Guidance for the EPBD recast

Opportunities for ventilative cooling

4/11/2025

Yves Lambert

venticool

the platform for resilient ventilative cooling

EPBD implementation contributes to

- Energy security and independence
- Reduced grid investment needs
- Grid stability

- Lower energy bills & reduced energy poverty
- Healthier living & working conditions
- New local jobs creation
- Affordable housing

- Lower energy consumption
- Reduced emissions in the building sector
- Climate, energy efficiency and renewable targets

EPBD recast timeline

8 May 2024
Publication in Official Journal - entry into force: **28 May 2024**

1 January 2025
Transposition deadline for Article 17(15) on phasing out financial incentives for the installation of boilers powered by fossil fuels

30 June 2025
EPBD implementation support package

31 Dec. 2025
EU countries submit their draft national building renovation plans

29 May 2026
Transposition date (24 months after EPBD entry into force)

31 Dec. 2026
EU countries submit their final national building renovation plans

EPBD recast

The EPBD recast now explicitly links building performance to **climate resilience**, aiming to:

- **Reduce vulnerability** to heatwaves, energy poverty, and fossil fuel dependency.
- Encourage **adaptive design** to cope with future climate conditions, including extreme weather events and energy supply disruptions.
- IEQ is now a **core metric** in assessing building performance, with key **p**arameters:
  - **Thermal comfort** (temperature, humidity)
  - **Air quality** (ventilation, pollutants)

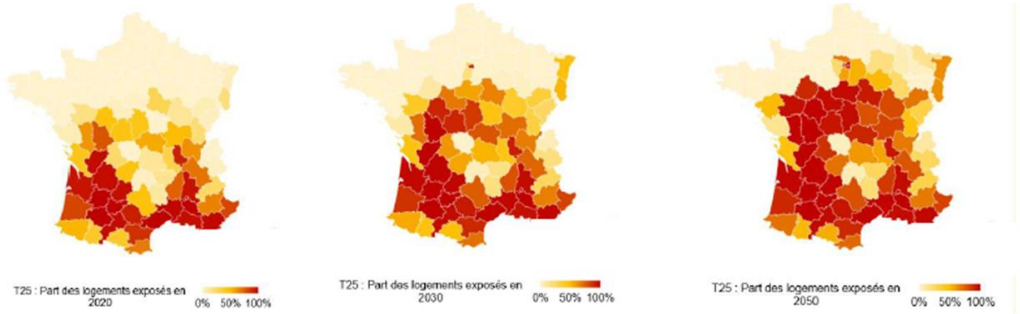
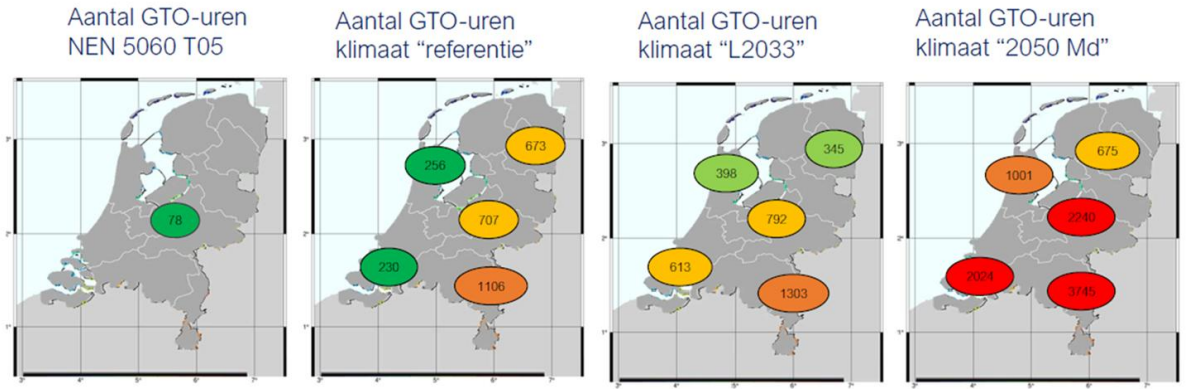


Figure 4 : Part des logements exposés à au moins 60 jours chauds par an par département



EPBD – Introduction of IEQ

The 2024 recast of the Energy Performance of Buildings Directive (EPBD) introduces new provisions for indoor environmental quality (IEQ) which implementation in national regulations may require substantial effort.
The EPBD recast text mentions Indoor Environmental Quality 22 times, underscoring its central role in future building standards and renovation strategies. These include:

- New definition for IEQ in Article 2(66) according to which a minimum scope of IEQ addresses thermal comfort and ventilation/indoor air quality domains.
- New principle of optimal indoor environmental quality.
- Revised Articles 7 and 8 for new and existing buildings stress IEQ for both new buildings and major renovations by stating that the issues of optimal indoor environmental quality shall be addressed.
- Article 13 calls to establish national IEQ requirements:
  “Member States shall set requirements for the implementation of adequate indoor environmental quality standards in buildings in order to maintain a healthy indoor climate.” These requirements may be referred when recommendations to improve IEQ are provided in EPC’s which is a new provision in Article 19(5).
- Article 19 requires that the energy performance certificates include recommendations for the improvement of IEQ.

