Future Homes Standard Discussion

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The BBA

For over 50 years, we've been helping the construction and manufacturing industries **build confidence** in the solutions designed, created and implemented **throughout the entire supply chain**.

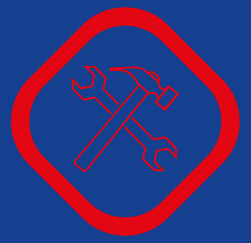
The BBA develops **long-term partnerships** with clients and associations to enable **continued growth in both the UK and Global marketplaces**, while remaining reassuringly impartial.

As a for-profit organisation Limited by Guarantee, the BBA looks **to reinvest in the industry as a whole** for the benefit of all stakeholders.

What we do

- **Product Approval Certification**
  - BBA Agrément Certification
  - Reproduction Certification
  - HAPAS
- **Testing**
- **Audit and Inspection**
- **Management Systems**
- **UKCA Marking**

To date



6,000+

CERTIFICATES ISSUED

72+

COUNTRIES REPRESENTED by CLIENT BASE

170+

BBA PEOPLE

50+

YEARS IN BUSINESS

400+

TESTING METHODOLOGIES

8,000+

ANNUAL INSPECTIONS AND ASSESSMENTS

What we'll cover;

- Future Homes Standard Implementation Timeline
- Amended Approved Document L
- Amended Approved Document F
- All-New Approved Document - Overheating
- Q&A

Building Control Briefing

The Future Homes Standard and Approved Document Part L1 2021

LABC

HERTFORDSHIRE BUILDING CONTROL

Introduction to The Future Homes Standard

Changes to Approved Document L

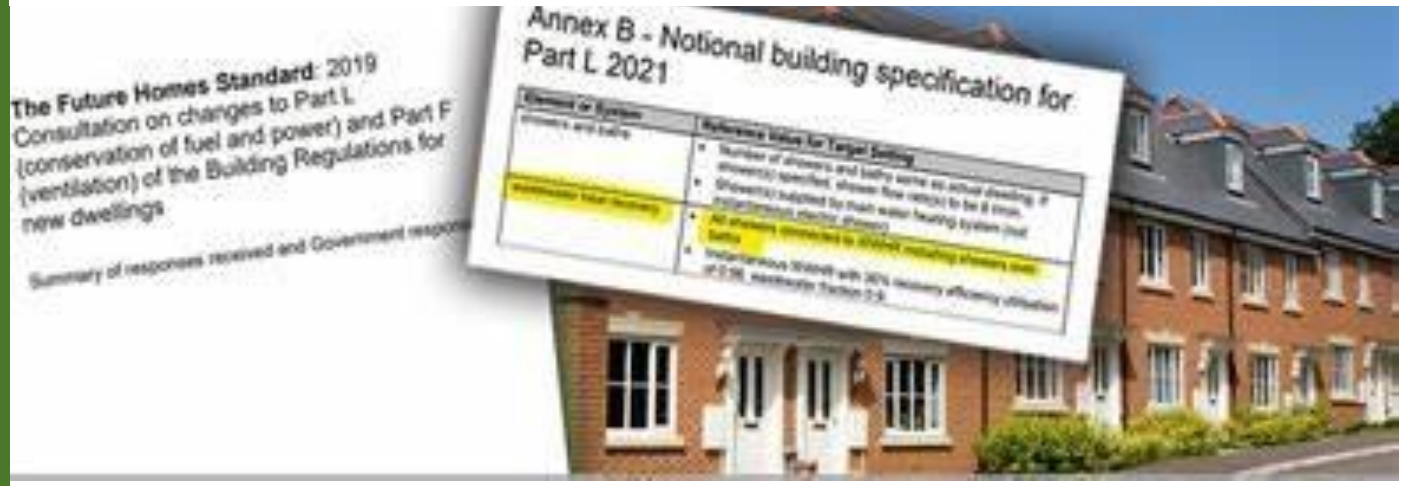
- New dwellings
- Extensions to dwellings

