

A Guide to SAP Calculations for Extensions

SAP calculations are a Building Regulations requirement for all new houses & conversions and some extensions. The Standard Assessment Procedure (SAP) is a measure of the energy efficiency of a property and must be carried out by an accredited company such as MES Energy Services.

What does SAP measure?

SAP is the calculation of the annual energy cost for space heating, water heating, ventilation and lighting. It also quantifies the total CO₂ emissions from the property each year.

When do extensions need SAP Calculations?

SAP Calculations are normally required on extensions that have a large amount of glazing (equivalent to more than 25% of the total floor area of the extension)

What is involved?

We create an energy model of the property with the proposed extension and calculate the total annual CO₂ emissions from this. We also create a 'notional' model with standard amounts of glazing and insulation values etc. Providing the proposed extension has lower annual emissions than the notional extension it conforms to Building Regulations SAP requirements.

This means you can offset the heat loss from the additional glazing by, for example, improving the thermal value of other elements.



Do you have to assess the existing house?

Not always. As long as the heat loss from the glazed areas can be offset by making improvements in the thermal efficiency of the floor, walls and roof of the extension we can assess the extension alone.

What influences SAP?:

- The shape & orientation of the extension: south facing extensions benefit from passive solar gain making it easier to comply
- Thermal efficiency of walls, floors and roof
- Thermal efficiency of windows and doors
- Boiler efficiency
- Secondary heating: open fire's score very badly however enclosed log burners score well
- Underfloor heating tends not to score well unless connected to a heat pump
- Controllability of heating systems
- Solar panels, heat pumps, bio fuel boilers, certain wind turbines etc. can improve SAP ratings

Other considerations:

If the existing house is also benefiting from energy efficiency improvements these can also be taken into account. For example, replacing an old, inefficient boiler can have a very positive effect on the CO₂ emissions of the new extension

What do you need from us?

To produce SAP calculations for extensions we require a full set of scale plans of the proposed extension (inc. sections, elevations and a site plan showing North). Plans can either be posted or emailed in most formats. We also need our SAP Form (Extensions) completing which we can email to you or it can be downloaded directly from our website.

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