2024 EPBD BACS COMPLIANCE SELF-DECLARATION FOR NON-RESIDENTIAL BUILDINGS

BUILDING INFORMATION

BUILDING NAME	
BUILDING ADDRESS	
TOTAL FLOOR AREA	
BUILDING OWNERS NAME	
OWNERS SIGNATURE AND DATE	
RESPONSIBLE EXPERT	
EXPERTS SIGNATURE AND DATE	

SELF-DECLARATION

STEP 1: The BACS compliance verification shall be conducted only if the effective rated output for heating/air-conditioning systems or systems for combined space heating/air-conditioning and ventilation in the building is over 290kW by 31 December 2024 or over 70 kW by 31 December 2029.					
ID	SELF-DECLARATION COMPLIANCE QUESTIONS (answered by Building Owner)	RESPONSE	SELF-DECLARATION COMPLIANCE SUPPORTING RECORDS (provided by Building Owner)	Boundary Conditions / PREREQUISITES for the BACS capabilities to be effective	COMPLIANCE VERIFICATION CHECKS (conducted by Building Inspector)
I	**Information Section:** 290 kW / 70 kW COVERAGE				
I1	"What is the effective rated output (calorific output as per EPBD) of the Heating equipment in the building Heating systems (output of all heat generators in the building including main Heating equipment in plantrooms, e.g. boiler, solar heat system, CHP and heat-generating terminal equipment in rooms, e.g. electric direct heater)? NOTE: Every heat generator that adds heat to the building space regardless of its location (generation in main HVAC plant, distribution, and emission in the room) should be added in the sum for the output."	<kW>	PDF list of Heating system main equipment with indication of the maximum calorific output, expressed in kW, per piece of equipment		Check equipment nameplates of main Heating system equipment in main HVAC plant or the building Operation & Maintenance Manual
I2	"What is the effective rated output (calorific output as per EPBD) of the Air-conditioning systems in the building (output of all cold generators in the building including main cooling equipment in plantrooms, e.g. chiller, heat-pump, and cooling-generating terminal equipment in rooms)? NOTE: Every cooling generator that adds cooling to the building space regardless of its location (generation in main plant, distribution and emission in the room) should be added in the sum for the output."	<kW>	PDF list of Air-conditioning system main equipment with indication of the maximum calorific output, expressed in kW, per piece of equipment		Check equipment nameplates of main Air-conditioning systems equipment in HVAC main plant or the building Operation & Maintenance Manual

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I3	What are the 3 representative rooms in this building in which the heating, cooling and/or ventilation is/are BACS controlled? Please enter their types, names, and floor area in the Response column. NOTE: Representative rooms/spaces should represent the room/space types that are the most typical for the inspected building, e.g. an individual office, an open office zone and a meeting room in an office building.	Room 1: type, name, size in m2 Room 2: type, name, size in m2 Room 3: type, name, size in m2	PDF floor plans with marked representative rooms		Check PDF floor plans where the 3 representative rooms are marked

	STEP 2: The compliance verification shall be conducted only if building automation and control systems (BACS) capabilities apply to a considerable extent in the building				
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S	**Starting Section:** BACS COVERAGE				
S1	Is 80% of the effective rated output in kW for Heating systems in the building, both main equipment and terminal equipment, controlled by BACS - relates to the figure in I1	YES ☐ NO ☐	Indicate in the list of I1 which heat-generating equipment/devices are integrated in BACS and provide corresponding diagrams of controls	BACS should control a minimum 80% of the Heating systems in the building for it to have any effect on the heating energy performance	Spot-check BACS heating controls equipment in HVAC main plant to confirm the information provided by the Building Owner
S2	Is 80% of the effective rated output in kW for Air-Conditioning systems in the building, both main equipment and terminal equipment, controlled by BACS - relates to the figure in I2	YES ☐ NO ☐	Indicate in the list of I2 which cold-generating equipment/devices are integrated in BACS and provide corresponding diagrams of controls	BACS should control a minimum 80% of the Air-conditioning systems in the building for it to have any effect on the heating energy performance To count stand-alone split units in the 80% these units should be at least monitored by BACS, e.g. energy consumption, status, interlock with heating control	Check BACS air-conditioning controls equipment in HVAC main plant to confirm the information provided by the Building Owner
S3	Is 80% of the nominal electrical output in kW for Ventilation systems in the building, both main equipment and terminal equipment, controlled by BACS?	YES ☐ NO ☐	Indicate in the list of all ventilation equipment/devices with corresponding electrical output in KW which of them are integrated in BACS and provide corresponding diagrams of controls	BACS should control a minimum 80% of the Ventilation systems in the building for it to have any effect on the ventilation energy performance Stand-alone occupancy-driven control of exhaust fans (through presence detectors) should be included in the 80%, e.g. toilet exhaust fans	check BACS ventilation controls equipment in HVAC main plant to confirm the information provided by the Building Owner

