
NSG
GROUP

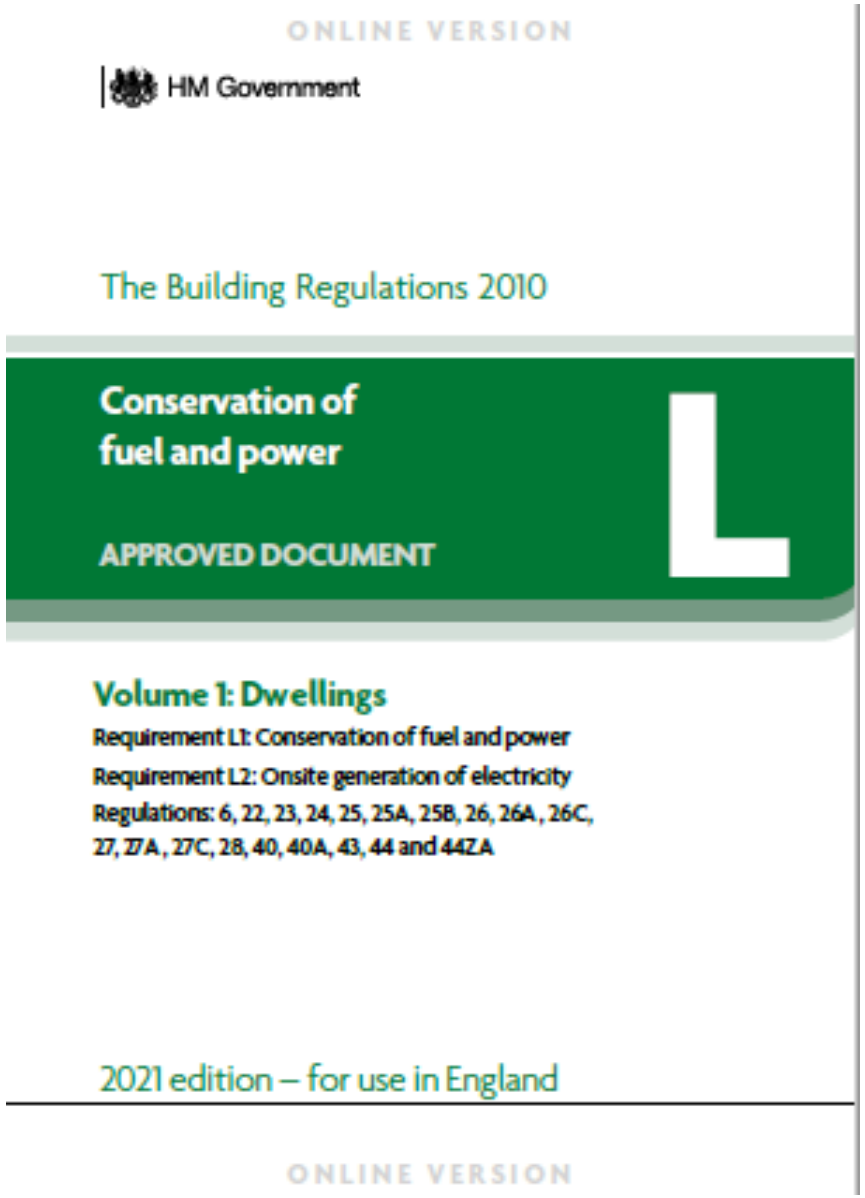
Approved Document L (England) 2021 edition

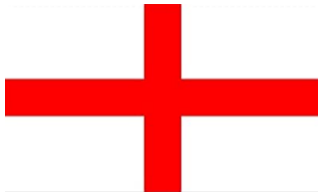
In force from 15th June 2022

Introduction

- 2021 editions of Approved Document L (conservation of fuel and power) in England published
  - Volume 1 (Dwellings)
  - Volume 2 (Buildings other than dwellings)
- Other 2021 editions of Approved Documents published at same time
  - F1 (Ventilation – dwellings)
  - F2 (Ventilation – buildings other than dwellings)
  - O (Overheating – new residential buildings) new
- Published on 15th December 2021
- To take effect on 15th June 2022
  - New requirements do not apply to work subject to building notice / full plans / initial notice submitted before 15th June 2022 provided work commences on site before 15th June 2023

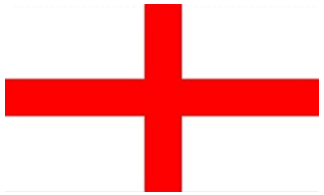
Approved Document L (Volume 1)