EPBD Implementation support package

OBJECTIVE To help EU countries **transpose and implement** the directive into national law

Developed in close cooperation with Member States, considering the input from stakeholders

CONSISTS OF

Secondary legislation package	• **Delegated Regulation** revising the methodological framework for calculating **cost-optimal levels** and accompanying **guidelines** • **Implementing regulation** on the transfer of information from national databases to the **EU Building Stock Observatory**
Guidance package	• **13 annexes** dedicated to specific topics • Provides **interpretative and practical** guidance on new or updated provisions
Templates	• Supporting the preparation of the **National Building Renovation Plans**

Annexes: Guidance documents

- Minimum energy performance standards for non-residential buildings and trajectories for progressive renovation of residential buildings
- Financing and one-stop shops
- Energy performance certificates and independent control systems
- Renovation passports
- Energy performance databases
- Data exchange

- Zero-emission buildings
- Solar energy in buildings
- Sustainable mobility
- Technical building systems, indoor environmental quality and inspections
- Fossil fuel boilers
- Energy performance calculation methodology
  + cost-optimality
- Global warming potential

- Phasing out incentives for fossil fuel boilers *(guidance already adopted in October 2024)*

Link to texts

EPBD - IEQ

Official Journal
of the European Union

EN
L series

2024/1275

8.5.2024

DIRECTIVE (EU) 2024/1275 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL

of 24 April 2024

on the energy performance of buildings

(recast)

Article 1 (p. 14/68)

This Directive promotes the improvement of the energy performance of buildings and the reduction of greenhouse gas emissions from buildings within the Union, with a view to achieving a zero-emission building stock by 2050, taking into account the outdoor climatic conditions, the local conditions, the requirements for indoor environmental quality, and cost-effectiveness.

Article 2 (p. 19/68)

Definitions

For the purposes of this Directive, the following definitions apply:

(66) 'indoor environmental quality' means the result of an assessment of the conditions inside a building that influence the health and wellbeing of its occupants, based upon parameters such as those relating to the temperature, humidity, ventilation rate and presence of contaminants.

EPBD – Guidance documents
Technial Building Systems (TBS)

Brussels, 30.6.2025
C(2025) 4132 final

ANNEX 10

ANNEX

to the

COMMUNICATION TO THE COMMISSION

Approval of the content of the draft Commission Notice providing guidance on new or substantially modified provisions of the recast Energy Performance of Buildings Directive (EU) 2024/1275

Technical building systems, indoor environmental quality and inspections (Articles 13, 23 and 24)

3. INDOOR ENVIRONMENTAL QUALITY (p. 17/48)

The concept of optimal indoor environmental quality is introduced in the recast EPBD.
This concept must be taken into account when setting minimum energy performance requirements, in order to avoid possible negative effects, such as inadequate ventilation, and it must be addressed in relation to new buildings.
Member States must address, also in relation to buildings undergoing major renovation, the issues of indoor environmental quality. In this case 'optimal' is not mentioned, leaving scope for Member States to set higher ambition in the IEQ requirements for new buildings than for existing ones.
These provisions concern IEQ in the design phase, resulting in the obligation to set requirements for IAQ and thermal comfort in national and regional regulations for new buildings and major renovations, if they have not yet been set.

EPBD – Climate change

Official Journal
of the European Union

EN
L series

2024/1275

8.5.2024

DIRECTIVE (EU) 2024/1275 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL

of 24 April 2024

on the energy performance of buildings

(recast)

Article 7 (p. 23/68)

New buildings

6. Member States shall address, in relation to new buildings, the issues of optimal indoor environmental quality, adaptation to climate change, fire safety, risks related to intense seismic activity and accessibility for persons with disabilities. Member States shall also address carbon removals associated to carbon storage in or on buildings.

Article 8 (p. 24/68)

Existing buildings

3. Member States shall, in relation to buildings undergoing major renovation, encourage high-efficiency alternative systems, in so far as technically, functionally and economically feasible. Member States shall address, in relation to buildings undergoing major renovation, the issues of indoor environmental quality, adaptation to climate change, fire safety, risks related to intense seismic activity, the removal of hazardous substances including asbestos and accessibility for persons with disabilities.

