

Future Homes and the New Part L

One Step Closer to Net Zero?



The New Part L of the Building Regulations, published on 15th December 2021, sets out the interim step for both domestic and non-domestic buildings in England to reduce CO2 emissions in line with the government's plan to transition the built environment towards Net Zero.

The changes to Part L will administer a 30% reduction on emissions from new homes and an estimated 27% reduction on emissions from other new buildings, over the previous regulations (2013).

The changes to Part L provide an interim step before the Future Homes Standard comes into fruition in 2025 (and the Future Buildings Standard shortly after that). The updates will come into effect on the 15th June 2022. All new residential schemes will be assessed using the new SAP 10 method. The key updates to consider are detailed below:

Greater Insulation Requirements

More stringent insulation requirements and changes to the calculation of carbon emissions targets will mandate greater insulation requirements for new homes in SAP 10. The upgraded U-Values and other parameters can be found in the following table.

Elements	Notional Building Target Values		Maximum Acceptable Values	
	SAP 10	SAP 2012	SAP 10	SAP 2012
Floors	0.13	0.13	0.18	0.25
Walls	0.18	0.18	0.26	0.3
Roof	0.11	0.13	0.16	0.2
Doors	1	1-1.2	1.6	2
Windows	1.2	1.4	1.6	2
Air Permeability	5	5	8	10
WWHR	Yes	No	-	-



Thermal Bridging

The updated SAP 10 methodology has removed the option to follow the ACD scheme (Accredited Construction Details). Design teams now need to either use alternative schemes (perhaps from the insulation manufacturers) or carry out bespoke thermal bridging calculations for each junction which is both costly and time consuming.

Change in Carbon Factor of Electricity

The SAP 10 methodology within the updated Part L, utilises a carbon factor for electricity that is 55% lower than within the previous regulations (0.233 kgCO2/kWh vs 0.519 kgCO2/kWh). The SAP 2012 methodology used an outdated carbon factor from 2012, during which the national grid still had a reliance on coal fired power stations, which have now been decommissioned.

Subsequently, the use of electrically powered heating systems (in particular heat pumps) is heavily incentivised.

Primary Energy Target

A new primary energy target has been established for new residential developments. This sets out the maximum primary energy use for a dwelling in a year, expressed as kWh/(m²·year). This is a welcome addition, utilising a metric in line with industry best practice targets from LETI (the London Energy Transformation Initiative) & Passivhaus.



Air Leakage Testing for all Homes

Based on the new regulations all homes are subject to Air Permeability testing and the "sample home" testing method will no longer be acceptable.

Part O for Overheating

Part O is a new Building Regulations document which expands on the limited overheating risk guidelines included in the previous version of Part L. While the previous edition of Part L only touched on basic mitigation principles of buildings overheating during summer season, the new Part O provides more technical information to assess and mitigate overhearing risks in buildings and urban heat island impacts on the climate change.

Part S for Electric Vehicle Charging

Part S is another new Building Regulation document that covers all the necessary information regarding provision of EV (Electric Vehicle) charging facilities. Based on the new regulations, new homes and other buildings are mandated to provide electric vehicle charging points and/or provide the necessary infrastructure for future connection.



Regulations as a driver for Net Zero?

On first glance, improvements to the fabric efficiency, air leakage testing for all homes, regulations concerning dwellings overheating (Part O) and regulations tackling electric vehicle charging (Part S) are welcome upgrades.

However, the updated part L fails to provide guidance on a number of fundamental areas such as embodied carbon & performance-based targets, or the regulatory emphasis on the use of renewable energy sources such as PVs, without which true decarbonisation of the built environment and the delivery of net zero buildings by 2050 cannot be achieved.

While it is anticipated that the Government's 'Statement of Intent' would address some of these gaps, it is evident that this information was not part of the latest released updates.

In addition to the aforementioned points, a comparison between the new mandatory standards and other voluntary building guidelines (such as RIBA 2030 standard and LETI Climate Emergency Design Guide) demonstrates that the new Part L regulations do not go far enough in order to deliver properties that meet net zero carbon requirements or are capable of being upgraded to net zero standard with minimal retrofitting activity.

A unified approach from government and other advisory groups would facilitate a smoother transition to net zero within the built environment.

How can AESG help?

AESG is a specialist consultancy, engineering and advisory firm headquartered in London, Dubai and Singapore working on projects throughout Europe, Asia and Middle East. We pride ourselves as industry leaders in each of the services that we offer. We have one of the largest dedicated teams with decades of cumulative experience in sustainable design, fire and life safety, façade engineering, commissioning, data management for the built environment, waste management, environmental consultancy, acoustics, strategy and advisory and carbon management.



Ara Nik Senior Sustainability Consultant

Ara is a Senior Sustainability Consultant at AESG. She has a background in architecture and urban design and is specialised in Sustainable Design, Climate, Microclimate, Climate Change and Parametric Design.

Ara has worked on numerous projects across Middle East, Asia and Europe and her portfolio includes various projects where she has been involved in their Urban and Architectural design and projects where she has provided Sustainability, Building & Urban Physics, as well as Climate and Microclimate consultancy according to projects' goals and targets. During her time at AESG, Ara has provided focused Sustainability Consultancy on many large-scale and high-profile projects and has been involved in developing Sustainability Frameworks and Sustainability Implementation Plans for various urban developments.



Sam Luker Associate Sustainability Consultant

As Associate Sustainability Consultant, Sam is a key member of our Sustainability team in the UK. With an MSc in Environmental Technology, he has gained valuable experience in the development of sustainability strategies and frameworks for a variety of projects including residential masterplans, retail and office portfolios.

With his expertise in the development of Net Zero Carbon strategies and frameworks, assessing both operational and embodied carbon, for a variety of projects including both new development and existing estates, he actively contributes to our mission of advancing the Net Zero agenda globally.

For further information relating to specialist consultancy engineering services, feel free to contact us directly via info@aesg.com

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