

Conventions (v 11.0) for RdSAP 9.93 and 9.94 **FINAL**

This document contains amended and additional conventions (v 10.0) applicable to the RdSAP 2012 version 9.92 and is aligned with the RdSAP version 9.93 and 9.94. This list of conventions will be extended as appropriate.

Issue date marked with * (e.g. amended 31 Dec 2017*) Indicates that some paragraphs were deleted from a convention.

Amended and additional conventions (v11.0) are indicated by light blue background.

This edition of the Conventions supersedes all previous editions and, where any Convention is in conflict with the published SAP specification, the Convention takes precedence.

#	Topic	Conventions	Issue date
1.01	Use of RdSAP	RdSAP is used to produce Energy Performance Certificates (EPCs) for existing dwellings only. Refer to Scheme Guidance for use of RdSAP Assessment.	Sept 2009 amended Jan 2012 amended Dec 2012 amended April 2015 amended 31 Dec 2017* amended July 2018
1.02a	Flat or maisonette	A dwelling that does not extend to all storeys of the building is a flat or maisonette. RdSAP makes no distinction between flats and maisonettes as regards calculations; it is acceptable to select either type as definitions vary across the UK.	March 2010 amended Mar 2011
1.02b	Bungalow	A bungalow is a dwelling with all of the habitable accommodation on one floor. This excludes chalet bungalows and bungalows with habitable loft conversions, which are treated as houses.	Jan 2019
1.03	Address close to England/Scotland border	Assessors must ensure that the correct country is identified so that the EPC will be lodged in the appropriate register.	April 2015

#	Topic	Conventions	Issue date
1.04a	Self-contained dwelling attached to or forming an extension of another building	<p>A property can have an additional building unit (e.g. an 'annexe') which, if it is self-contained, and meets the "building" definition, needs to have its own EPC.</p> <p>If a dwelling is made-up of a several units with separate addresses but used as a single occupancy, then one EPC can be produced.</p> <p>A building altered for separate self-contained usage could be indicated by the accommodation having its own cooking and bathing facilities and its own access (from the outside, or via a communal corridor) and will need a separate EPC. The additional presence of an internal connecting door between the dwelling and another building does not prevent the dwelling from being treated as self-contained.</p> <p>An example might be a self-contained flat in a building.</p> <p>If the 'annexe' is not self-contained see 1.04b.</p>	<p>April 2015 amended Aug 2016 amended 31 Dec 2017 amended Jan 2019</p>
1.04b	Not self-contained separate part of dwelling	<p>If there is a separate part of the dwelling which is not self-contained but contains rooms that are used as part of the main dwelling, e.g. bedrooms, study etc. in a large detached garage or outbuilding converted into part of the living accommodation of a main property:</p> <ul style="list-style-type: none"> - if heated by the main heating system (as defined for the main dwelling), include in the assessment of the main dwelling and a single EPC for the main dwelling to be issued - otherwise omit from the assessment. 	<p>June 2016</p>
2. Measurements and geometry			
2.01	Measurements	<p>State on site survey notes/plans whether the dimensions recorded are external or internal. When measuring internally, measure between the finished internal surfaces of the walls bounding the dwelling. Where that cannot be done directly (i.e. when measuring room by room) include an allowance for the thickness of internal partitions.</p> <p>Measure all perturbations (e.g. bay windows) but disregard chimney breasts unless the assessor considers them significant e.g. large inglenook.</p> <p>False ceilings should be disregarded (i.e. where a room has a lower ceiling than the adjacent rooms.)</p>	<p>Sept 2009 amended Aug 2014 amended 31 Dec 2017 amended Nov 2018</p>
2.02	Precision of lengths	<p>Measure to two decimal places (0.01 m) or better.</p>	<p>Sept 2009 amended 31 Dec 2017</p>

