

Notice of Approval of the methodology of calculation of the energy performance of buildings in England and Wales



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Contents

The Approval Notice	5
Approved methodology	5
Calculating the energy performance of dwellings	6
For dwellings at construction completion	6
For dwellings on sale or rent	7
Calculating the energy performance of buildings which are not dwellings	7
Net annual CO₂ emissions for Stamp Duty Land Tax exemptions	7
Approved ways of expressing building energy performance	8
Dwellings	8
Buildings which are not dwellings	8
Keeper of the register	9
Data to be lodged on the register	9
Approval of commercial software calculation tools	9
Figures	11
Figure 1 Graphical scales on which the Dwelling Asset Ratings for a dwelling must be superimposed	11
Figure 2 Graphical scale on which the asset rating for a building which is not a dwelling must be superimposed	12
Figure 3 Graphical scales on which a Building Operational Rating and associated carbon dioxide emissions must be superimposed	13

The Approval Notice

1. This notice of approval takes immediate effect from 1 September 2008 and sets out:
 - a) the methodology of calculation of the energy performance of buildings including methods for calculating the target emission rate, building emission rate, asset rating and operational rating of buildings
 - b) the ways of expressing the energy performance of buildings as calculated in accordance with the methodology

that are approved by the Secretary of State for the purposes of regulation 17A of the Building Regulations 2000 as amended, and for the purposes of regulation 7 of the Stamp Duty Land Tax (Zero Carbon Homes Relief) Regulations 2007.

The notice also:

- c) identifies the keeper of the register for the purposes of the Energy Performance of Buildings (Certificates and Inspections) (England and Wales) Regulations, regulation 30, and
 - d) describes the data to be lodged in accordance with the Energy Performance of Buildings (Certificates and Inspections) (England and Wales) Regulations, regulation 31(2).
2. It should be read in conjunction with the Tables Nos 1, 2 and 3 of approved calculation methods that can be downloaded from the Communities and Local Government website:
www.communities.gov.uk/publications/planningandbuilding/noticeapproval,
 and with the approved methods of calculating the asset and operational ratings as set out below.

Approved methodology

3. The approved **methodology** comprises the following calculation **methods**:
 - a) the Standard Assessment Procedure for the Energy Rating of Dwellings (SAP 2005)¹
 - b) approved software applications of SAP 2005 and RdSAP 2005² as indicated in Table 1

¹ SAP 2005; The Government's Standard Assessment Procedure for Energy Rating of Dwellings – 2005 Edition

² RdSAP 2005; means Reduced Data SAP 2005, an application of SAP 2005 for use in the energy assessment of existing dwellings where, during a site survey of the property, the complete data set required for a SAP calculation is not easily acquired

- c) the Government's Simplified Building Energy Model (SBEM)³
 - d) approved software interfaces to SBEM as indicated in Table 2
 - e) approved Dynamic Simulation Model (DSM) software packages as indicated in Table 2
 - f) the Government's Method for Calculating Operational Ratings for buildings (MCOR)⁴ and its software application
 - g) approved software applications of MCOR as indicated in Table 3.
4. In this approval:
- a) a reference to SAP 2005 includes a reference to any approved software application of SAP 2005
 - b) a reference to RdSAP 2005 includes a reference to any approved software application of RdSAP 2005
 - c) a reference to SBEM includes a reference to approved software interfaces to SBEM
 - d) a reference to MCOR includes a reference to any approved software application of MCOR.

The approved software application will be listed in Tables 1 to 3.

Calculating the energy performance of dwellings

For dwellings at construction completion

5. For the purposes of Regulations 17B (minimum energy performance requirements for buildings), 17C (new buildings), 17E (energy performance certificates on construction) and 20D (CO₂ emission rate calculations) of the Building Regulations 2000 as amended (and the equivalent Regulations in the Building (Approved Inspectors etc) Regulations 2000, as amended):
- a) the Target CO₂ Emission Rate (TER) and the Dwelling CO₂ Emission Rate (DER)
 - b) the Asset Rating, of a dwelling shall be calculated using SAP 2005.