Changes to Approved Document F

New Approved Document -Overheating

Update: FHS

Timing	Milestones
Phase 1 – Introduce interim 2021 Part L uplift for all building types	
Jan 2021	– Publish The Future Buildings Standard consultation document
Dec 2021	– Interim Part L, Part F and Overheating Regulations made for domestic and non-domestic buildings
June 2022	– Interim Part L, Part F and Overheating Regulations come into effect – Developers must submit building notice / initial notice or deposit plans by June 2022, for transitional arrangements to apply
Phase 2 – Technical work and engagement	
Ongoing	– Industry engagement, including through BRAC and technical working groups
Autumn 2021 – summer 2022	– Research and analysis to develop proposed technical specification
Summer 2022 – 2024	– Develop sector-specific guidance and embed understanding of the technical specification of the Future Homes Standard
Phase 3 – Consultation & policy development	
Spring 2023	– Technical consultation on the proposed specification for the Future Homes Standard
Phase 4 – Full FHS implementation	
2024	– Part L FHS Regulations made
2025	– Part L FHS Regulations come into effect

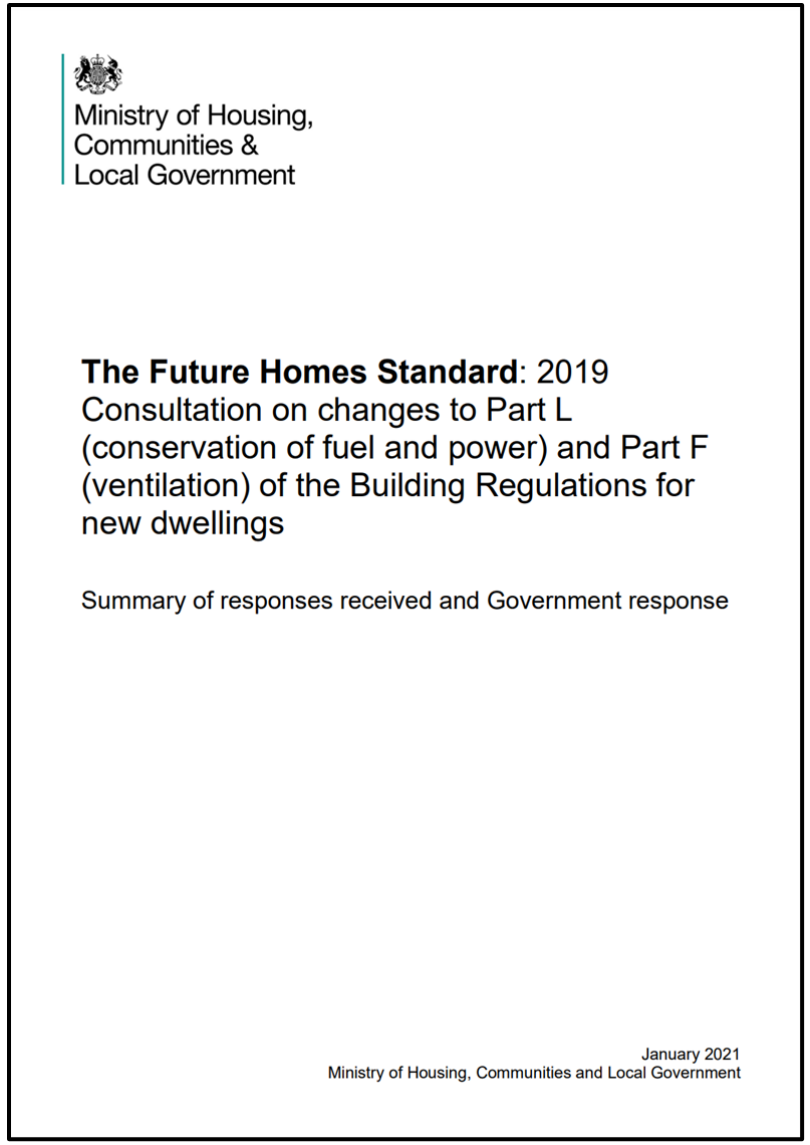


Transition to New Standards

Up to June 2022	From June 2022	From June 2023
Work already commenced will come under AD L 2013	Work not commenced but with application registered prior to June 22 will come under AD L 2013 if it commences prior to June 2023	All work will come under AD L 2021
	Work with no application registered will come under AD L 2021	