#	Topic	Conventions	Issue date
2.03	Sheltered wall length (unheated corridors)	<p>Always include in the heat loss perimeter</p> <p>When a dwelling (flat or maisonette) has a sheltered wall to an unheated corridor on more than one storey the sheltered length is the total for all storeys with a sheltered wall (example: 2 storeys with sheltered wall on each storey, length of sheltered wall is 5 m on each storey: enter 10 m for the sheltered length).</p> <p>The sheltered wall can be in any building part but must be recorded as an alternative wall (see 2.13).</p> <p>Where the sheltered wall extends over more than one building part, e.g. it extends across the main building and an extension, assign the sheltered wall length to the building part with the longer sheltered wall and deduct the relevant amount from the heat loss perimeter of the other. Example: total unheated corridor length is 10m of which 2m is in the main building part and 8m in the extension. Record the extension as having the sheltered alternative wall of length 10m, increase the heat loss perimeter of the extension by 2m and deduct 2m from the heat loss perimeter of the main dwelling.</p>	<p>Sept 2009</p> <p>amended Oct 2010</p> <p>amended April 2015</p> <p>amended Aug 2016</p> <p>amended 31 Dec 2017</p>
2.04a	Habitable room count	<p>Habitable rooms include any living room, sitting room, dining room, kitchen/diner, bedroom, study and similar; and also a non-separated conservatory.</p> <p>Excluded from the room count are: any room used solely as a kitchen, utility room, bathroom, cloakroom, en-suite bathroom/shower room/toilet or similar; any hallway, stairs or landing; and also any room without access to natural daylight .</p> <p>For a kitchen to be a kitchen/diner it must have space for a table and 4 chairs.</p> <p>A lounge/dining room where the door was temporarily removed (i.e. architrave and hinges still there) is two habitable rooms.</p> <p>A lounge/dining room with the door permanently removed (hinge holes filled, etc.) is one habitable room.</p> <p>A non-separated conservatory adds to the habitable room count if it has an internal quality door between it and the dwelling. If a conservatory is open to the rest of the dwelling it is NOT counted as a separate room.</p>	<p>Sept 2009</p> <p>amended April 2015</p> <p>amended Aug 2016</p> <p>amended 31 Dec 2017</p> <p>amended July 2018</p>
2.04b	Heated habitable room count	<p>Includes all habitable rooms heated by either main heating system(s) or fixed secondary heating</p> <p>Bedrooms with only open fire-places are disregarded from the heated habitable room count when identifying the heating systems (main and secondary).</p>	<p>June 2016</p> <p>amended 31 Dec 2017</p>

#	Topic	Conventions	Issue date
2.05	Basements (whether to include in the assessment)	<p>Include when accessed via a permanent fixed staircase such that one is able to walk downwards facing forwards and either:-</p> <ul style="list-style-type: none"> - basement is heated via fixed heat emitters, or - basement is open to the rest of the dwelling, i.e. no door. <p>Does not necessarily contain habitable rooms.</p>	<p>Sept 2009 amended April 2015 amended Jan 2019</p>
2.06	<p>Roof rooms / Attics (whether to include in the assessment and rules for detailed measurements)</p> <p>See also diagrams in Appendix 2.</p> <p>For U-values see Appendix 4</p>	<p>Include when accessed via a permanent fixed staircase such that one is able to walk downwards facing forwards. Does not necessarily contain habitable rooms.</p> <p>For a roof room to be classed as such and not a separate storey, the height of the common wall must be less than 1.8 m for at least 50% of the common wall (excluding gable ends or party walls), otherwise it is a separate storey. The common wall is a vertical continuation of the external wall of the storey below. See a diagram in Appendix 2.</p> <p>If all elements of the roof room (ceiling/slope/stud/gable) have known insulation details and the U-values are available or taken from Appendix 4 on a basis of the type and thickness of insulation, the default U-value can be overwritten whilst leaving the RdSAP assumed areas as is.</p> <p>To achieve better precision, known U-values can be applied to measured areas of roof room elements; Detailed measurements of all elements are recommended only if evidence exists that the ceiling/slope/stud wall/gable wall have different levels of insulation and their U-values are known or taken from Appendix 4 .</p> <p>Party walls between roof rooms in dwellings to be assumed the same as external walls; U-values should be taken from SAP2012 Tables S6, S7 and S9.</p> <p>Where detailed measurements are made and the floor area of the parts of the dormer windows protruding beyond the roof-line is less than 20% of the floor area of the roof room, measure the elements of the roof room as if the dormers were not there. Otherwise total the vertical elements of all dormers in that building part and enter as stud wall and the flat ceiling elements as flat ceiling.</p> <p>A roof room is classified as "connected" only if there is another building part of the same dwelling with a storey (roof room or normal storey) at the same level; no assumptions are to be made about an adjacent property.</p>	<p>March 2010 amended Jan 2012 amended Aug 2014 amended 31 Dec 2017 amended May 2019</p>

