

## Technical note: TNOTE:05

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### A SUMMARY OF CHANGES FROM SAP 2012 TO SAP10

Issue 1.0

## DOCUMENT REVISIONS

Documents will be revised by issue of updated editions or amendments. Revised documents will be posted on the website at <https://bregroup.com/sap/sap10>.

Technical or other changes which affect product recognition requirements (for example) will result in a new issue. Minor or administrative changes (e.g. corrections of spelling and typographical errors, changes to address and copyright details, the addition of notes for clarification etc.) may be made as amendments.

The issue number will be given in decimal format with the integer part giving the issue number and the fractional part giving the number of amendments (e.g. Issue 3.2 indicates that the document is at Issue 3 with 2 amendments).

Users of this document should ensure that they possess the latest issue.

## DOCUMENT REVISION LOG

DATE	VERSION NO.	AMENDMENT DETAILS	APPROVED BY
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## TABLE OF CONTENTS

1.	INTRODUCTION .....	4
2.	LIST OF CHANGES .....	4

Issue: 1.0	A SUMMARY OF CHANGES FROM SAP 2012 TO SAP10	TNOTE:05
Date: 25/07/2018		Page 3 of 5

## 1. INTRODUCTION

The UK's National Calculation Methodology for energy rating of dwellings, known as the Standard Assessment Procedure (SAP) is updated from time to time. The latest version used for all official purposes is SAP 2012.

An updated version of SAP, SAP 10.0, has been published to allow users to examine changes ahead of its eventual use.

This version reflects the consultation and Government response on proposed changes to SAP.<sup>1</sup>

This Technical Note has been prepared to list the changes that have been made to SAP 10.0 compared to SAP 2012. It does not list trivial changes, such as the correction of grammatical errors, minor rewording of text to improve readability, or other small adjustments that have no material impact.

## 2. LIST OF CHANGES

1. CO<sub>2</sub> emission factors, primary energy factors and fuel prices, have been updated using the latest data available. The method to derive them is unchanged from SAP 2012 except for the fuel price attributed to electricity exported to the grid, which has been reduced to the electricity wholesale price.
2. The assumed heating pattern has been changed to a consistent daily pattern for all days of the week – previously a different pattern was used at the weekend.
3. Additional design flow (heat emitter) temperature options have been provided for heat pumps and condensing boilers, which affect their efficiencies.
4. Default heat pump efficiencies have been updated.
5. Default distribution loss factors associated with heat networks have been increased.

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<sup>1</sup> <https://www.gov.uk/government/consultations/public-consultation-on-proposals-to-amend-the-standard-assessment-procedure-sap>

Issue: 1.0	A SUMMARY OF CHANGES FROM SAP 2012 TO SAP10	TNOTE:05
Date: 25/07/2018		Page 4 of 5

6. The calculation of lighting energy has been updated to allow recognition of new lighting types with higher efficacy.
7. The options for entering heat losses from thermal bridges have been revised.
8. An additional thermal bridge type has been added for junctions in roof-rooms which don't fit any of the existing categories.
9. The calculation of hot water consumption has been adjusted to account for shower flow rate.
10. The treatment of mechanical ventilation system heat recovery and aerodynamic performance has been revised.
11. The default efficiencies of some solid fuel heating appliances have been updated.
12. The air flow rates associated with chimneys and flues have been revised.
13. SAP 2012 used a fixed assumption for the proportion of electrical energy generated by Photovoltaic (PV) systems which is consumed within the dwelling. This has been replaced by a formula which also includes recognition of the presence of battery storage.
14. The impact of PV diverters<sup>2</sup> is now taken into account.
15. An option to allow the overshadowing factor used for the PV calculation to be taken from Microgeneration Certification Scheme data has been added.
16. The assessment of summer internal temperatures has been refined and the blind/curtain use factor has been revised.
17. The air-conditioning efficiency ('SEER') table has been updated.
18. The treatment of heat losses from heat interface units (used with heat networks) has been adjusted.

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<sup>2</sup> 'PV diverters' are devices which divert electrical energy from PV systems to heat water using an electric immersion heater in a hot water cylinder, that would otherwise be exported to the grid.

Issue: 1.0	A SUMMARY OF CHANGES FROM SAP 2012 TO SAP10	TNOTE:05
Date: 25/07/2018		Page 5 of 5