

Modular and Portable Building Part L 2013 Building Control Compliance Guidance

This documents provides specific guidance to building control bodies (BCB) and Approved Inspectors of compliance to the Building Regulations Part L 2013 and the Energy Performance of Buildings Directive (EPBD), inclusive of the provision of Energy Performance Certificates (EPC) for the Modular and Portable Building Industry.

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www.mpba.biz

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Guidance for Building Control

- 1 This document provides specific guidance and support to assist the compliance process for modular and portable buildings to meet the requirements of ADL2 and the Energy Performance of Buildings Directive (EPBD).

Note | The content of this document should not deviate from the compliance requirement required by the overall building regulations and other approved documents.

The flowchart on the following page provides clear guidance on what level of compliance is required for a specific application.

Following the flowchart each special consideration is detailed for modular and portable building applications.

Exemptions

Modular buildings exempt from Approved Document Part L are limited to

- Buildings under 50m²
- Buildings with a low energy demand
- Temporary buildings

A temporary building is defined as a building that is used on a single site for a period less than two years and then destroyed.

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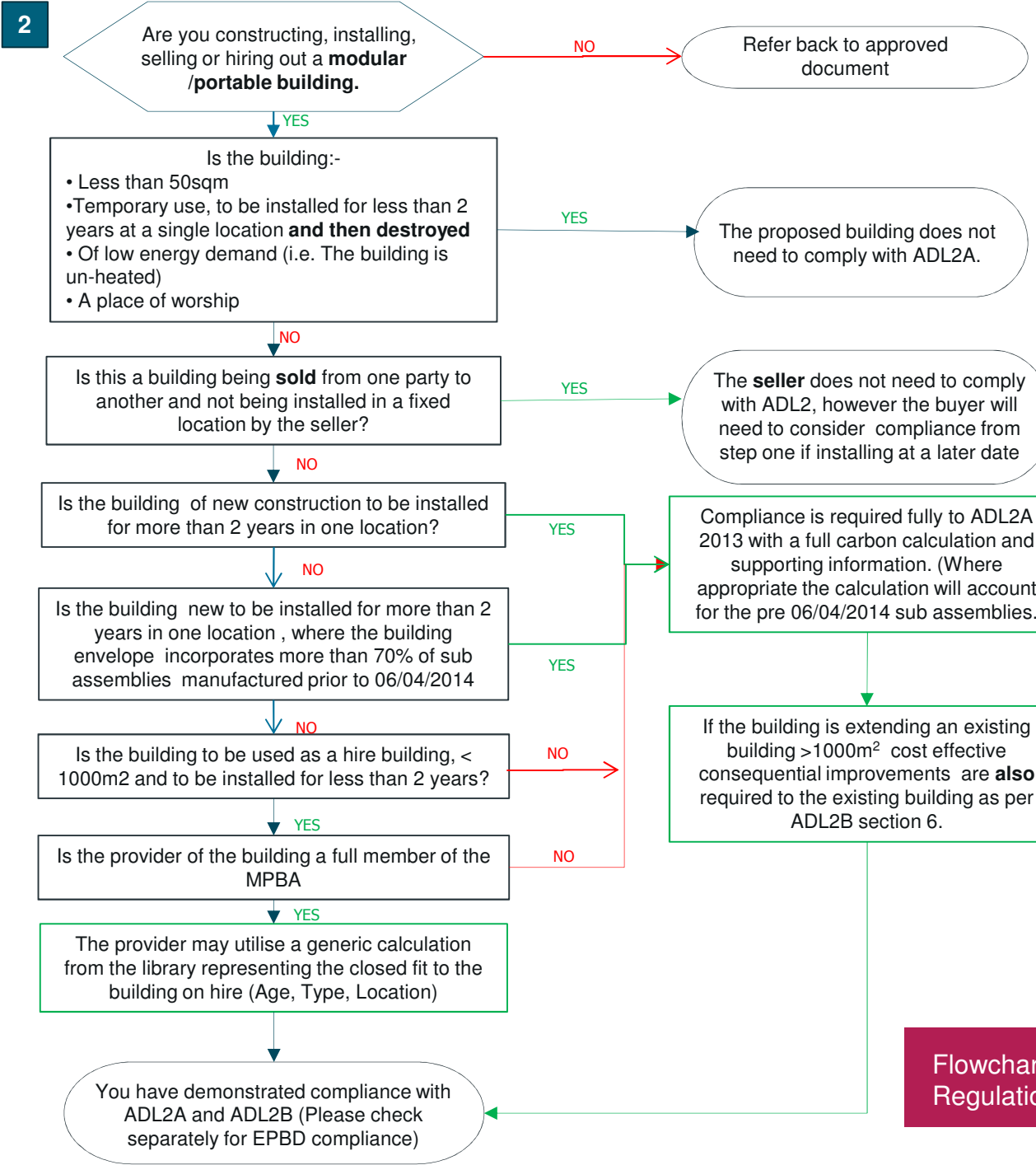
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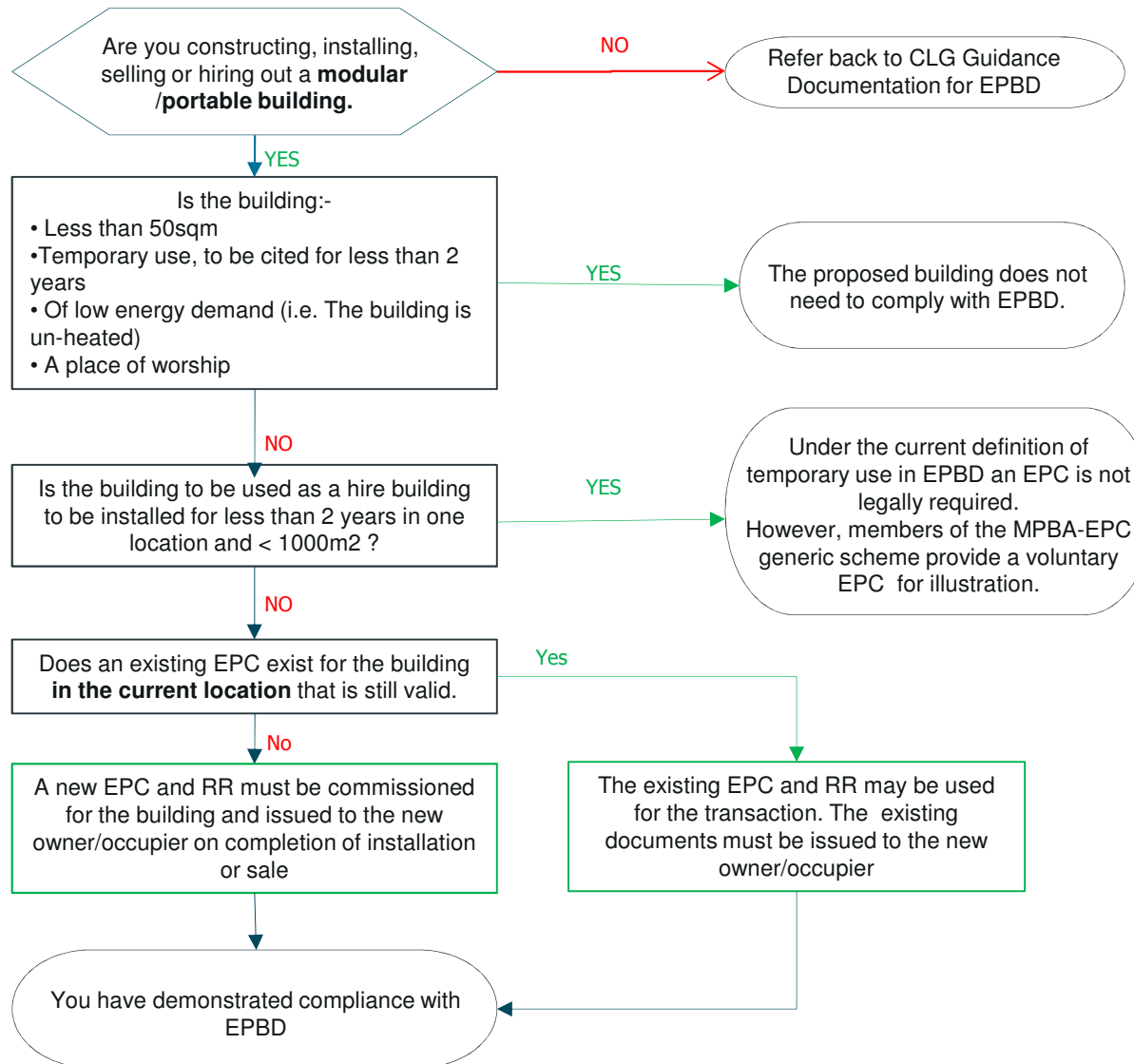
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Flowchart to demonstrate compliance to Building Regulations ADL2A 2013 and EPBD



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Flowchart to demonstrate compliance to Energy Performance of Buildings Directive (EPBD)

Special Considerations for Modular and Portable Buildings

The following special considerations have been approved and included within the Approved Document L2A by CLG.