#	Topic	Conventions	Issue date
2.07	Rooms within a Mansard roof	A storey having non-vertical walls of at least 70° pitch constitutes a separate storey; it is not treated as roof rooms. Use alternative wall if appropriate.	March 2010
2.08	Whole dwelling (or building part) within roof	<p>When the property or a building part of it is a single storey entirely located within a roof, model as:</p> <ul style="list-style-type: none"> - lowest occupied level - timber frame construction of appropriate age band - room height must be entered as 2.2 m - include area and perimeter measurements as a normal storey - enter roof as pitched roof. <p>For dwellings with non-timber gables treat gable walls as “alternative wall”. If there are two storeys within the roof, enter the lower storey as above and the upper storey as rooms-in-roof.</p>	<p>March 2010 amended 31 Dec 2012 amended Sep 2018</p>
2.09	Porches (Whether to include in the assessment)	<p>If heated always include (separated or not). If external, not heated and thermally separated, - disregard. If internal, not heated and thermally separated, - disregard.</p>	Sept 2009
2.10	Mezzanine floor	<p>Enter the part of the property above and below the mezzanine deck as a two storey extension. Treat the remaining part as a single level with the full floor to ceiling/roof height.</p> <p>If the mezzanine is located such that it has no heat loss perimeter then assign a nominal 1 m perimeter to each floor of the mezzanine part and deduct 1 m from the heat loss perimeter of the other part.</p>	<p>March 2010 amended Oct 2010</p>
2.11	Vertical extension	<p>Where an extension has been built over part of the existing dwelling, divide the part built over into two, one of which has “same dwelling above” and for the other describe the roof construction and insulation. Enter the new upper floor as an extension with “same dwelling below” and the original part with “same dwelling above” for the roof description.</p> <p>It is possible for an extension to be both above and alongside the rest of the dwelling. In this case divide the extension into two, one above and the other alongside.</p> <p>A roof room cannot be a vertical extension in its own right</p>	<p>March 2010 amended Mar 2011 amended Dec 2012 Amended Sept 2018</p>

#	Topic	Conventions	Issue date
2.12	More than 4 extensions	Add together floor areas and exposed perimeters of extensions (or add extension to main dwelling) to reduce to four extensions. Combine parts having the most similar age bands and thermal/construction characteristics (refer to SAP Appendix S for U-values of relevant constructions). Use alternative wall where appropriate.	March 2010 amended March 2011 amended Sept 2018
2.13	Alternative wall (also see 2.03)	<p>An alternative wall can be:</p> <ul style="list-style-type: none"> (i) A sheltered wall (to unheated corridor), or (ii) A wall that has a construction type or heat-loss characteristics (U-value) different from the main external wall <p>Always include the alternative wall in the assessment in case (i); and disregard it in case (ii) if it is less than 10% of total exposed wall area of the building part (including windows and doors).</p> <p>If there is both a sheltered wall and one with different construction type or U-value, treat the sheltered wall as an alternative wall and split the dwelling into two parts to allow for the wall with the different construction type or U-value.</p> <p>For stone walls assess thickness at each external elevation and at each storey and use alternative wall if the thickness varies by more than 100 mm, see also 2.22.</p>	March 2010 amended Jan 2012 amended Dec 2012 amended April 2015 amended Aug 2016 amended 31 Dec 2017
2.14	Definition of a "window"	<p>A window is an opening in an external wall or roof of a building, fitted with glass or similar material, usually in a frame, that admits light.</p> <p>A door may be treated as a window if it is considered to be highly glazed.</p> <p>Examples of highly glazed doors are patio doors, fully glazed doors or french doors</p> <p>If in doubt, measure it and treat as a window if glazing area is 60% or more.</p>	March 2010 amended Dec 2012 amended April 2015 amended 31 Dec 2017 amended July 2018