³ The Simplified Building Energy Model (SBEM), its user interface iSBEM, User Manual and Modelling Guide can be viewed and downloaded at www.planningportal.gov.uk/england/professionals/en/1115314255835.html

⁴ The Government's Methodology for Calculating Operational Rating of Buildings which can be viewed and downloaded at www.communities.gov.uk/planningandbuilding/theenvironment/energyperformance/energyassessment/methodologysoftware/

For dwellings on sale or rent

6. For the purposes of Regulation 11 (energy performance certificates) of the Energy Performance of Buildings (Certificates and Inspections) (England and Wales) Regulations 2007 (the Energy Performance of Buildings Regulations), the Asset Rating of a dwelling shall be calculated using SAP 2005 or RdSAP 2005.
7. For the purposes of Schedule 2 (Predicted Energy Assessment) of the Home Information Pack (No. 2) Regulations 2007, the asset rating of a dwelling shall be predicted using SAP 2005.

Calculating the energy performance of buildings which are not dwellings

8. For the purposes of Regulations 17B (minimum energy performance requirements for buildings), 17C (new buildings), 17E (energy performance certificates on construction) and 20D (CO₂ emission rate calculations) of the Building Regulations 2000 as amended (and the equivalent Regulations in the Building (Approved Inspectors etc) Regulations 2000, as amended):
 - a) the Target CO₂ Emission Rate (TER) and the Building CO₂ Emission Rate (BER)
 - b) the Asset Rating, of a building which is not a dwelling shall be calculated using SBEM or an approved DSM.
9. For the purposes of Regulations 11 (Energy Performance Certificates) of the Energy Performance of Buildings Regulations, the Asset Rating of a building which is not a dwelling shall be calculated using SBEM or an approved DSM.
10. For the purposes of Regulation 17 (Display Energy Certificates) of the Energy Performance of Buildings Regulations, the Operational Rating of a building shall be calculated using MCOR or an approved software application of it.

Net annual CO₂ emissions for Stamp Duty Land Tax exemptions

11. For the purposes of Regulation 5 (Zero carbon home) and 7 (Approval of Methodology) of the Stamp Duty Land Tax (Zero-Carbon Homes Relief) Regulations 2007 the method of calculation shall be:
 - a) an approved software application of SAP 2005 that incorporates the calculation of a zero carbon home for SDLT purposes; or

- b) an approved software application of SAP 2005 that does not incorporate the calculation of a zero carbon home for SDLT purposes together with the web page calculator at www.bre.co.uk/sap2005.

Approved ways of expressing building energy performance

Dwellings

- 12. There is no approved way of expressing TERs and DERs.
- 13. The actual and potential energy performance of a dwelling shall be expressed in Predicted Energy Assessments and on Energy Performance Certificates as Asset Ratings calculated in two ways:
 - a) as an Energy Efficiency Rating which is an indicator of the energy costs associated with space heating, water heating, ventilation and lighting in average circumstances.
 - b) an Environmental Impact (CO₂) Rating which is an indicator of the annual CO₂ emissions associated with space heating, water heating, ventilation and lighting in average circumstances.

The ratings must be displayed on the graphic banding systems juxtaposed as shown in Figure 1.

Buildings which are not dwellings

- 14. There is no approved way of expressing TERs and BERs.
- 15. The energy performance of a building which is not a dwelling shall be expressed on Energy Performance Certificates as an Asset Rating which is an indicator of the calculated annual CO₂ emissions associated with space heating, water heating, ventilation, air conditioning and lighting in average circumstances. The Asset Rating must be displayed on the graphic banding system shown in Figure 2.
- 16. Subject to Regulation 18, the energy performance of a building which is not a dwelling shall be expressed on Display Energy Certificates as follows:
 - a) as Operational Ratings which are an indicator of the annual CO₂ emissions associated with the measured annual consumption of all energy used within the building during the relevant periods as defined in Regulation 15. The operational rating for the most recent period must be displayed on the graphic banding system shown in Figure 3.
 - b) the Operational Ratings for the most recent period, and up to two preceding periods if available, must also be expressed in a graphic following the model in Figure 3.