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Criteria One | Carbon Calculation

All modular buildings other than those exempt are required to issue a compliant carbon calculation. The calculation must be specific to the building unless the building is being hired for a period less than two years and is < 1000m².

For permanent buildings the submission to building control would be no different in format to that of any other submission received by building control for traditional construction.

If a modular/portable building is being used for hire purposes then a generic calculation may be issued to building control to demonstrate compliance. The calculation, which would be accompanied by an Energy Performance Certificate (EPC) issued by an MPBA member. The validity of the certificate may be checked at www.mpba-portal.biz

The generic calculation and certificate issued should be the closest size, location, activity and year of construction to the building on hire.

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Criteria One | Carbon Calculation (continued)

Each generic submission should include the provision of:

- BRUKL Document
- Energy Performance Certificate
- Accompanying explanatory letter from compliance scheme

The project name (A) on the BRUKL should correspond the relevant generic configuration issued and the addresses (B) on both document should reflect the address of the generic scheme issuing the certificate and can be checked for validity at www.mpba-portal.biz

BRUKL Output Document HM Government
Compliance with England Building Regulations Part L 2013

Project name: **Modular and Portable** B

A **2002-EDU-200-N** As built

Building Details B

Address: MPBA-EPC 2002EDU200N, MPBA-EPC Scheme, Caerws, SY17 5WR

Owner Details
Name: MPBA-EPC Generic Scheme
Telephone number: 0870 241 7687
Address: PO Box 99, Caerws, SY17 5WR

Certification tool
Calculation engine: SBEM
Calculation engine version: v5.2.b.1
Interface to calculation engine: SBEM
Interface to calculation engine version: v5.2.b
BRUKL compliance check version: v5.2.b.1

Certifier details
Name: Adrian Bruce Sweetman
Telephone number: 08450039087
Address: Unit 11a, Coventry Canal Basin, St Nicholas Street, Coventry, CV1 4LY

Criterion 1: The calculated CO₂ emission rate for the building should not exceed the target

1.1	CO ₂ emission rate from the notional building, kgCO ₂ /m ² .annum	18.5
1.2	Target CO ₂ emission rate (TER), kgCO ₂ /m ² .annum	35.7
1.3	Building CO ₂ emission rate (BER), kgCO ₂ /m ² .annum	30.9
1.4	Are emissions from the building less than or equal to the target?	BER <= TER
1.5	Are as built details the same as used in the BER calculations?	Separate submission
1.6	TER adjustment factor for modular and portable buildings	1.93

Energy Performance Certificate HM Government
Non-Domestic Building

MPBA-EPC Generic
MPBA-EPC Scheme
11a, James Brinsley House
Coventry
CV1 4LY

Certificate Reference Number:
9000-3001-0000-0000-0091

This certificate shows the energy rating of this building. It indicates the energy efficiency of the building fabric and the heating, ventilation, cooling and lighting systems. The rating is compared to two benchmarks for this type of building: one appropriate for new buildings and one appropriate for existing buildings. There is more advice on how to interpret this information on the Government's website www.communities.gov.uk/epc.

Energy Performance Asset Rating

More energy efficient

A+ 0.25
A 0.25
B 26.50
C 53.75
D 80.00
E 106.25
F 126.50
G Over 150

89 This is how energy efficient the building is.

Less energy efficient

Technical Information

Main heating fuel: Grid Supplied Electricity
Building environment: Heating and Natural Ventilation
Total useful floor area (m²): 105
Building complexity (NDB level): 3
Building emission rate (kgCO₂/m²): 64.50

Benchmarks

Buildings similar to this one could have ratings as follows:
If newly built: A+
If typical of the existing stock: B

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Criteria One | Carbon Calculation (continued)

A unique calculation can be issued to demonstrate compliance for a hired building as an alternative to a generic at the discretion of the supplier. A reason for this may be that the supplier wishes to demonstrate a higher level of compliance and improved EPC rating.