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2.15	Window area	<p>Consider the whole dwelling (windows, glazed doors and roof lights), including any extensions (but not thermally separated conservatories).</p> <p>Include all windows within the heat loss perimeter (e.g. door surrounds, window between a property and a separated conservatory, window into an unheated corridor or a porch, etc.).</p> <p>Typical applies if the surface area of the glazing in the dwelling is essentially as would be expected of a typical property of that age, and size. Use this category even if there is slightly more or less glazing than would be expected.</p> <p>More than typical applies if there is significantly more surface area of glazing than would be expected, perhaps because there is a sun room or patio doors have been added.</p> <p>Less than typical applies if there is significantly less glazing than would be expected. This is rare as homeowners tend not to take out windows, but a property may have an unusual design with few windows.</p> <p>Much more than typical and Much less than typical should be used for those dwellings with very unusual amounts of glazing; such as a glass walled penthouse flat or a Huf Haus. Due to this option allowing measurements of each window to be accounted for, this option should also be used if a dwelling has a mixture of glazing types e.g. single, double, secondary and triple, or a mixture of glazing gaps.</p> <p>See also convention 3.12b.</p>	<p>March 2010 amended Mar 2011 amended April 2015 amended 31 Dec 2017 amended May 2019</p>
2.16	Secondary glazing	<p>If single glazing with secondary glazing, record as secondary glazing.</p> <p>If double-glazing with secondary glazing, record as newer double glazing (newer double glazing means 2002 or later in E&W, 2003 or later in Scotland, 2006 or later in N. Ireland).</p> <p>If secondary glazing has been removed in summer, enter as above only if assessor can confirm that the panels exist and can be re-fitted. Evidence to be recorded on site notes.</p>	<p>March 2010 amended Mar 2011</p>

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2.17	Sun room	For a highly glazed part of the dwelling, such as a sun room, which does not meet the criteria for a conservatory (50% of walls and 75% of roof glazed), in most cases use the glazing option of "more than typical". That adds 25% to the total glazed area of the dwelling. If you deem that this is not appropriate, assess window area by either: a) measuring all windows and roof windows throughout the dwelling, or b) measuring all windows and roof windows in the sun room, and use Table S4 to obtain the window area of remaining part of dwelling which is entered as a single window with orientation East. Record method used in site notes.	Oct 2010 amended Dec 2012
2.18	Dimensions	Do not mix internal and external measurements. If a basement or roof room is included in the assessment, it is likely that internal dimensions will be used throughout the dwelling.	Amended Dec 2017
2.19	Store rooms and utility rooms (whether to include in the assessment)	If heated always include. If accessible only via a separate external door and not heated, disregard. If directly accessible, not heated and thermally separated, disregard.	Oct 2010
2.20	Garages (whether to include in the assessment)	If heated from main heating system, always include. The presence of a boiler within the garage does not make it heated.	Oct 2010
2.21	Dwelling adjacent to commercial premises	If a dwelling or part of a dwelling has commercial premises below record as partially heated space below. If a dwelling or part of a dwelling has commercial premises above record as another dwelling above. If a dwelling has commercial premises alongside it, treat the separating wall as a party wall.	March 2011 amended April 2015

