



## Standard Assessment Procedure (SAP)

### Definition

The Standard Assessment Procedure (SAP) is the methodology used by the Government to assess and compare the energy and environmental performance of dwellings. Its purpose is to provide accurate and reliable assessments of dwelling energy performances that are needed to underpin energy and environmental policy initiatives. SAP works by assessing how much energy a dwelling will consume, when delivering a defined level of comfort and service provision. The assessment is based on standardized assumptions for occupancy and behavior. This enables a like-for-like comparison of dwelling performance. Related factors, such as fuel costs and emissions of carbon dioxide (CO<sub>2</sub>), can be determined from the assessment.

SAP quantifies a dwelling's performance in terms of: energy use per unit floor area, a fuel-cost-based energy efficiency rating (the SAP Rating) and emissions of CO<sub>2</sub> (the Environmental Impact Rating). These indicators of performance are based on estimates of annual energy consumption for the provision of space heating, domestic hot water, lighting and ventilation. Other SAP outputs include estimate of appliance energy use, the potential for overheating in summer and the resultant cooling load.

### Background

SAP was developed by the Building Research Establishment (BRE) for the former Department of the Environment in 1992, as a tool to help deliver its energy efficiency policies. The SAP methodology is based on the BRE Domestic Energy Model (BREDEM), which provides a framework for calculating the energy consumption of dwellings.

In 1994 SAP was cited in Part L of the Building Regulations as a means of assessing dwelling performance. Reduced Data SAP (RDSAP) was introduced in 2005 as a lower cost method of assessing the energy performance of existing dwellings. SAP, RDSAP and BREDEM are used to underpin the delivery of a number of key energy and environmental policy initiatives, for example:

- Buildings Regulations for England and Wales and the Devolved Administrations
- HM Treasury's Stamp Duty exemption for zero carbon homes
- Energy Performance Certificates
- Code for sustainable homes
- Warm Front
- Green Deal
- Energy Company Obligation
- Local Authority stock reporting etc

### Objective

- To measure the energy efficiency of a project
- To compare different solutions for the same project to see which one is more energy efficient and why
- SAP calculations are used in all of the sustainable certification systems, like Code for Sustainable Homes, BREEAM and Ecohomes.