NOTE – Commencement of work relates to each individual plot or block of flats

Approved Document L 2021



Ministry of Housing, Communities & Local Government

The Future Homes Standard: 2019 Consultation on changes to Part L (conservation of fuel and power) and Part F (ventilation) of the Building Regulations for new dwellings

Summary of responses received and Government response

January 2021
Ministry of Housing, Communities and Local Government

- From 4 to 2 volumes - dwellings and non dwellings
- New version of SAP 10.1 Total Energy Performance
- Higher Fabric Efficiency
- Higher efficiency of controlled fittings
- WWHR and PV

New Dwellings Compliance Checks SAP 10.1

The BREL Report

Target Dwelling Emission Rate
Target Fabric Energy Efficiency Rate
Target Primary Energy Rate
Specifications
Photographs

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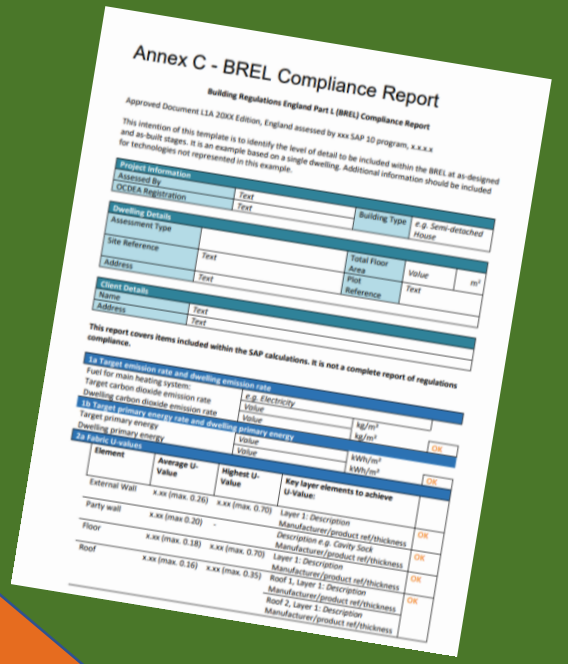
The BREL Report - Photographs


Annex C - BREL Compliance Report

Building Regulations England Part L (BREL) Compliance Report

Approved Document L1A 20XX Edition, England assessed by xxx SAP 10 program, x.x.x.x

This intention of this template is to identify the level of detail to be included within the BREL at as-designed and as-built stages. It is an example based on a single dwelling. Additional information should be included for technologies not represented in this example.

Project information				
Assessed By	Text			
OCDEA Registration	Text	Building Type	e.g. Semi-detached House	
Dwelling Details				
Assessment Type				
Site Reference	Text	Total Floor Area	Value	m²
Address	Text	Plot Reference	Text	
Client Details				
Name	Text			
Address	Text			

This report covers items included within the SAP calculations. It is not a complete report of regulations compliance.

1a Target emission rate and dwelling emission rate			
Fuel for main heating system:	e.g. Electricity		
Target carbon dioxide emission rate	Value	kg/m²	
Dwelling carbon dioxide emission rate	Value	kg/m²	OK
1b Target primary energy rate and dwelling primary energy			
Target primary energy	Value	kWh/m²	
Dwelling primary energy	Value	kWh/m²	OK

2a Fabric U-values				
Element	Average U-Value	Highest U-Value	Key layer elements to achieve U-Value:	OK
External Wall	x.xx (max. 0.26)	x.xx (max. 0.70)	Layer 1: Description Manufacturer/product ref/thickness	OK
Party wall	x.xx (max 0.20)	-	Description e.g. Cavity Sock Manufacturer/product ref/thickness	OK
Floor	x.xx (max. 0.18)	x.xx (max. 0.70)	Layer 1: Description Manufacturer/product ref/thickness	OK
Roof	x.xx (max. 0.16)	x.xx (max. 0.35)	Roof 1, Layer 1: Description Manufacturer/product ref/thickness Roof 2, Layer 1: Description Manufacturer/product ref/thickness	OK