EPBD – Guidance documents TBS

Brussels, 30.6.2025
C(2025) 4132 final

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Technical building systems, indoor environmental quality and inspections (Articles 13, 23 and 24)

3.4. Adaptation to climate change and extreme outdoor conditions (p.21/36)

With the rise of global temperatures, measures to reduce indoor temperatures by design (e.g. adjusting the orientation of facades to reduce direct sunlight, using external shading, and using natural ventilation) will become increasingly important. These elements have a significant effect on indoor conditions and therefore on indoor environmental quality.

Member States may address the issues of adaptation to climate change by requiring use of outdoor climate conditions and their future changes according to best available climate projections (e.g. IPCC models for climate change, heating and cooling degree days – HDD and CDD – projections, etc.) when assessing energy performance of buildings and their ability to maintain indoor comfort requirements. A heat stress assessment performed with respect to extreme conditions may also be required as part of the design process.

EPBD – Guidance documents TBS/Ventilative Cooling

Brussels, 30.6.2025
C(2025) 4132 final

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Technical building systems, indoor environmental quality and inspections (Articles 13, 23 and 24)

3.4. Adaptation to climate change and extreme outdoor conditions (p.22/36)

Advice for the selection, implementation, commissioning, and operation of passive and active cooling systems with regards to maintaining comfort and energy efficiency are provided by IEA EBC Annex 8050 and REHVA51, for example. Numerous passive cooling solutions such as solar shading, ventilative cooling (especially during nighttime) and the thermal mass of the building can be used to reduce and control the building cooling load, while active cooling solutions (e.g. radiant or air-based systems, fans) can be used for cooling when passive systems are insufficient to ensure comfort and health. Electrical fans may be combined with air-conditioning to reduce discomfort, if the upper limit of the operative temperature is exceeded.

EPBD – Guidance documents Cost-Optimality

Brussels, 30.6.2025
C(2025) 4131 final

ANNEX

COMMISSION DELEGATED REGULATION (EU) .../...

of 30.6.2025

supplementing Directive (EU) 2024/1275 of the European Parliament and of the Council as regards the establishment of a comparative methodology framework for calculating cost-optimal levels of minimum energy performance requirements for buildings and building elements

ANNEX

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COMMUNICATION TO THE COMMISSION

Approval of the content of a draft Commission Notice with guidelines accompanying Commission Delegated Regulation (EU) 2025/... supplementing Directive (EU) 2024/1275 of the European Parliament and of the Council as regards the establishment of a comparative methodology framework for calculating cost-optimal levels of minimum energy performance requirements for buildings and building elements

4.3 Indoor environmental quality and other comfort-related issues (p. 14/48)

As laid down in section 2, point 6 of Annex I, to Delegated Regulation (EU) [.../...], the measures used for the calculations are to meet the basic requirements for construction products laid down in Regulation (EU) 2024/3110 of the European Parliament and of the Council8 and for indoor environmental quality ('IEQ'), as defined in Article 2(66) of Directive (EU) 2024/1275. Also, the cost-optimal calculation process should be designed in such a way that differences in indoor environmental quality (temperature, humidity, ventilation rate and presence of contaminants) are made transparent. A measure might also be excluded from the national calculation and requirement setting, if it has a serious detrimental impact on indoor environmental quality or other aspects.

EPBD – Guidance documents Cost-Optimality

Brussels, 30.6.2025
C(2025) 4131 final

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COMMISSION DELEGATED REGULATION (EU) …/...

