



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

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NOTE

This document should be read in conjunction with the spreadsheets, listed in paragraph 2, which are available as downloads on the website. It may therefore not be practicable to supply all elements in alternative formats.

This is intended as a living document, with regular updates. The dates within the 'date of approval' column of each table also reference the updates and validity of this document.

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May 2007

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

1. This notice of approval takes effect from 10th May 2007 and sets out:
 - a) the methodology of calculation of the energy performance of buildings including methods for calculating the asset rating and operational rating of buildings; and
 - 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. Individual approvals take effect from the dates listed in tables 1 and 2.

Approved methodology

2. 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 as indicated in Table 1²;
 - c) the Government's Simplified Building Energy Model (SBEM)³;
 - d) approved software interfaces to SBEM as indicated in Table 2; and
 - e) approved Dynamic Simulation Model (DSM) software packages as indicated in Table 2.
3. In this approval:
 - a) a reference to SAP 2005 includes a reference to any approved software application of SAP 2005;
 - b) 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.⁴ 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.

¹ The Government's Standard Assessment Procedure for Energy Rating of Dwellings – 2005 Edition (SAP2005).

² Tables 1 and 2 can be downloaded from the Communities and Local Government website as separate spreadsheets.

³ Simplified Building Energy Model (SBEM) can be viewed and downloaded at <http://www.planningportal.gov.uk/england/professionals/en/1115314255835.html>

⁴ RdSAP consists of a system of data collection together with defaults and inference procedures, as defined by the rules given in Appendix S of SAP 2005 specification, that generate a complete set of input data for SAP calculations, and an output writer that produces Energy Performance Certificates and Recommendation Reports for the purposes of compliance with the Energy Performance of Buildings Regulations.

Calculating the energy performance of dwellings

4. 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:
 - a) the target CO₂ emission rate and the calculated CO₂ emission rate; and
 - b) the asset rating,of a dwelling shall be calculated using SAP 2005.
5. 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”):
 - a) the asset rating of a dwelling constructed at a time when Regulation 17C of the Building Regulations did not apply to the building work shall be calculated using RdSAP 2005; and
 - b) the asset rating of other dwellings shall be calculated using SAP 2005.

Calculating the energy performance of buildings which are not dwellings

6. For the purposes of regulations 17B, 17C, 17E and 20D of the Building Regulations 2000:
 - a) the target CO₂ emission rate and the calculated CO₂ emission rate; and
 - b) the asset rating,of a building which is not a dwelling shall be calculated using SBEM or an approved DSM.
7. For the purposes of Regulations 11 and 17 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.
8. For the purposes of Regulation 17 (display energy certificates) of the Energy Performance of Buildings Regulations, the method of calculating the operational rating is being finalised.

Approved ways of expressing building energy performance

Dwellings

9. The asset rating of a dwelling, as calculated using SAP 2005 or RdSAP 2005, shall be expressed in two ways: as an Energy Efficiency Rating and as an Environmental Impact (CO₂) Rating. Both indices are generated by SAP 2005:

- a) The Energy Efficiency Rating is an indicator of the energy costs associated with space heating, water heating, ventilation and lighting. It is expressed on a scale of 1 to 100, the higher the number the lower the running costs of the dwelling.
- b) The Environmental Impact (CO₂) Rating is an indicator of the annual CO₂ emissions associated with space heating, water heating, ventilation and lighting. It is also expressed on a scale of 1 to 100, the higher the number the lower the annual emissions.

10. Both ratings must be displayed on the graphic banding system shown in Figure 1.

Buildings which are not dwellings

11. The ways of expressing the asset ratings and operational ratings of buildings which are not dwellings are being finalised.

Approval of commercial software calculation tools

12. Applications may be made to the Secretary of State for approval of software calculation tools to form part of the methodology for the calculation of the energy performance of buildings, such as:

- a) software applications of SAP 2005;
- b) software interfaces with SBEM; and
- c) Dynamic Simulation Models (DSMs).

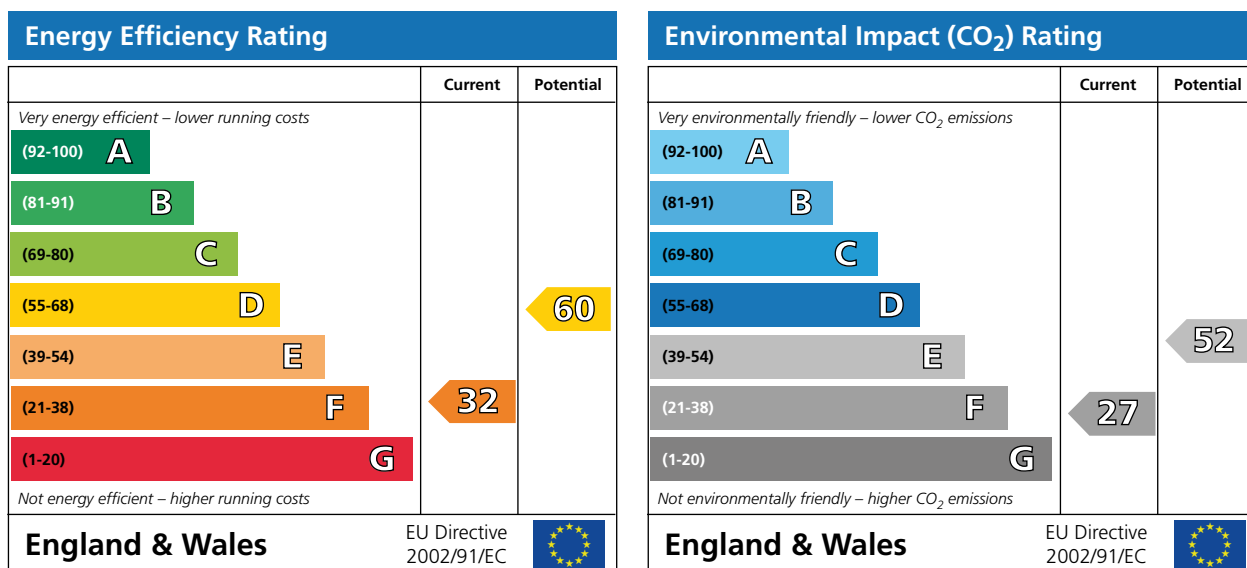
13. The criteria for approval and the procedures for applying for approval may be obtained from Sustainable Buildings Division, Department for Communities and Local Government (tel: 020 7944 5755; fax: 020 7944 5719; email enquiries: br@communities.gsi.gov.uk.).

14. Tables 1 and 2 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

Shona Dunn
an Assistant Secretary in the Department for Communities and Local Government

Figure 1: Graphical scales on which Dwelling Asset Ratings 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.