IFRRU 2020, 3 steps are required:

- Request for a framing opinion to the City Council regarding the location of the property.
- Energy certificate of the property before the intervention prepared by a qualified SCE expert.
- Request for financing from selected banks.

**Airzone systems can cooperate to achieve this incentive.**

### 3.6. BEG

The Federal Subsidy for Efficient Buildings (BEG) operated by the German development bank is a tool derived from the Climate Action Program 2030 aiming to promote building renovation across the country. The BEG combines existing programs to promote energy efficiency and renewable energies in the building sector and supports, among other things, the use of new heating systems, the optimization of existing heating systems, measures on the building envelope and the use of optimized system technology.

The BEG consists of three sub-programs:

- Federal funding for efficient buildings - residential buildings (BEG WG).
- Federal funding for efficient buildings - non-residential buildings (BEG NWG).
- Federal funding for efficient buildings - individual measures (BEG EM).

**Airzone systems can cooperate to achieve this incentive.**