Where calculations are carried out there are special considerations available for selection by the energy assessor to account for the inclusion of sub-assemblies in the construction manufactured before 6th April 2014.

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Criteria Two | Limits on design flexibility

Due to the unique construction properties of a modular or portable building special considerations are made within the calculation software to enable/allow the use of electric heating as this is the only practical heating method within the construction.

In addition for a modular building where more than 70% of its external envelope is to be created from sub-assemblies manufactured prior to 6th April 2014 it is not required to comply with the full requirement of criteria two reduction factors.

Building control officers should ensure that supporting documentation is received to support the construction year of the sub-assemblies.

This guidance applies irrespective of how long the modular building is to be sited in a given location, and therefore covers the retrospective Reg 17C calculation for an old module.

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Criteria Two | Limits on design flexibility (continued)

Where modules constructed prior to 6th April 2014 are incorporated building control should expect to see the TER adjustment factor in section 1.6 of the BRUKL document.

Criterion 1: The calculated CO₂ emission rate for the building should not exceed the target

1.1	CO ₂ emission rate from the notional building, kgCO ₂ /m ² .annum	18.5	
1.2	Target CO ₂ emission rate (TER), kgCO ₂ /m ² .annum	35.7	
1.3	Building CO ₂ emission rate (BER), kgCO ₂ /m ² .annum	30.9	
1.4	Are emissions from the building less than or equal to the target?	BER ≤ TER	
1.5	Are as built details the same as used in the BER calculations?	Separate submission	
A	1.6	TER adjustment factor for modular and portable buildings	1.93

Where the TER adjustment factor in section 1.6 of criteria one is greater 1.0 (A) the element value of a wall is not expected to meet the required standard (B) where the reasonable provision is demonstrated through satisfying criterion one.

Criterion 2: The performance of the building fabric and the building services should achieve reasonable overall standards of energy efficiency

The U-values are expected to be checked by the BCO against the limiting standards which are appropriate for the modules' date of manufacture. No automatic checking is performed by the tool in this case.

2.a Building fabric

Element	U _{max}	U _{req}	U _{act}	Surface where the maximum value occurs*	
B	Wall**	0.35	0.35	0.35	z0/01 Classroom 1/s
Floor	0.25	0.17	0.17	z0/05 Dis WC/T	
Roof	0.25	0.25	0.25	z0/01 Classroom 1/c	
Windows***, roof windows, and rooflights	2.2	2.2	2.2	z0/01 Classroom 1/s/g	
Personnel doors	2.2	-	-	"No external personnel doors"	
Vehicle access & similar large doors	1.5	-	-	"No external vehicle access doors"	
High usage entrance doors	3.5	-	-	"No external high usage entrance doors"	

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5 Criteria Three | Limiting the effect of solar gain

There are no special consideration for modular buildings under criteria three.

6 Criteria Four | Quality of Construction

Where the floor area is less than 500m² a modular building is not required to carry out an air tightness test and can assume an air permeability value of 15m³/h.m²@50PA.

However, the building must still meet the requirement of criteria one in full

As an alternate approach for buildings with a floor area less than 500m² type test data can be used if a test have been carried out by the manufacturer. A certificate of testing issued by a registered ATTMA member to support the figure used within the calculation for criteria one.

All building greater than 500m² require an air tightness test to be carried out on completion.

There will be no requirement to demonstrate calculations in support of thermal bridging until such a time when accredited schemes are available.

7 Criteria Five | Provision of information

Within the scope of all submissions a modular building must also supply an Energy Performance Certificate for all new construction on completion as part of the as built documentation.

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Further Resources

If you are a full member of the MPBA you will be provided with a login to access the following resources.

- Full details of MPBA-EPC generic calculation and certification scheme for modular hire buildings where on placed on a site for less than two years.

- Ability to check authenticity
 - Member details
 - Technical details
 - Guidance for recipients
 - Complaints procedure
- Detailed guidance documentation for download.
- Access to online technical support for specific cases

Further details and assistance can be provided to building control officers and approved inspectors registering at www.mpba.biz

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MPBA–EPC Compliance Scheme is administered by Information Prophets Ltd
11A James Brindley House, Canal Basin, Coventry, CV1 4LY

www.mpba.biz
info@mpba.biz

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