1. Foundations/substructure and ground floor to indicate thermal continuity of insulation and quality at
    a. Ground floor perimeter edge insulation
    b. External door threshold
    c. Below damp-proof course on external walls
2. External walls: for each wall type to indicate thermal continuity of insulation, and quality at
    a. Ground floor to wall junction
    b. Structural penetrating elements
3. Roof: for each roof type to indicate thermal continuity of insulation, and quality at
    a. Joist/rafter level
    b. Eaves and gable edges
4. Openings: for each opening type (one image per wall or roof type is sufficient) to indicate thermal continuity of insulation, and quality at
    a. Window positioning in relation to cavity closer or insulation line
    b. External doorset positioning in relation to cavity closer or insulation line
5. Airtightness: additional photos for all details 1-4 to identify airtightness detail (if not included in continuity of insulation image).
6. Building services: for all plant associated with space heating, hot water, ventilation and low or zero carbon technology equipment within or on the building:
    a. Plant/equipment identification label(s) including make/model and serial number
    b. Primary pipework continuity of insulation
    c. Mechanical ventilation ductwork continuity of insulation (for duct sections outside of thermal envelope)

Limiting Standards for New Dwellings

Limiting standards in new dwellings

4.6 New insulating fabric elements in new dwellings should meet the limiting standards in Table 4.1.

Table 4.1 Limiting U-values for new fabric elements and air permeability in new dwellings

Element type	Maximum U-value[1] W/(m².K)	
All roof types[2]	0.16	Currently .20
Wall[2]	0.26	Currently .30
Floor	0.18	Currently .25
Party wall	0.20	
Swimming pool basin	0.25	
Window[3,4]	1.6	Currently 2.0
Rooflight[5,6]	2.2	Currently 2.0
Doors (including glazed doors)	1.6	Currently 2.0
Air Permeability	8.0 m^3/ $h.m^2$ @ 50Pa 1.57 m^3/ $h.m^2$ @ 4Pa	Currently 10m^3/$h.m^2$ @50Pa

Target Primary Energy Rate

'energy from renewable and non-renewable sources which has not undergone any conversion or transformation process'

Examples – two dwellings with the same heating demand of 10 000kWh

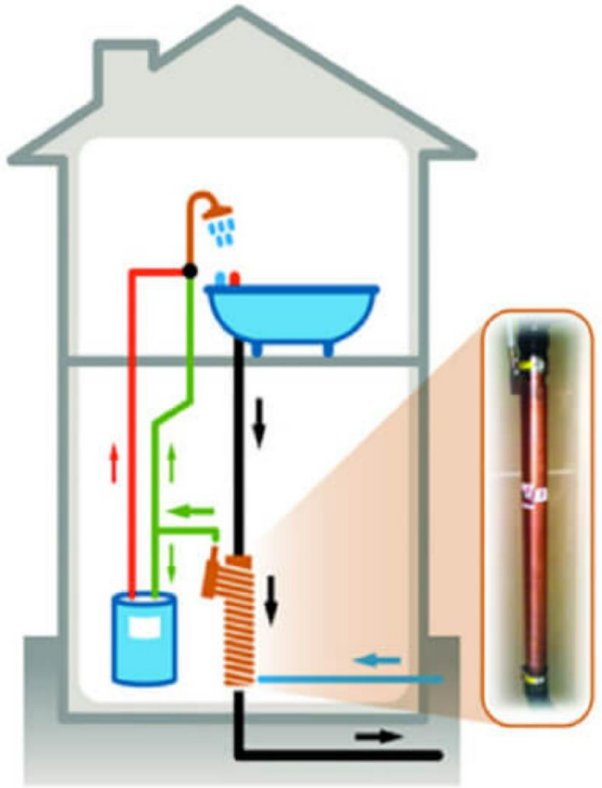
Dwelling A
90% efficient gas boiler. The PE factor for mains gas is 1.130 kWh/kWh. The associated primary energy would then be (10,000 kWh / 0.90) x 1.130 = **12,556 kWh**.