of 30.6.2025

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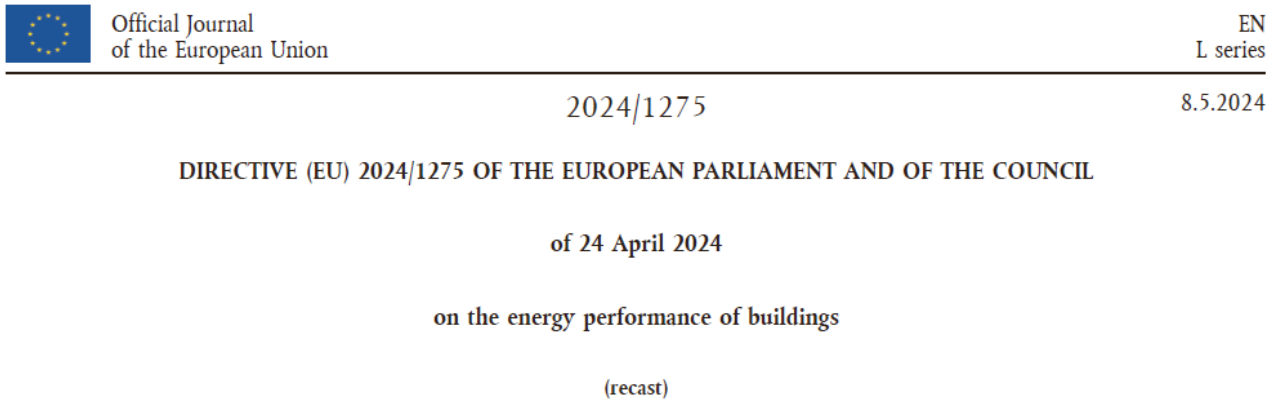
With the rise of global temperatures, measures to reduce indoor temperatures by design (for example, adjusting the orientation of façades to reduce direct sunlight, using external shading, and using natural ventilation) will become increasingly important. Those elements have a significant effect on indoor conditions and therefore on indoor environmental quality. Regarding the level of summer comfort, it is advisable, in particular for a southern climate, but not exclusively, to deliberately take into account passive cooling that can be obtained by proper building design.
The calculation methodology would then be designed in such a way that it includes the risk of overheating and the possible need for an active cooling system for every measure/package/variant.
Advice for the selection, implementation, commissioning, and operation of passive and active cooling systems with regard to maintaining comfort and energy efficiency are provided by IEA EBC Annex 809 and REHVA10, for example. (p. 14/48)

EPBD – Monitoring



Official Journal of the European Union

EN
L series

2024/1275

8.5.2024

DIRECTIVE (EU) 2024/1275 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL

of 24 April 2024

on the energy performance of buildings

(recast)

Article 13 (p. 30/68)

5.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 non-residential buildings, the installation of such devices shall be required, where technically and economically feasible, when a building undergoes a major renovation. Member States may require the installation of such devices in residential buildings.

These will apply, as of 2028, to new non-residential buildings owned by public bodies and, as of 2030, to all new non-residential buildings and to buildings renovated to ZEB-level.

EPBD – Guidance documents TBS

Brussels, 30.6.2025
C(2025) 4132 final

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COMMUNICATION TO THE COMMISSION

Approval of the content of the draft Commission Notice providing guidance on new or substantially modified provisions of the recast Energy Performance of Buildings Directive (EU) 2024/1275

Technical building systems, indoor environmental quality and inspections (Articles 13, 23 and 24)

3.2. Guidelines on measuring and control

Article 13(5) sets requirements for buildings to be equipped with measuring and control devices for the monitoring and regulation of IAQ. It is recommended that such devices measure carbon dioxide and, where relevant, particulate matter ($PM_{2.5}$). An example of these can be demand-controlled ventilation systems (in principle mechanical, hybrid or natural) which have both control and monitoring functions.

EPBD – Monitoring

Official Journal
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2024/1275

8.5.2024

DIRECTIVE (EU) 2024/1275 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL

of 24 April 2024

on the energy performance of buildings

(recast)

Article 13 (p. 30/68)

10.The building automation and control systems shall be capable of:

(a) continuously monitoring, logging, analysing and allowing for adjusting energy use;

(b) benchmarking the building's energy efficiency, detecting losses in efficiency of technical building systems, and informing the person responsible for the facilities or technical building management about opportunities for energy efficiency improvement;

(c) allowing communication with connected technical building systems and other appliances inside the building, and being interoperable with technical building systems across different types of proprietary technologies, devices and manufacturers;

(d) by 29 May 2026 monitoring of indoor environmental quality.

EPBD – Guidance documents TBS

Brussels, 30.6.2025
C(2025) 4132 final

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Technical building systems, indoor environmental quality and inspections (Articles 13, 23 and 24)

3.2. Guidelines on measuring and control (p. 20)

Article 13(10)(d) introduces a requirement for indoor environmental quality monitoring for existing non-residential buildings by 29 May 2026. It is recommended that IEQ monitoring in non-residential buildings includes indoor temperature, relative humidity, carbon dioxide, and, where relevant, particulate matter ($PM_{2.5}$). It is common in existing buildings to use the air temperature measurement as a proxy for the number of people in the room and associated ventilation rates (even without CO_2 sensor). In such cases, where monitoring equipment is already present and it is able to interact with the ventilation system to ensure the identified ventilation rates, it may not be technically and economically feasible to upgrade with IEQ monitoring existing buildings in operation until a major renovation is performed for the building.