- c) as a stacked histogram of the disaggregated energy consumptions for the most recent period, and up to two preceding periods if available, following the model in Figure 3.

Keeper of the register

17. The Secretary of State has approved Landmark Information Group Limited as the keeper of the register for the purposes of the Energy Performance of Buildings (Certificates and Inspections) (England and Wales) Regulations, regulation 30 as follows
 - a) the domestic register for domestic energy performance certificates, associated recommendation reports and data on sale, construction and rent,
 - b) the non-domestic register for non-domestic energy performance certificates, associated recommendation reports and data on sale, construction and rent, and
 - c) the non-domestic register for display energy certificates, associated advisory reports and data.

Data to be lodged on the register

18. The data to be lodged in accordance with the Energy Performance of Buildings (Certificates and Inspections) (England and Wales) Regulations, regulation 31(2) is as follows:
 - a) data used to calculate energy performance, operational ratings and the associated certificates and reports
 - b) the results of the calculations of energy performance, operational ratings and associated certificates and reports.

Approval of commercial software calculation tools

19. Applications may be made to the Secretary of State for approval of software packages to form part of the methodology for the calculation of the energy performance of buildings, such as:
 - a) software applications of SAP 2005 and RdSAP 2005
 - b) software interfaces with SBEM

- c) Dynamic Simulation Models (DSMs)
 - d) software applications of the MCOR.
20. The criteria for approval and the procedures for applying for approval may be obtained from:

EPBD Programme
Department for Communities and Local Government
Tel: 020 7944 5353
Fax: 020 7944 5719

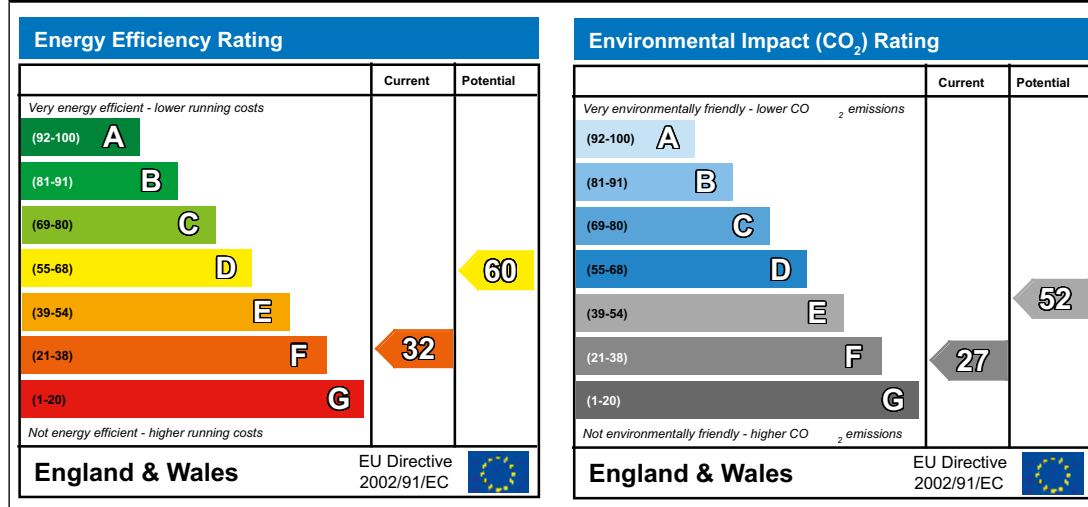
Email enquiries: Silvester.Aina@communities.gsi.gov.uk

21. Tables 1, 2 and 3 will be revised from time to time to include new software applications or new versions of existing ones as they are approved by the Secretary of State.