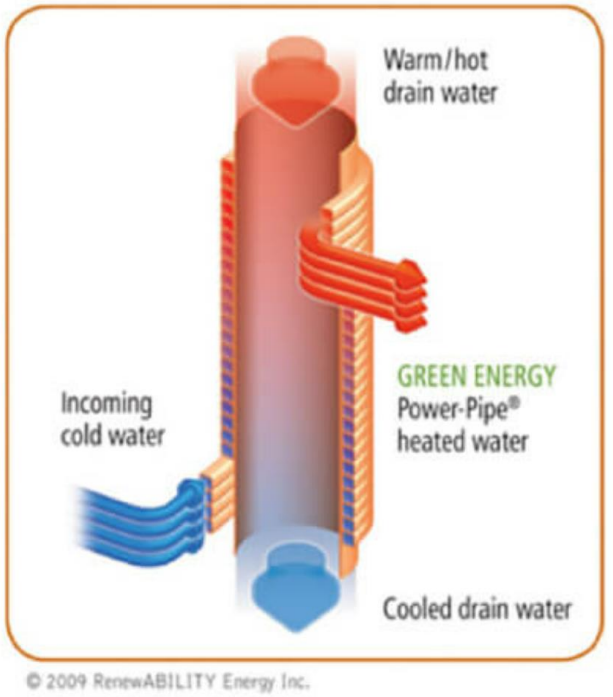
Dwelling B with a 300% efficient electric heat pump has a heating demand of 10,000 kWh. The PE factor for electricity is 1.501 kWh/kWh. The associated primary energy would be (10,000 kWh / 3.00) x 1.501 = **5,003 kW**

The Notional Dwelling

Table 1.1: Summary of notional dwelling specification for new dwellings	
Element or System	**Reference Value for Target Setting**
Opening areas (windows, roof windows, rooflights and doors)	Same as actual dwelling up to a maximum for total area of openings of 25% of total floor area.[1]
External walls including semi-exposed walls	U = 0.18 W/m²K
Party walls	U = 0
Floors	U = 0.13 W/m²K
Roofs	U = 0.11 W/m²K
Opaque door (<30% glazed area)	U = 1.0 W/m²K
Semi-glazed door (30-60% glazed area)	U = 1.0 W/m²K
Windows and glazed doors with >60% glazed area	U = 1.2 W/m²K Frame factor = 0.7
Roof windows	U = 1.2 W/m²K . For more details see specification in Appendix R.
Rooflights	U = 1.2 (no correction applied)
Ventilation system	Natural ventilation with intermittent extract fans
Air permeability	5 m³/h·m² at 50 Pa
Main heating fuel (space and water)	Mains gas
Heating system	Boiler and radiators Central heating pump 2013 or later, in heated space Design flow temperature = 55°C
Boiler	Efficiency, SEDBUK(2009) = 89.5%
Heating system controls	Boiler interlock, ErP Class V Either: single storey dwelling in which the living area > 70% of total floor area - programmer and room thermostat; or: any other dwelling - time and temperature zone control + TRVs;
Hot water system	Heated by boiler (regular or combi as above) Separate time control for space and water heating
Wastewater heat recovery	All showers connected to WWHR including showers over baths Instantaneous WWHR with 36% recovery efficiency Utilisation of 0.98, wastewater fraction 0.9.
Hot water cylinder	If cylinder, declared loss factor = 0.85 x (0.2 + 0.051 V2/3) kWh/day, where V is the volume of the cylinder in litres
Lighting	Fixed lighting capacity (lm) = 185 x TFA Efficacy of all fixed lighting = 80 lm/W
Air conditioning	None
PV system	For houses kWp = 40% of ground floor area / 6.5 For flats kWp = 40% of dwelling floor area / (6.5 * number of

Waste Water Heat Recovery





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Extensions and Alterations to Dwellings