EPBD – Guidance documents TBS

Brussels, 30.6.2025
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Technical building systems, indoor environmental quality and inspections (Articles 13, 23 and 24)

3.3. Relevant IEQ parameters and examples of optimal IEQ conditions (p. 21)

Table 10 (page 23) provides examples of relevant IEQ parameters when setting design requirements (e.g. in line with Articles 7(6) and 8(3)), conducting commissioning, performing monitoring (e.g. in line with Article 13(5)), and conducting inspections (in line with Article 23).

Table 11 provides thermal comfort recommended ranges with and without mechanical cooling.

Recommended ranges in buildings without mechanical cooling can be used only if occupants have easy access to operable windows and do not have strict clothing policies. Otherwise, the recommended ranges 'with mechanical cooling' apply. For non-residential buildings without mechanical cooling, it is recommended that the airing system is automatically controlled and appropriate consideration is taken to draught risk.

EPBD – Guidance documents TBS

Brussels, 30.6.2025
C(2025) 4132 final

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Table 11 – Example of optimal indoor environment limits for new buildings based on a medium expectation of occupants

	Parameter	Examples of optimal ranges						Deviation during occupancy for design outdoor conditions
	-	Heating season (a) (T_{rm} (b) ≤ 10 °C)		Cooling season (a) (15 °C ≤ T_{rm} ≤ 30 °C)		Transition season (a) (10 °C < T_{rm} < 15 °C)		
		With mechanical cooling (c)	Without mechanical cooling	With mechanical cooling	Without mechanical cooling	With mechanical cooling	Without mechanical cooling	
Thermal comfort	Operative temperature (T_{op})(d)	T_{op} ≥ 20 °C	T_{op} ≥ 20 °C	T_{op} ≤ 26 °C	T_{op} ≤ 0.33×T_{rm}+21.8 °C	20 ≤ T_{op} ≤ 26 °C	20 ≤ T_{op} ≤ 0.33×T_{rm}+21.8 °C	Yearly: 6% and 3% Monthly: 25% and 12% Weekly: 50% and 20% Outside Category II and III, respectively (EN 16798)
	Draught rate (e) (Air velocity)	DR 20% (ISO 7730)	DR 20% (ISO 7730)	DR 20% (ISO 7730)	Openable window (f) T_o ≥ 10 °C	DR 20% (ISO 7730)	Openable window (f) T_o ≥ 10 °C	n.d.(g)

Conclusion

EPBD Guidance documents provide a robust framework for integrating resilience, IEQ, and ventilative cooling.

These aspects are essential for climate adaptation, occupant health, and energy performance.

National transposition should ensure these elements are fully addressed.

Do not forget the “Affordable housing initiative”

European Council President António Costa said it was crucial European leaders came together to discuss how the European Union can complement efforts on housing. | Dingena Mol/AFP via Getty Images

LIVING CITIES
OCTOBER 23, 2025 7:34 AM CET
BY AITOR HERNÁNDEZ-MORALES

BRUSSELS — For decades, the EU’s view on housing policy has been simple: It’s not our problem.

Housing isn’t explicitly listed as an institutional competence in any of the EU’s treaties, and though Brussels has issued legislation tackling topics like the energy performance of buildings or the quality of construction materials, it has left regulating the housing market to national, regional and local authorities — until now.

The affordable housing initiative is a flagship of the New European Bauhaus (NEB). The core values of the new European bauhaus are sustainability, aesthetics and inclusiveness. In that regard, projects supported by the initiative combine a focus on the energy efficiency of buildings with sustainability, design, liveability, accessibility and affordability to ensure a fair green transition.


Thank You
For Your Attention

Guidance documents

Communication approving the content of the Notice providing guidance on the recast EPBD & Cover Notice

1. Minimum Energy Performance Standards (Article 9)
2. Financial Incentives & One-Stop Shops (Articles 17 & 18)
3. Energy Performance Certificates & Control Systems (Articles 19–21, 27)
4. Renovation Passport (Article 12)
5. Databases for Energy Performance (Article 22)
6. Data Exchange (Article 16)
7. Zero-Emission Buildings (Articles 7 & 11)
8. Solar Energy in Buildings (Article 10)
9. Infrastructure for Sustainable Mobility (Article 14)
10. Technical Building Systems & Inspections (Articles 13, 23, 24)
11. Fossil Fuel Boilers (Article 13, Annex II)
12. Calculation Framework (Annex I) → COMMISSION DELEGATED REGULATION : Guidelines for Cost-optimal levels of minimum energy requirements
13. Life-Cycle Global Warming Potential (Article 7(2) & (5))