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S4	Does 80% of the building floor area designed for continuous occupancy during building operating hours (rooms/zones) have room/zone automation controls integrated into BACS?	YES ☐ NO ☐	PDF floor plans with marked individual room controls	BACS should control a minimum 80% of the building floor area designed for continuous occupancy during building operating hours for it to have any effect on the building energy performance and IEQ Rooms/zones that are designed for continuous occupancy during operating hours shall have controls equipment that meet at least class B according to EN ISO 52120 .	Check the availability of PDF floor plans with marked individual room controls

STEP 3: The building automation and control systems shall be CAPABLE of:					
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(a)	CONTINUOUSLY MONITORING, LOGGING, ANALYSING and ALLOWING for ADJUSTING ENERGY USAGE				
A1	Is the building energy meter data integrated and analysed in BACS with at least hourly data granularity to identify energy optimisation opportunities in the building? (according to Class B: 7.4.1 Trending functions and consumption determination) Including as a minimum the following total energy data for: - total building thermal energy for space heating, and - total building thermal energy for space cooling and - total building electrical energy	YES ☐ NO ☐	PDF energy consumption reports for building electricity, heating and cooling consumption respectively that compare energy values over different time periods, e.g. cumulated daily values from last month (before the inspection) compared to the daily values for the same month from last year	Energy metering should cover a minimum 80% of total HVAC building energy consumption. A process to audit/validate/certify the meters' readings should be in place. The energy data measuring systems relevant for HVAC shall be regularly checked for their function and accuracy. Monitoring and logging are prerequisites for the analysing capability. Data should be retained for historical analysis, so trends can be observed.	Check the availability of energy consumption reports that compare current values with previous periods and indicate deviations

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A2	Is HVAC energy-relevant process data monitored and analysed to detect recurring energy wasting deviations and to trigger respective corrective actions?	YES ☐ NO ☐	"PDF snapshot of output used for analytics with 2 example views and a rationale on how corrective actions can be derived from it. Example 1. A graph with runtime values for main HVAC equipment vs room occupancy times for the 3 representative rooms of the last 6 months before the planned inspection, ideally 1-minute log interval Example 2. A graph including room setpoint +/- deadband, room temperature values, action/control signal on the terminal unit (or the equipment controlling the temperature) and room occupancy for the 3 representative rooms for four 24 hour periods (one in each season), ideally 1 minute log interval OR SIMILAR examples accompanied with an explanation of how this proof is similar in fulfilling the specific requirement"	There should be a process in place to regularly analyse the information provided by BACS and track corrective actions. Additional information on occupant feedback/behaviour should be considered to define corrective actions.	Check the availability of example snapshots for consistency and continuity
A3	Does BACS allow adjustment of setpoints (fixed or calculated) of all relevant supplying HVAC plants to optimize demand-driven operation?	YES ☐ NO ☐	Print screen/photo of the BACS interface that shows the possibility for setpoint adjustment from a central GUI (e.g. work station, web operation; room operating units are excluded) for HVAC main plant (main generation and distribution equipment), combined with a clear naming /description of the setpoints linked to energy.		Check the availability of selected print screens for main HVAC plants that clearly show setpoint adjustment possibilities

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A4	Is there a runtime management as per EN ISO 52120 class A: 7.2.2 Individual setting following a predefined time schedule; adaptation from a central point (e.g. workstation, web operation; room operating units are excluded)?	YES ☐ NO ☐	Print screens showing that runtime schedules for HVAC equipment could be adjusted. The number of print screens depends on the HVAC systems present in the specific building (one per system): Example 1. Adjusting runtime of heating system including the runtime schedule for at least 1 heat generator Example 2. Adjusting runtime of air-conditioning system including the runtime schedule for at least 1 cooling generator Example 3. Adjusting runtime of ventilation system including the runtime schedule for at least 1 major fan Example 4. Adjusting runtime of room HVAC equipment (e.g. FCU, VRF unit) for at least one of the representative rooms		Check the availability of selected print screens for main HVAC plants that clearly show runtime management possibilities
A5	Is there a setpoint adjustment or reset from a central point (e.g. workstation, web operation) for individual spaces? (according to EN ISO 52120 class B 7.1.2)	YES ☐ NO ☐	Print screens from the BACS User Interface where the temperature setpoint for cooling, the temperature setpoint for heating and the ventilation setpoint (CO2 or air flow), for the selected representative rooms are clearly visible.	eu.bac recommend applying EN EN ISO 52120 Class A which ensures automatic reset back to the present setpoint.	Check the availability of selected print screens for the representative rooms that clearly show setpoint adjustment possibilities