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2.22	Wall thickness (per building part)	<p>Measure wall thickness in mm of each building part and any alternative wall within a building part. Evidence is required for each different thickness.</p> <p>It can be measured at door or window reveals or by internal/external measurement comparison (which can be direct measurement or estimated by counting bricks).</p> <p>Where thickness varies a little for the same construction use the average of the measured values.</p> <p>For stone walls see convention 2.13.</p>	<p>January 2012 amended Dec 2012 amended Aug 2014 amended 31 Dec 2017 Amended Sep 2018</p>
2.23	Sloping sites	<p>Where an individual wall (elevation) is not a heat loss wall for its full height (because of stepped arrangements either within the dwelling or between the dwelling and an adjacent one) obtain the “effective heat loss perimeter” for the individual wall as follows:</p> <ol style="list-style-type: none"> 1. Where documentary evidence is available use it to calculate the wall’s heat loss area. Divide this area by the room height to obtain the “effective heat loss perimeter”. 2. Where documentary evidence is not available but the assessor is able to measure the heat loss area, this area is divided by the room height to obtain the “effective heat loss perimeter”. 3. If neither 1 nor 2 is possible, make a visual estimation and use these guidelines: <ol style="list-style-type: none"> a. if height of heat loss area is not more than 25% of the room height, the “effective heat loss perimeter” is zero (disregard as heat loss wall); b. if height of heat loss area is more than 75% of the room height, “effective heat loss perimeter” is equal to the actual heat loss perimeter; c. if height of heat loss area is more than 25% and less than or equal to 75% of the room height, the “effective heat loss perimeter” should be considered to be 50% of the wall’s actual heat loss perimeter. 4. If estimation cannot be made, use 3 c. <p>The “effective heat loss perimeter” of the individual wall is then included in the heat loss perimeter of the building part.</p>	<p>August 2014</p>

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2.24	Party wall lengths	<p>To be recorded in all cases where a party wall is present.</p> <p>Party wall is any wall between the dwelling and:</p> <ul style="list-style-type: none"> - another dwelling; - commercial premises; - a heated corridor or stairwell in blocks of flats; - a heated common area. <p>Note: a heated corridor/stairwell is one with controlled fixed heaters; heat from distribution pipes is disregarded.</p> <p>A flat in a block having only an unheated corridor adjacent to it is treated as detached (no party wall). See convention 2.03.</p>	<p>April 2015 amended 31 Dec 2017 amended May 2019</p>
2.25	Private access stairwell to a single dwelling (e.g. access to upper flats in four in a block dwelling)	<p>If access stairwell separated from the dwelling by an external quality door, - treat stairwell as a corridor. If there is no external quality door between the dwelling and access stairwell – treat access stairwell as part of the dwelling.</p> <p>Treat upper flat with an access stairwell as a single storey with the floor area which extends to the perimeter of the access stairwell (at the floor level of the dwelling); record height as the rest of the property.</p> <p>For the ground floor flat adjacent to stairwell, treat the wall as a party wall and calculate accordingly.</p>	<p>added 31 Dec 2017 amended Nov 2019</p>
2.26	Heated stairwell/corridor	Heated stairwell/corridor is one with fixed heater.	May 2019
3. Construction and insulation			
3.01	Cavity wall type	Where a cavity wall has been identified, enter as such, irrespective of the width of the cavity. Record insulation level, presence of dry-lining and wall thickness.	March 2010

