EUROPEAN REGULATION · EPBD 2024 · ISO 52120

BACS / EPBD 2024

What your clients will need — and how ADQUIO makes you their compliance partner

April 2025

1. Regulatory context

Why act now?

The European Energy Performance of Buildings Directive (EPBD, recast 2024) requires that non-residential buildings install BACS (Building Automation & Control Systems) that can be assessed under the EN ISO 52120-1 standard. This standard classifies the building's automation level into four functional categories: D, C, B, and A.

The transposition into national law is carried out by each EU/CEE Member State through its own legislative and regulatory process. The maximum deadline for transposition is **29 May 2026**. Until each country completes its transposition, the European deadlines should be treated as indicative and subject to confirmation under the applicable national legislation.

Power threshold	Indicative European deadline	Condition
> 290 kW*	From late 2024 (EU framework)	*Subject to transposition and national regulation*
> 70 kW*	Before 2029 (EU framework)	*Subject to transposition and national regulation*

**The >290 kW / >70 kW threshold is based on the building's useful rated thermal capacity (mainly heating, cooling, ventilation linked to these systems, and in some cases domestic hot water). Lighting does not count toward the 70 kW / 290 kW thresholds, but buildings above the threshold due to HVAC must also implement automatic lighting controls in non-residential areas.*

Key: The system is not certified as a product — the installation is demonstrated to enable a specific functional level of the building.

2. The four BACS classes according to EN ISO 52120-1

The standard assesses the building across four functional levels. Each class defines a set of capabilities that must be active in the installation:

Class	Level	Functional description	EPBD Status
D	**No automation**	Manual control or fixed timers. No centralized supervision. No dynamic adaptation.	❌ **Non-compliant with EPBD**
C	**Standard automation**	Programmable schedules, basic centralized management, zone control. Minimum compliance level for systems >70 kW.	✓ **Minimum compliance**
B	**Advanced automation**	Adjustment based on actual occupancy, demand-based control, continuous supervision and reporting, interoperability between subsystems.	★ **Recommended target**
A	**Predictive control and advanced optimization**	Multivariable predictive optimization, advanced coordination between subsystems, grid signal responsiveness (demand response). Does not require AI as such.	★★ **Highest level**

ADQUIO enables Class B and Class A functionality in the buildings where it is installed.

3. The 6 functional domains of ISO 52120

The standard assesses the building's functional level across six major domains. To achieve Class B or A, the requirements of each must be met:

Domain 01 · HVAC Control

- Automatic temperature adjustment based on actual space occupancy
- Demand-based control (not just fixed schedules)
- Adaptive and independent setpoints per zone
- Integration with external signals: outdoor temperature, CO_2 levels, humidity

Domain 02 · Lighting Control

- Automatic regulation by detected presence or absence
- Dimming adjustment based on available natural light
- Independent zone control
- Automatic shutdown in unoccupied zones

Domain 03 · Blind and Shading Management

- Automatic solar control to reduce thermal gains
- Coordination with HVAC and lighting systems
- Dynamic adjustment based on solar orientation and time of day

Domain 04 · Monitoring and Reporting

- Continuous and centralized supervision of all subsystems
- Historical log of consumption and events
- Automatic alerts for anomalies or deviations
- Data export in auditable format

Domain 05 · Energy Efficiency

- Actual consumption measurement per subsystem (submetering)
- Energy performance KPIs and historical comparisons
- Grid signal responsiveness (demand response)
- Detection of deviations from the baseline

Domain 06 · Interoperability

- Seamless communication between subsystems (HVAC, lighting, energy)
- Open protocol support: BACnet, Modbus, KNX, DALI, MQTT, Casambi
- Integration with third-party systems and different manufacturers
- API available for data export and integration with external platforms

4. How ADQUIO addresses each ISO 52120 domain

The following table covers the six functional domains of the standard in order, details the value each one contributes to BACS compliance, and specifies which ADQUIO component or capability addresses it:

ISO 52120 Domain	BACS Value Contributed	ADQUIO System that Addresses It
01 · HVAC Control	Automatic adjustment based on actual occupancy, adaptive setpoints per zone, and integration with external signals (CO_2, temperature, humidity). Key requirement for Class B.	Programmable logic engine + CO_2, occupancy, and temperature sensors. Multi-brand HVAC equipment control via BACnet, Modbus, and MQTT. Configurable automations per zone.
02 · Lighting Control	Automatic regulation by presence, dimming based on natural light, and shutdown in unoccupied zones. Independent zone control.	Native Casambi integration: presence and luminosity sensors, automatic dimming, scenes and schedules per zone. Also compatible with DALI.
03 · Blind and Shading Management	Automatic solar control coordinated with HVAC and lighting to reduce thermal gains and improve visual comfort.	Blind and louver actuator control via BACnet. Coordination logic with HVAC and lighting. Automatic adjustment based on solar schedule.
04 · Monitoring and Reporting	Continuous centralized supervision, historical consumption and event logs, automatic alerts, and data export for BACS audits.	Unified SCADA dashboard with cloud and local edge access. Configurable alarms, fully exportable historical data. Foundation for the BACS Report delivered by the partner to the qualified assessor.
05 · Energy Efficiency	Actual measurement per subsystem (submetering), performance KPIs, historical comparisons, and demand response capability.	PowerTrace: energy submetering per circuit or subsystem. Dashboard KPIs. Integration with meters via Modbus. Responsiveness to external price or grid signals.
06 · Interoperability	Communication between all subsystems, open protocol support, and API for integration with external platforms.	Native multi-brand: BACnet, Modbus, MQTT, DALI, Casambi. Edge + cloud server centralizing all subsystems. API available for integration with ESG or property management platforms.

ADQUIO is the only system in Spain that integrates Casambi with a complete BMS platform, natively covering all 6 functional domains of ISO 52120 within a single management environment.

5. Why act now? Benefits beyond compliance

Regulation creates the framework, but clients make decisions based on economic and strategic value. ADQUIO delivers concrete benefits across six dimensions:

1	**Reduction of energy consumption**	Adaptive control based on actual occupancy and coordination between subsystems reduces HVAC and lighting consumption by 20% to 40% compared to non-automated systems. Submetering identifies hidden inefficiencies that would otherwise go undetected.
2	**Lower operating costs**	Centralized supervision and automatic alarms reduce reactive maintenance visits. The facility manager operates the entire building from a single platform, without the need for multiple interfaces or vendors.
3	**Improved comfort**	Automatic adjustment of temperature, lighting, and air quality based on actual occupancy directly improves occupant well-being, with proven impact on productivity and satisfaction in work and retail environments.
4	**ESG audit readiness**	Real estate investment funds and large corporations require documented evidence of energy efficiency in their asset portfolios. ADQUIO automatically generates the data and reports needed to meet ESG, GRESB, and BREEAM criteria.
5	**Real estate asset appreciation**	A building with BACS Class B or A classification has higher market value, better green financing terms, and greater appeal to corporate tenants who require energy certifications from their landlords.
6	**Lower future regulatory risk**	Anticipating compliance before Spanish regulation becomes enforceable eliminates the risk of penalties, emergency investments under pressure, and loss of contracts with clients who require compliant suppliers.

6. The path to compliance: how it works in practice

The ADQUIO compliance model does not require the manufacturer to obtain any seal or certification. The path is as follows:

1 **ADQUIO Installation**
The partner installs and configures ADQUIO in the building, activating HVAC control, lighting, blinds, and energy monitoring functions.

2 **Generation of the exportable BACS Report**
The platform automatically generates a report mapping the system's active functions against EN ISO 52120 requirements. This document serves as the supporting documentation for the audit.

3 **Delivery to the Facility Manager**
The partner delivers the report to the building owner or manager. ADQUIO makes the partner the FM's best ally in any accreditation process.

4 **Submission to the qualified assessor / auditor**
The auditor assesses the building based on ADQUIO's documentation and issues the corresponding BACS classification (Clase B o A). The qualified assessor is registered in the future National Register of Qualified Assessors (Royal Decree in progress).

ADQUIO does not replace the auditor — it provides all the documentation they need. This turns regulatory compliance into a commercial advantage, not a problem.

Stop selling components. Start selling compliance.

ADQUIO turns your Casambi projects into a compliance asset — as a full BMS or integrated with existing systems.

Request your free assessment: https://adquio.com/contact/