

# SAP Calculations

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What is a SAP Calculation?

SAP is the Government's 'Standard Assessment Procedure' for energy rating of dwellings. It is a compulsory component in complying with the Building Regulations for new dwellings and where existing buildings are converted to dwellings.

SAP provides a simple means of reliably estimating the energy efficiency performance of dwellings. SAP ratings are expressed on a scale of 1 to 100 the higher the number the better the rating. Thus SAP is similar to the fuel consumption of a car under standard driving conditions.

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How is it calculated?

SAP is calculated by a procedure contained in the Building Regulations, which predicts heating, and hot water costs. These depend on the insulation and air tightness of the house and the efficiency and control of the heating system.

SAP programs are used to enter data on the size of the house, its insulation levels, its ventilation system and its heating and hot water systems. SAP rating can then be submitted for Building Regulations approval and is checked by the local Building Control department.

The first part of the SAP calculations involves calculating a Target Energy Rating (TER) for the dwelling. The next step in the SAP report process is to calculate the Dwelling Emission Rate (DER). If this is equal to or less than the TER then the SAP rating shows a pass and the SAP calculations are complete.

If the DER is not equal to or less than the TER then we will liaise with you and suggest changes that will improve the DER to ensure that the SAP calculations show a pass.

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What is the difference between a SAP calculation and an Energy Performance Certificate?

The SAP calculation is the method used for demonstrating compliance with the Building Regulations whereas the Energy Performance Certificate enables the end user of the building to see how Energy Efficient the building is. The Energy Performance Certificate is very easy to understand at first glance whereas the SAP Calculation contains a lot of detailed

calculations and figures.

The two are linked though as the Energy Performance Certificate is calculated using the information contained within the SAP calculation.

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At what point should the SAP calculation be undertaken?

It is recommended that a Design SAP calculation be carried out at early design stage to check that the building will comply with the carbon emission requirements contained within the calculation. If the requirement is not met then changes will need to be made to achieve compliance. An 'As Built' calculation will then be required at the end of the project.

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What we need to calculate the SAP for you

You will need to provide us with copies of your plans, elevations and sections through the building along with the specification for the heating and hot water systems. To assist you we have a SAP Questionnaire for New Dwellings which advises you of all the information we require.

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Do I need a SAP calculation for an extension?

No but as a general rule you will need to keep the glazed area to less than 25% of the floor area of the extension. However if an energy analysis of the extension is undertaken the glazing can often be increased. MSBC are experienced at preparing these calculations.

Increased areas of glazing can be 'traded against' improving the insulation values of the walls/floor/roof and/or undertaking 'consequential improvements' to the existing house. For example changing an old boiler to a modern efficient boiler or installing double glazing.

There is a separate SAP Questionnaire for Extensions for extensions which you will need to complete along with providing copies of the Plans, Elevations and Section of the extension and the existing house.

As the method for demonstrating compliance usually involves 2 SAP calculations the fees are a little higher for extensions at around £160 + VAT. If you send us copies of your plans we will be pleased to provide you with a fixed quote.

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Condensation Risk Analysis

As part of the calculation procedure we will include, at no extra cost, a 'condensation risk analysis' through the various elements of construction. (This will be subject to recognized materials being used where the vapour resistivity is known).

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How long will it take?

When providing a quote we will always provide you with a timescale for providing the calculation. This is generally two weeks. We can provide a quicker turn - around service if necessary. PDF copies of the calculation will be e-mailed to you as soon as the calculation is done.

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How much does it cost for a SAP calculation?

The fees for SAP calculations depend upon the complexity of the scheme but start at £50 which includes the Design Calculation, As Built Calculation and Energy Performance Certificate. Should the design calculation show that the building fails to meet the Carbon Emissions Target we will advise you of the changes you should make and recalculate at no extra charge. Minor changes can also be made during construction without further charge.

The cost of providing the actual Energy Performance Certificate will be clearly marked on the quote. There is no charge for producing the Predicted Energy Assessment at the design stage.

For multiple dwellings of similar house types, conversions or extensions, please contact us for a bespoke quotation.

We do not ask for any payment until the calculation has been completed. We will then e-mail you a print out of our survey notes along with the invoice. The full SAP calculations and Predicted Energy Assessment will be e-mailed to you when the invoice has been settled. Payment can be made by BACS transfer to speed up the process. You may choose whether you wish to pay for the Energy Performance Certificate at the design stage or wait until completion.

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What is included in our fee?

We will provide you with a Design SAP calculation based on the information you have provided which will give you the SAP rating together with the DER and TER Carbon Emission calculations. We will give you practical advice on any changes that may need to be made to achieve compliance. We will also include in the price a Predicted Energy Performance Certificate which can be used for marketing purposes during construction.

On completion of the work we will provide you with an "as built" SAP calculation and Energy Performance Certificate for display in the property. This is on the assumption that there have been no substantial changes in the design of the property during the construction work. All our information is e-mailed to you as PDF copies, hard copies can be provided at a nominal fee. We will register the property & Energy Performance Certificate with Landmark as part of our service.

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Will I need to have my house air tested?

Yes &ndash; the Design SAP will make an assumption on the air testing result, we usually assume a figure of 10 but this may be less (i.e more air tight) in order to achieve a DER less than the TER. On completion the Building Regulations will require a pressure test and the result is entered in the As Built SAP. If the result is too high and the building no longer meets the required DER then remedial work may be required along with a re-test. We do not undertake air testing but our associate company Air Testing South West will be pleased to provide you with a quote for this.

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SBEM Calculations

SBEM calculations required on Commercial Buildings and follow similar procedures to the SAP calculations. We do not provide SBEM calculations but our associate company Air Testing South West will be pleased to provide you with a quote for this

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