Signed by authority of the Secretary of State

Carol Sweetenham
an Assistant Secretary in the Department for Communities and Local Government

Figure 1: Graphical scales on which the Dwelling Asset Ratings for a dwelling must be superimposed



The example above shows how an energy efficiency rating of 32 and environmental impact rating of 27 for a dwelling should be expressed.

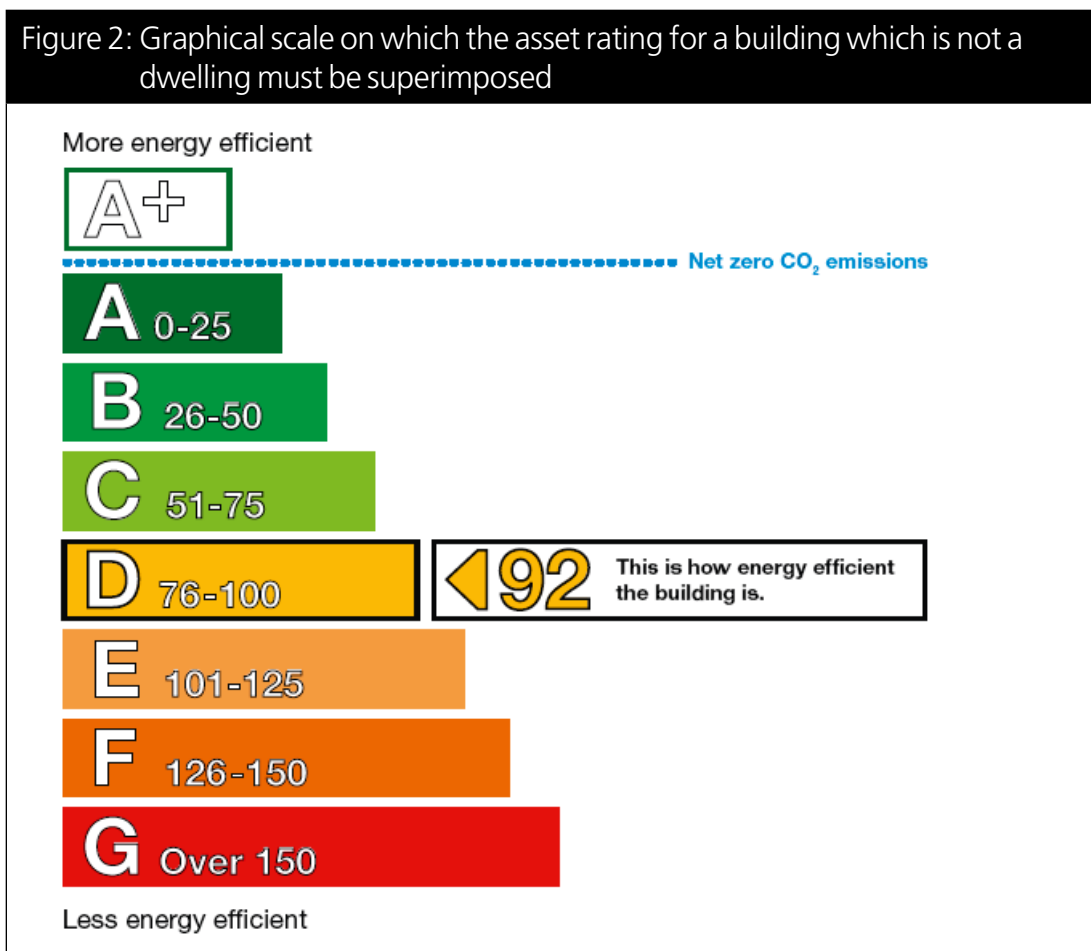
The rating should be aligned with the band that includes the rating, and should be in the same colour⁵ as the relevant band.

The graphs can be produced in any size provided that all information on them is easily legible. The graphs should always appear side by side as set out above.

