EPBD-SRI-Oppportunity for Building technology
SRI an indicator for optimise energy use, analyses and comfort

Alfred Freitag Vice President eu.bac
The voice of European manufacturers in the home/building automation sector

Our vision is a world where anyone lives in buildings that are smart, decarbonised and efficient
Agenda

- All i need is the air that I breath and to….

Know:
- what I breath…
- what is in the EPBD revision
- what is the SRI…
- what is the SRI good for…
- why EN ISO 52120-1:2021
All I need is the air that I breathe?
All I need is to know what I breathe!
All I need is **to know what is** in the EPBD

**Objectives of the EPBD revision**

- **Climate Target Plan** by 2030
  - reduce GHG emissions by 55%
  - integrate 32% RES
  - reduce final energy consumption by 14%
- **Renovation Wave** by 2030
  - renovate 35 million units
  - double and deepen renovation
  - establish minimum standards
  - harmonise EPC classes

**Twofold objective:**

- Provide a **long-term vision** for buildings and ensure an adequate contribution to achieving climate neutrality in 2050
- Set an **enabling framework** for an orderly transition by empowering all levels of action
Main changes compared to 2018 EPBD

New buildings

- From Nearly zero energy to zero emission building
  - Update based on benchmarks per climatic zones, to be applied by 2030 (2027 for public buildings)
  - Stronger incentive to on-site renewables, efficient district heating and energy communities
  - Zero-emission buildings become the level to be attained by a deep renovation as of 2030 and the vision for the building stock in 2050
- **IAQ requirement**
- The life-cycle Global Warming Potential (GWP) of new buildings will have to be calculated as of 2030 in accordance with the Level(s) framework, informing on whole life-cycle carbon emissions (2027 for large buildings)
- Strengthened requirements for recharging of e-vehicles, and mandatory bicycle parking in new building

Building Automation Control for:

- Non-Residential buildings with effective rated output over 290 kW by 31/12/2024 and over 70 kW by 31/12/2029
- Larger multifamily residential with effective rated output over 70 kW from 31/12/2024

All i need is to know what is in the EPBD
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• Definition of „deep renovation“
• Strengthened requirements for recharging of e-vehicles in case of major renovation
• Stronger provisions on the removal of obstacles and barriers to renovation
• Member States must not subsidise fossil-fuel boilers as of 2027.

• **IAQ requirements upon major renovation**

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**Existing buildings**

- **Minimum Energy Performance Standards:**
  - Union-wide MEPS to phase out worst-performing buildings
  - Public and other non-residential buildings: at least EPC class F by 2027 & EPC class E by 2030
  - Residential buildings: at least EPC class F by 2030 & EPC class E by 2033
- MS to set up timelines for further improvement of their building stock in their building renovation plans
- Supporting framework with a focus on vulnerable households and monitoring of social impact
- **National Building Renovation Plans (replacing the long-term renovation strategies)**
  - BRP to be integrated into the NECP process, except the first plan
  - Common template with only national goals and key mandatory indicator, several elements opening to other dimensions beyond energy remain voluntary (accessibility, safety,...)
All i need is to know what is in the EPBD

- §1: Set Requirements for IEQ
- § 2: Definitions on IEQ
- § 3: Renovations plans including IEQ
- § 5: including IEQ in minimum requirements
- § 7+8: IEQ in new and exiting buildings
- § 10: Including IEQ in Renovation Passport
- § 11: Monitoring and regulation of IEQ
- § 11a: Indoor Environment Quality
- § 16: Implement IEQ in EPC
- § 20: Implement IEQ in inspections

Image source: shorturl.at/ouxH7
All i need is to know what is in the EPBD

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Article 2 first paragraph, point (57a) Indoor environmental quality means the result of an assessment inside a building bases upon parameters such as relating to **the temperature, humidity, ventilation rate and presence of contaminants**, influencing the health and wellbeing of its occupants.
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3. Member States shall require non-residential zero-emission buildings to be equipped with **measuring and control devices for the monitoring and regulation of indoor air quality**.