Table 4.2 Limiting U-values for new fabric elements in existing dwellings

Element type	Maximum U-value[1] ($W/m^2.K$)	
Roof[2]	0.15	Currently .16 / .18
Wall[2,3]	0.18	Currently .28
Floor[4,5]	0.18	Currently .22
Swimming pool basin	0.25	
Window[6,7]	1.4 or Window Energy Rating[8] Band B minimum	Currently 1.6
Rooflight[9,10]	2.2	Currently 1.6
Doors with >60% of internal face glazed	1.4 or Doorset Energy Rating[8] Band C minimum	Currently 1.8 or band E
Other doors	1.4 or Doorset Energy Rating[8] Band B minimum	Currently 1.8 or band E

Heating Systems – New Rules

- Self Regulating Devices
- Low temperature heating
- Sizing of heating systems

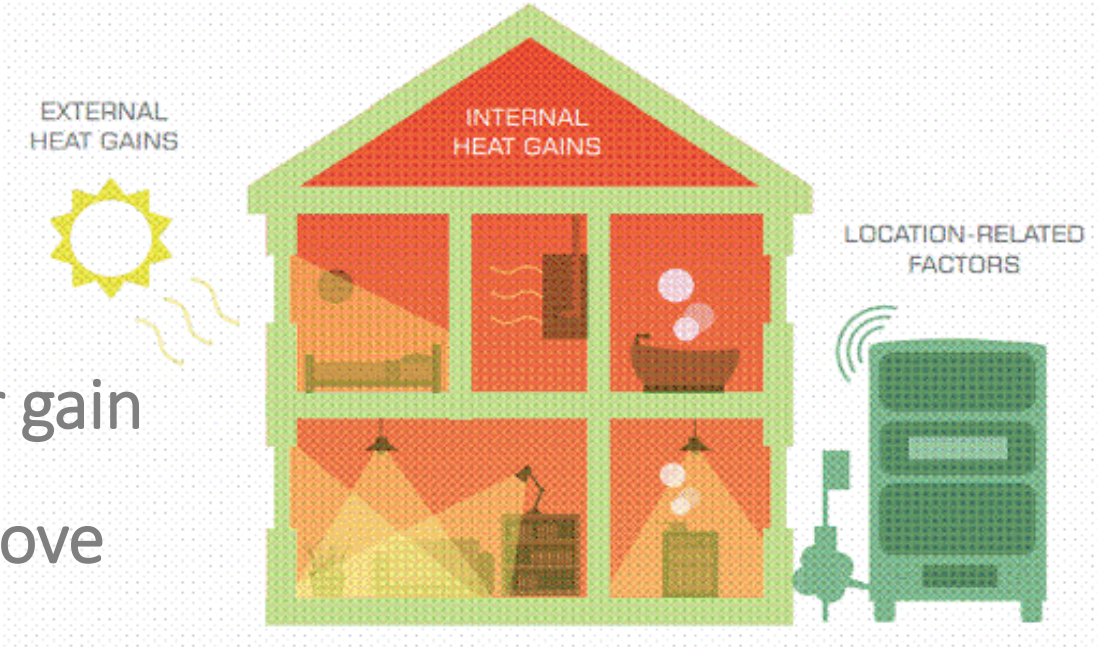
More New Rules on…

- Heat Pumps
- Space and comfort cooling
- Mechanical ventilation
- Lighting
- Building automation and control systems
- On site electricity generation

Approved Document F - Ventilation

- Considering pollution
- Controls on retrofit works
- Simpler unambiguous guidance
- Guidance for Home Owners

New Approved Document Overheating



- Limiting unwanted solar gain
- Providing means to remove excess heat from indoors
- 2 Methods – simple and dynamic thermal assessment
- Consideration to external noise, pollution and security

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Heat and Buildings Strategy

HM Government

Heat and Buildings Strategy

Presented to Parliament by the Secretary of State for Business, Energy and Industrial Strategy by Command of Her Majesty

October 2021

‘Robust plans which offer a credible pathway to achieving carbon budgets and lay the foundations for Net Zero buildings in the UK by 2050.’

Rt Hon Kwasi Kwarteng MP Secretary of State for Business, Energy and Industrial Strategy

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1032119/heat-buildings-strategy.pdf

Building Control Briefing

HERTFORDSHIRE
BUILDING CONTROL

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Q&A