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(b)	BENCHMARKING the building's energy efficiency, DETECTING LOSSES in efficiency of technical building systems, and INFORMING THE PERSON RESPONSIBLE for technical building management about opportunities for EE improvement				
B1	Is the building's HVAC plant energy consumption data or its energy consumption data recorded at least once a day and benchmarked to defined reference objects (e.g. different HVAC plant in the same building) or reference time intervals for the same building (e.g. monthly using TBM)?	YES ☐ NO ☐	PDF report that clearly shows that data is collected regularly, including benchmarking data, for at least the last month (preceding the inspection). Data can be presented as a table with numeric values, if it includes the time stamp for each reading, or a in a graph. Example 1: A report that benchmarks HVAC plant energy consumption data against a target value(s) Example 2: PDF weather-normalised energy reports (HDD and CDD) for the last 12 months compared to the previous year or a baseline year or a target value. OR SIMILAR reports accompanied with an explanation of how this alternative proof fulfils the specific requirement	Documented rationale and justification that collected data and reference data are comparable (e.g. normalisation, similarities, previous time intervals, exceptions) should be available.	Check the availability of an HVAC plant energy consumption report that compares current values with previous periods
B2	Is there energy-relevant process data from HVAC sub-systems that is used to analyse deviations compared to defined benchmarks (e.g. big deviation from design COP) using TBM?	YES ☐ NO ☐	PDF report for at least the last month (preceding the inspection) containing energy performance data for relevant HVAC sub-systems: Example 1: A report that compares the actual efficiency of heating/cooling generators, e.g. “coefficient of performance”, with the design COP; Example 2: A report that compares the measured supply and return water temperature difference for a heat emitter with the design temperature difference; OR SIMILAR reports accompanied with an explanation of how this alternative proof fulfils the specific requirement		Check the availability of benchmark report for a significant HVAC sub-system (consuming over 15% of total building energy consumption) that compares current values with defined benchmarks

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B3	Is there automatic detection of HVAC equipment running in manual override/exception mode logged and flagged centrally?	YES ☐ NO ☐	PDF report showing manual override events for main HVAC plant items. It is not necessary to cover a specific period (the building may be running always in auto) but the report must show at least the last test run on site or the commissioning of the BACS		Check the availability of a record (e.g. use activity log print-out) for the last 3 examples of when HVAC equipment was set in manual operation for more than 24hrs
B4	Is there automatic detection of faults in HVAC equipment that is it logged and flagged centrally?	YES ☐ NO ☐	A PDF report showing fault alarms for main HVAC plant items. It is not necessary to cover a specific period (the building may always be running in auto), but the report must show at least the last test run on site or the commissioning of the BACS. The proof depends on the HVAC systems present in the specific building - equipment faults in heating system including for at least 1 heat generator - equipment faults in air-conditioning system including the equipment fault for at least 1 cooling generator - equipment faults in ventilation system including the equipment fault for at least 1 major fan - equipment faults of room HVAC equipment for at least 1 of the representative rooms		Check the availability of a record showing fault alarms related to main HVAC plant equipment were reported by the BACS

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B5	Is there automatic detection of loss in efficiency in the HVAC-related TBS with central indication of detected faults and alarms/diagnosing functions that is used to derive corrective actions and fix recurring suboptimal energy performance? (according to EN ISO 52120 7.3.2)	YES ☐ NO ☐	PDF report showing relevant HVAC system events/alarms: Example 1: A report that notifies deviations of current efficiency for heating/cooling generator, e.g. "coefficient of performance", from its efficiency in the last heating/cooling season; Example 2: A report that notifies deviations in pressure drop across a main AHU; OR SIMILAR reports accompanied with an explanation of how this alternative proof fulfils the specific requirement		Check the availability of an event report for considerable deviations in the operating parameters of a main HVAC sub-system
B6	Is the person responsible for TBM informed by BACS about any main HVAC equipment faults?	YES ☐ NO ☐	A PDF extract/print screen from Alarm/Activity log, provided by the BACS, that shows the last 3 examples when the BACS system sent a message/alarm about faults on main HVAC equipment to the responsible person, also including the status of this alarm (e.g. acknowledged status)	There has to be a nominated responsible person(s) for the operation and optimization of the TBM. There should be a process in place to inform & involve the nominated Building operators instantly to implement corrective actions for HVAC equipment faults	Check the availability of BACS activity log record