The potential rating represents the improved rating that would be achieved if the cost-effective recommendations in a recommendation report⁶ were to be adopted, and should be displayed (where relevant) in the adjoining column.

⁵ where the graphs are produced in colour.

⁶ Regulation 10 of the Energy Performance of Buildings Regulations, regulation 17E(4) of the Building Regulations and regulation 12(4) of the Building (Approved Inspectors etc.) Regulations 2000 each require a recommendation report containing recommendations for the improvement of the energy performance of the building to accompany any Energy Performance Certificate produced by an Energy Assessor.



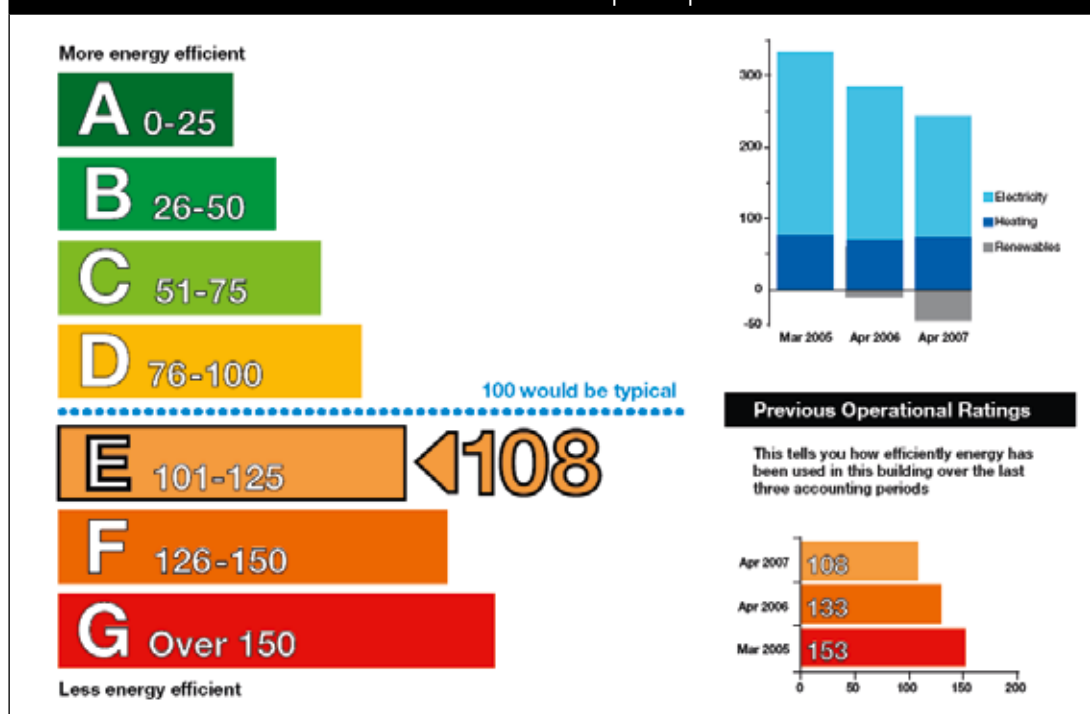
The example above shows how an asset rating of 92 for a building which is not a dwelling should be expressed.

The rating should be aligned with the band that includes the rating, and should be in the same colour⁷ as the relevant band.

The graph can be produced in any size provided that all information on it is easily legible.

⁷ where the graphs are produced in colour.

Figure 3: Graphical scales on which a Building Operational Rating and associated carbon dioxide emissions must be superimposed



The example above shows how an operational rating of 108 and associated carbon dioxide emissions for a building should be expressed. The most recent period is 2007, the preceding two periods are 2006 and 2005.

The rating should be aligned with the band that includes the rating, and should be in the same colour⁸ as the relevant band.

The graph can be produced in any size provided that all information on it is easily legible to the public and is recommended to be at least A3 in size (this aligns with the requirement that the Display Energy Certificate should be in a prominent place clearly visible to the public).

⁸ where the graphs are produced in colour.

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