In existing buildings, the installation of such devices shall be required, where technically and economically feasible, when a building undergoes a major renovation.
Main provisions on Information tools

- Energy Performance Certificates (EPC)
  - by 2025 all EPC must be harmonised
  - with energy and GHG indicators
  - validity of EPC of the lower D to G classes reduced to five years
- GHG become part of the metrics of the EPBD
- Inspections
  - Residential and non-residential split
  - Ventilation systems (sizing and optimization)
- New provisions to ensure access to buildings data,
  - **The Smart Readiness Indicator (SRI) is required for large non-residential buildings as of 2026**
All i need is **to know what is** the SRI...
Article 2 first paragraph, point (57a)
Indoor environmental quality means the result of an assessment inside a building bases upon parameters such as relating to the temperature, humidity, ventilation rate and presence of contaminants, influencing the health and wellbeing of its occupants.
All I need is **to know what is the SRI...**

<table>
<thead>
<tr>
<th>Domain</th>
<th>Code</th>
<th>Service group</th>
<th>Functionality level 0 (as non-smart default)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ventilation</td>
<td>V-1a</td>
<td>Air flow control</td>
<td>Supply air flow control at the room level</td>
</tr>
<tr>
<td>Ventilation</td>
<td>V-1c</td>
<td>Air flow or pressure control at the air handler level</td>
<td>No automatic control: Continuously supplies of air flow for a maximum load of all rooms</td>
</tr>
<tr>
<td>Ventilation</td>
<td>V-2a</td>
<td>Air temperature control</td>
<td>Heat recovery control: prevention of overheating</td>
</tr>
<tr>
<td>Ventilation</td>
<td>V-2c</td>
<td>Air temperature control</td>
<td>Supply air temperature control at the air handling unit level</td>
</tr>
<tr>
<td>Ventilation</td>
<td>V-2d</td>
<td>Free cooling</td>
<td>Free cooling with mechanical ventilation system</td>
</tr>
</tbody>
</table>

**Service group: Air flow control**

**Smart-ready service: Supply air-flow control at the room-level**

- **Clock control**
  - 0 (non-smart default)
  - 1
  - 2
  - 3
  - 4 (maximum smartness)

**Central demand control based on air quality sensors (CO2, VOC, humidity, ...)** with local flow from/to the zone regulated by dampers

**Local demand control**

All I need is **to know what is the SRI...**
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<table>
<thead>
<tr>
<th>Level</th>
<th>Energy efficiency</th>
<th>Maintenance and fault prediction</th>
<th>Comfort</th>
<th>Convenience</th>
<th>Health, well-being and accessibility</th>
<th>Information to occupants</th>
<th>Energy flexibility and storage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level 0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<tr>
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<td>1</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Level 2</td>
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<td>2</td>
<td>2</td>
<td>2</td>
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<td>Level 3</td>
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<tr>
<td>Level 4</td>
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<td>3</td>
<td>3</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Central demand control based on air quality sensors (CO2, VOC, humidity, ...)

3
All I need is to know what is the SRI...
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You can find factsheets and use cases on the SRI implementation tools page on the European Commission's homepage.
All I need is **to know** is what the SRI is good for...

1. In compliance with the upcoming law!
   - 1st EPBD 2018 SRI is voluntary
   - 2nd EPBD 2021 revision: The Smart Readiness Indicator (SRI) is required for large non-residential buildings as of 2026
   - Tests underway in 8 EU countries

2. Increase the value of your real estate

**IMPROVEMENT POTENTIAL:**
To increase the overall SRI score from **40%** to **70%**:
All I need is to know is what the SRI is good for

3. Basis for the ESG sustainability reporting

IEQ = Swiss Labour Act
Temp. 22-26°C,
IAQ 1’000ppm CO2
40-60% r.H
Light 550 lx, Akustik <65 dB(A
All i need is to know is the EN ISO 52120-1:2021

Building owners and design engineers, defining the functions to be implemented for a given new building or a renovated existing building.

The SRI refers to the functions in EN 15232 New EN ISO 52120-1:2021

Public authorities, defining inspection procedures of technical systems as well as inspectors applying these procedures to check if the level of BACS and TBM functions implemented are appropriate.
All I need is **to know** is the EN ISO 52120-1:2021

EN ISO 5210-1:2021 = No more: What is building automation?

### Table 6 — Function list and assignment to BAC efficiency classes

<table>
<thead>
<tr>
<th>Definition of classes</th>
<th>Residential</th>
<th>Non residential</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>D</td>
<td>C</td>
</tr>
<tr>
<td><strong>Automatic control</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0 No automatic control</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>1 Central automatic control</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 Individual room control</td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>3 Individual modulating room control with communication</td>
<td>x</td>
<td>x</td>
</tr>
</tbody>
</table>

- In case of slow reacting heat and cool emission systems, for example, floor heating, wall heating, etc., functions 1.1.3 and 3.1.3 are allocated to BAC class 6.
- In residential buildings, it is usually applied only to public areas (e.g. stair cases, corridors, etc.).
All I need is to get the EN ISO 52120-1:2021

Better today than tomorrow!
Knowledge is power, action makes winners.

Success is the result of action!

Good luck!