



BRINGING OUR NEW EBOOK ON

EVERYTHING YOU NEED TO KNOW ABOUT SAPS

We will help developers, architects
and builders keep compliant

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What Are SAP Calculations?

SAP stands for 'Standard Assessment Procedure' and is the government's method for calculating the energy performance of dwellings.

These calculations are only necessary for residential properties. In England, your SAP calculations measure two elements; the Dwelling Emission Rate (DER) and Dwelling Fabric Energy Efficiency (DFEE).

The calculations determine a Target Emissions Rate (TER) and a Target Fabric Energy Efficiency (TFEE) rate. The DER and DFEE must be lower than the TER and TFEE.

SAP calculations come in two formats, L1A (new builds) and L1B (extensions and conversions).

Why Do I Need SAP Calculations?

The calculations are required by Part L (England & Wales) of building regulation standards. These documents are concerned with the conservation of fuel and power.



How Are SAP Calculations Completed?

In order for our team to carry out SAP calculations, the customer or their agent should provide as much information as possible.

This includes, but is not limited to the following: -

- Floorplans
- Elevations
- Sections
- Site Plan
- Insulation type/thickness
- U-value of openings
- Specification of heating systems
- Hot water generation
- Percentage of low energy lighting
- Specification of ventilation system
- Renewable technologies
- Accredited construction details



New Build - SAP Calculations Information

For new builds, your SAP calculations will be divided into two reports being the design stage (prior to construction) and the as built stage (when the property has completed).

Design Stage Report

Before construction begins, our team will assess and approve the construction details of the property to ensure the property or properties meet building control compliance.

This data is input into calculation software in order to produce TER and TFEE rates and to demonstrate that the building is DER and DFEE compliant.

A 'predicted energy assessment' is produced.

As Built Report

Once the building is complete, the construction details are re-assessed, and any final details or amendments are included. These may include the air tightness test, boiler changes.

The "As Built" SAP is produced together with the Energy Performance Certificate.



Extensions - SAP Calculations Information

SAP Calculations for extensions are divided into 'notional' and 'proposed'.

Notional Report

Our team will assess the construction details of the entire property, plus the proposed extension or conversion. From this, they will create a notional report with benchmarked data sometimes known as the minimum standards.

To create the report, the construction detail data is input into SAP calculations software and this produces the notional TER and TFEE rates and DER and DFEE measurements.

Proposed Report

The proposed report will use the benchmarked data (minimum standards) for existing elements and the actual elements for the extension/conversion. Any upgrades to the property will also be added to the proposed report.

This data is then input into SAP calculations software in order to produce the proposed TER and TFEE rates and DER and DFEE measurements.

It is expected that the original parts of the building will fail current building control regulations hence the fails shown in both the notional and proposed.

In order to pass compliance, the dwelling emission rate (DER) of the proposed must be equal to or better than the minimum requirements set out in the notional calculation.



Conversions - SAP Calculations Information

New dwellings that have been created as a result of a material change, or a change in energy status, require SAP Calculations and an Energy Performance Certificate to support the sign off from Building Control.

Unlike new build dwellings, there is no requirement for SAP Calculations for conversions to demonstrate compliance with any minimum carbon dioxide emission rates (e.g. DER/TER, Part L1B).

Part L1B does, however, stipulate minimum thermal standards (U-values) for any existing and new construction fabric. Minimum performance efficiencies are also given for heating, hot water and ventilation systems.

When completing a Part L1B SAP calculation, we will advise whether the project specification complies with the minimum requirements of Building Regulations. If any shortfalls or issues are identified, we will also recommend appropriate specification changes as part of our works.

It is also worth noting that additional Government Legislation has introduced a Minimum Energy Efficiency Standard for rental properties which makes it illegal to let a dwelling in England and Wales with an EPC rating of an F or G.



When Should SAP Calculations Be Carried Out?

You should carry out SAP calculations before building work starts. This is so you can be confident that the plans and specifications will achieve a pass prior to any works being carried out.

How Long Will SAP Calculations Take?

This entirely depends on the timeline of your construction project. Generally, we aim to complete all reports within 5–10 working days after request.

Why Should I Care About SAPs?

In order to meet current building regulations, home builders will need to gain a 'pass' on their SAP Calculations. Without it, building control will not sign off the development, extension or conversion and the property cannot be let or marketed for sale.

There are other reasons to care about SAP. A good SAP assessor can help the designer or architect to shape the energy profile of a new dwelling – minimising its energy use and carbon emissions.

Another key point is that the SAP rating broadcasts the energy performance of the property, and in turn informs the Energy Performance Certificate (EPC) which all buyers and tenants see.



What Happens If My Building Fails?

New Build

It is very important to arrange your SAP calculations before building work commences, so that should the building be failing to meet building regulation standards, our SAP assessors can give you advice on how to improve.

This becomes more difficult and expensive later in the project, as the scope of changes available becomes more limited. We aim to provide comprehensive support and guidance throughout the entire SAP process. Whereas many companies will only carry out the calculations, we provide our clients with a consultancy service to make sure our customers have the information and advice they need to pass the SAP.

Conversions and Extensions

It is expected that the original parts of the building will not pass current building control regulations hence the fails shown in both the notional and proposed.

In order to pass compliance, the dwelling emission rate (DER) of the proposed must be equal to or better than the minimum requirements set out in the notional calculation.



Why Should I Care About U Values?

Thermal transmittance, also known as U-value, is the rate of transfer of heat through a structure (such as a wall, roof or floor) divided by the difference in temperature across that structure. The units of measurement are W/m^2K and the lower the value, the better the efficiency. We provide these for Free to our clients to keep for future reference.

In order to rent a property, the Energy Performance needs to be a minimum of an E rating and within the next 3-10 years, this is likely going to change to a C. U Value Calculations could make all the difference in obtaining a higher rating.

Our Recommendations

We strongly recommend that all clients who are extending or converting to upgrade as many elements as possible to achieve the highest possible energy efficiency rating.

This is because upgrading now that you are extending or converting is the most cost-effective time to do so. Please do feel free to contact one of our team anytime who can discuss your specific site requirements.



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