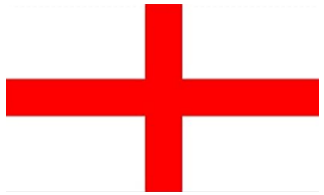
New dwellings

- No specific requirements for building elements (e.g. windows, doors, etc.) as dwelling must achieve overall targets:
  - Target primary energy rate
  - Target CO_2 emissions rate
  - Target fabric energy efficiency rate
- Target rates based on notional dwelling (same size and shape as actual dwelling, but with standardised fabric / services)
  - Calculated using Government's Standard Assessment Procedure (SAP)
- Specification for notional dwelling includes reference values for building elements such as window and doors (see later slide)
- Housebuilders and developers have flexibility to alter specification but cannot go beyond back stop / limiting values
- Back stop / limiting values to prevent poor fabric design (see next slide)



Limiting U values for new dwellings

Fenestration element	Maximum U value (W/m^2K)
Windows (including roof windows and curtain walling)	1.6
Rooflights (in horizontal position)	2.2
Doors (including glazed doors)	1.6



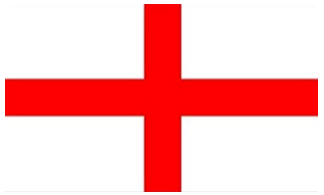
Notional dwelling specification

Fenestration element	Reference U value for target setting (W/m^2K)
Opaque doors (less than 30% glazed area)	1.0
Semi-glazed doors (30 - 60% glazed area)	1.0
Windows and glazed doors with greater than 60% glazed area	1.2
Roof windows	1.2
Rooflights (in horizontal position)	1.7

Existing dwellings – (1)

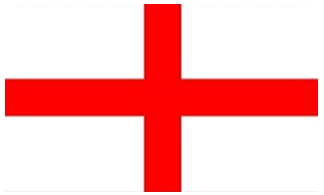
- For windows, there is an improvement on the current standard of WER Band C or U value of 1.6 W/m²K

Fabric element	Maximum U-value (W/m²K)
Window (including roof window or curtain walling)	1.4 or minimum WER Band B
Rooflight	2.2
Doors with greater than 60% of internal face glazed	1.4 or minimum Door Set Energy Rating (DSER) Band C
Other doors	1.4 or minimum Door Set Energy Rating (DSER) Band B



Existing dwellings – (2)

- For timber windows, a maximum U-value of 1.6 W/m^{2}K is permissible
- For external fire doorsets, a maximum U-value of 1.8 W/m^{2}K is permissible
- Alternative if windows or fully glazed external pedestrian doors cannot meet requirements because of need to maintain character of building:
  - Should achieve or better centre pane U value of 1.2 W/m^{2}K, or
  - Upgraded to low emissivity (low-e) secondary glazing
- If other performance (e.g. wind, safety, security, acoustics, etc.) requires thicker glass, equivalent window with standard thickness (6mm) glazing should be shown to meet requirements
- Glass only replacement remains outside of scope



Conservatories

- No changes to current exemption for energy efficiency requirements, provided:
- Extension / conservatory at ground floor level
- Floor area does not exceed $30m^2$
- Glazing complies with Part K of the Building Regulations (e.g. safety)
- Any wall, door or window separating extension / conservatory from rest of dwelling has been retained or replaced with a wall, door or window
  - Replacement walls, doors and windows should satisfy energy efficiency requirements for those elements
- Heating system of dwelling is not extended into extension / conservatory nor does extension / conservatory have its own fixed heating appliance

Approved Document L (Volume 2)

HM Government

The Building Regulations 2010

Conservation of fuel and power

APPROVED DOCUMENT

L

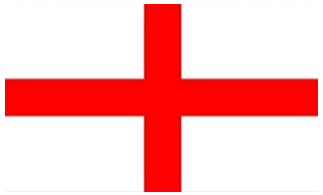
Volume 2: Buildings other than dwellings

Requirement L1: Conservation of fuel and power

Requirement L2: Onsite generation of electricity

Regulations: 6, 22, 23, 24, 25, 25A, 25B, 26, 26C, 27, 27C, 28, 40, 40A, 43, 44 and 44ZA