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B7	Is the person responsible for TBM/ responsible Building Operator reliably and quickly informed by BACS about energy waste and/or comfort compromised operation of HVAC systems with an indication of where/how to take corrective action?	YES ☐ NO ☐	A PDF extract/print screen from Alarm/Activity log, provided by the BACS, that shows the last 3 examples when the BACS system sent a message/alarm about deviations from expected energy performance of HVAC and / or indoor comfort conditions to the responsible person, also including the status of this alarm (e.g. acknowledged status) Examples for Energy Waste: 1. Notification of pre-defined % deviation (for a pre-defined duration) between the measured supply and return water temperature difference for a heating coil and the design temperature difference; 2. Notification of pre-defined % deviation (for a pre-defined duration) between the actual efficiency of heating/cooling generators, e.g. “coefficient of performance”, and the design efficiency 3. Notification related to any of the evidence provided in the supporting records used in B1-B6 checks Examples for Comfort-Compromised Operation: 1. Notification of deviations in space temperature outside of operator-defined comfort range. 2. Notification of deviations in CO2 level above the operator-defined comfort acceptable limit.	There must be a nominated responsible person(s) for the operation and optimization of the TBM. There should be a process in place to inform & involve the nominated Building operator instantly to implement corrective actions to maintain and improve EE	Check the availability of BACS activity log record

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(c)	ALLOWING COMMUNICATION with CONNECTED TBS and OTHER APPLIANCES inside the building, and BEING INTEROPERABLE with TBS across DIFFERENT TYPES of PROPRIETARY TECHNOLOGIES, DEVICES and MANUFACTURERS				
C1	Can BACS manage relevant information with other TBS and devices, and enable "global" cross TBS optimization strategies while improving operation at "individual" equipment level?	YES ☐ NO ☐	A PDF report of an example that shows coordination in the operation of 2 or more individual systems/devices: Example 1: Interlock between heating and cooling control to prevent simultaneous heating and cooling Example 2: Combined light/blind/HVAC control in rooms Example 3: Sequencing of different heat/cold generators OR SIMILAR reports accompanied with an explanation of how this alternative proof fulfils the specific requirement		Check the availability of an example BACS report that proves exchange of information between BACS connected systems / devices
C2	Does BACS control the start/stop of HVAC-related systems / devices?	YES ☐ NO ☐	A PDF print screen/photo of BACS connected and controlled equipment / devices, e.g. chiller, fan coil unit, lighting system, solar protection system, solar heat system, CHP If possible, provide an example with different proprietary technologies. Example: Re-use the check for A4, and add the make/model number of the system/device, e.g. air handling unit, domestic hot water system, room controls from different manufacturer that BACS interfaces with	Only connected HVAC-related systems and appliances in the sense of EPBD are in scope – refer to the Starting section S	Check the availability of selected print screens that show BACS control of various systems / devices

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C3	Does BACS have the possibility potential to set and modify setpoints for HVAC-related systems / devices?	YES ☐ NO ☐	A PDF print screen/photo of BACS interface that shows the possibility for setpoint adjustment for BACS connected and controlled systems / devices, e.g. air handling unit, domestic hot water system, room controls by different manufacturer Example: Re-use the check for A5, and add the make/model number of the system/device, e.g. air handling unit, domestic hot water system, room controls from different manufacturer that BACS interfaces with	Only connected HVAC-related systems and appliances in the sense of EPBD are in scope – refer to the Starting section S	Check the availability of selected print screens that clearly show setpoint adjustment possibilities

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(d)	by 29 May 2026 MONITORING of INDOOR ENVIRONMENTAL QUALITY				
D1	Is the building IEQ-related data from 80% of the building floor area designed for continuous occupancy during building operating hours (rooms/zones) integrated with BACS with at least hourly data granularity to measure, display and report current values? (according to Class B: 7.4.1 Trending functions and consumption determination) including, as a minimum, the following IEQ values: - temperature, and - humidity, and - CO2 levels as a proxy for the presence of contaminants	YES ☐ NO ☐	Paper print-out or electronic, printable reports from last week (before the inspection) for temperature, humidity, and CO2 levels, respectively, which clearly show the comparison of measured values to the associated setpoints for temperature and humidity (hourly values) and CO2 levels (15-minute values) for the 3 representative rooms.	IEQ sensor data should cover a minimum of 80% of the building floor area designed for continuous occupancy during building operating hours (rooms/zones). A process to validate the sensor readings should be in place. The IEQ measuring devices shall be regularly checked for their function and accuracy. Monitoring and logging are prerequisites for analysis and optimisation. Data should be retained for historical analysis so trends can be observed.	Check the availability of IEQ reports that compare measured values with setpoints.