2021 edition – for use in England



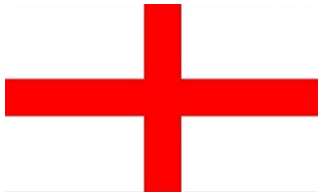
New buildings other than dwellings

- No specific requirements for building elements (e.g. windows, doors, etc.) as building must achieve overall targets:
  - Target primary energy rate
  - Target CO_2 emissions rate
- Target rates based on notional building (same size and shape as actual dwelling, but with standardised fabric / services)
  - Calculated using Simplified Energy Building Model (SBEM) or other approved software tools
- Flexibility for developers to alter specifications but cannot go beyond 'back stop' / limiting values
- 'Back stop' / limiting values to prevent poor fabric design (see next slide)

Limiting U values for new and existing non-domestic buildings

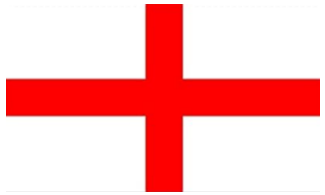
Element	Maximum U-value (W/m²K)
Windows in buildings similar to dwellings*	1.6 or minimum WER Band B
All other windows, roof windows and curtain walling	1.6
Rooflights	2.2
Pedestrian doors (including glazed doors)	1.6

* e.g. student accommodation and care homes



Non-domestic buildings

- For external fire doorsets, a maximum U-value of 1.8 W/m^{2}K is permissible
- Alternative if windows or fully glazed external pedestrian doors cannot meet requirements because of need to maintain character of existing building:
  - Should achieve or better centre pane U value of 1.2 W/m^{2}K, or
  - Upgraded to low emissivity (low-e) secondary glazing
- If other performance (e.g. wind, safety, security, acoustics, etc.) requires thicker glass, equivalent window with standard thickness glazing should be shown to meet requirements
- Glass only replacement remains outside of scope



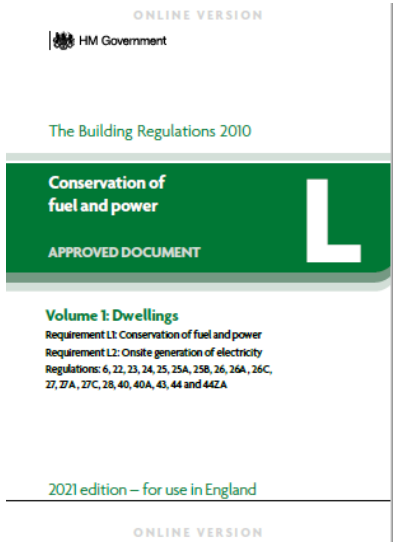
Limiting solar gains in summer

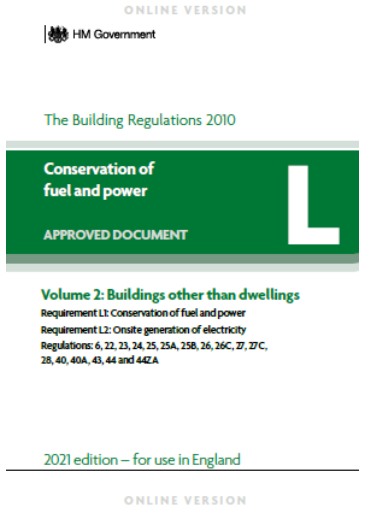
- For new residential buildings, refer to Approved Document O
- For other buildings, solar gains from April to September should be no greater than that through reference glazing (see below)
- Note reference based on 1m high glazing only
  - If actual building has glazing greater than 1m in height, g value will need to be lower

Type of space (as defined in the National Calculation Methodology)	Average zone height	Glazing location for reference space	Glazing area for reference space	Framing factor for reference space	Glazing g-value for reference space
Side-lit	Any	East-facing façade	Full-width to a height of 1000mm	10%	0.48

Possible implications

- New dwellings – window U value (U_w) 1.2 W/m^{2}K for notional dwelling likely to become 'unofficial' standard
  - Mostly double glazing (with Ug = 1.0), but triple glazing in some profiles
  - Increased interest in Pilkington **energiKare™** Advantage (Ug 0.9) to avoid triple glazing
  - Some housebuilders may consider triple glazing as standard if reduces / eliminates need for PV
- Replacement windows and doors in existing dwellings WER B or U_W 1.4 not hugely significant
  - Many windows already at B or better
  - Will rule out any WER C windows with Pilkington **K Glass™**
- Conservatories – no changes
- Non-domestic – less ambitious tightening of U values
  - 'Sensitivity' around widespread use of aluminium
  - For solar control, reduced glazed areas vs lower g values





Part L hub

- Developed and kept updated with latest info
- Short URL: http://www.pilkington.co.uk/partl2021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