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3.02	System build type	<p>If there is a system built wall that has evidence of retro cavity fill, record as system build with internal insulation, thickness unknown, and include Addendum 1.</p> <p>See also convention 3.14 relating to high-rise system built dwellings.</p> <p>Timber frame should be recorded as such and not as system build irrespective of the external cladding.</p>	<p>March 2010 amended Jan 2012 amended Aug 2014 amended April 2015 amended 31 Dec 2017</p>
3.02a	Timber framed wall with external insulation	Timber framed wall with external insulation should be treated “as built” and tick Adenda item “1”	Nov 2018
3.03a	“As built” insulation category (walls, floors, roofs)	<p>Assume “as-built” if there is no evidence of retro-fitted insulation including:</p> <ol style="list-style-type: none"> 1. a pitched roof with sloping ceiling or a flat roof where there is no documentary evidence. 2. a roof space with rafter insulation if no evidence of retro-fitted insulation 3. roof rooms where there is no access and no documentary evidence. 	<p>April 2015 amended 31 Dec 2017</p>
3.03b	“Unknown” insulation type (walls, floors, roofs)	<p>Do not use the “unknown” insulation type option for insulation inappropriately as this automatically suppresses any insulation recommendation.</p> <p>“Unknown” should be used only in exceptional circumstances, such as:</p> <ul style="list-style-type: none"> • when there is conflicting evidence (inspection and/or documentary) of added insulation whose presence cannot be ascertained conclusively • for a fully boarded or obstructed loft unless householder has documentary evidence (maximum thickness is depth of joists) or is prepared to lift the boards. • where there is a pitched roof and no access to the loft space or access prevented (see 3.04) and no documentary evidence <p>In these cases clarification must be provided in site notes.</p> <p>Note: if the floor construction cannot be determined, “unknown” construction is appropriate.</p>	<p>March 2010 amended April 2015 amended Aug 2016 amended 31 Dec 2017 amended Sept 2018</p>
3.03c	“Unknown” insulation thickness	<p>“Unknown insulation thickness” should be used only in exceptional circumstances, such as:</p> <ul style="list-style-type: none"> - conflicting evidence of insulation thickness (visual and/or documentary) - when you can see insulation present but cannot measure its thickness. 	<p>June 2016 amended 31 Dec 2017 amended Sept 2018 amended May 2019*</p>

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3.04	Access to loft insulation and rafter insulation	<p>Where safe and practicable access to the loft is possible, loft insulation should be measured and photographic evidence provided of its measured thickness.</p> <p>“No access” means there is no loft hatch or other means of gaining access to the loft space.</p> <p>If there is a loft hatch or other means of gaining access but it could not be used on the date of the site visit (e.g. painted over, obstruction preventing access for health and safety reasons) record as “access, loft insulation unknown”.</p> <p>If loft insulation is fully obstructed (e.g. boarded or obscured by items stored) enter “pitched, access, loft insulation unknown” unless householder has documentary evidence (maximum thickness is depth of joists) or lifts the boards or removes the obstructions.</p> <p>If the loft, or part of the loft, is boarded and the assessor can establish and evidence the insulation present under the boards at multiple locations below the boarded area (visible through gaps or extending in from the edges) the boarded area is treated as insulated to the thickness that can be proved by the evidence.</p> <p>If the property has multi-foil or foam insulation at joists or rafters, see convention 3.07.</p> <p>If joist and rafter insulation are both present base the assessment on the joist insulation only.</p> <p>If varying levels of insulation, use an area-weighted average thickness. However, if there is an area with no insulation the dwelling should be split into building parts to allow different roof insulation scenarios.</p> <p>In the case of a thatched roof for age band J onwards use ‘as built’ rather than rafter insulation if there is rafter insulation in addition to the thatch.</p>	<p>March 2010</p> <p>amended Mar 2011</p> <p>amended Jan 2012</p> <p>amended Aug 2014</p> <p>amended April 2015</p> <p>amended Aug 2016</p> <p>amended 31 Dec 2017*</p> <p>amended Sep 2018</p>
3.05	Age band for conversions	<p>After applying convention 1.01, for a conversion which was a change of use (e.g. barn converted to a dwelling) or where a dwelling has been sub-divided (e.g. house to flats) always use the original construction date, and specify upgraded elements only where documentary or visual evidence is available.</p>	<p>March 2010</p> <p>amended Dec 2012</p> <p>amended Aug 2014</p> <p>amended 31 Dec 2017*</p> <p>amended Nov 2018</p>

#	Topic	Conventions	Issue date
3.06	Identifying internal wall lining (with an airspace behind)	<p>This includes any type of internal lining that creates an airspace behind it, e.g. plasterboard on dabs, lath and plaster. Use tap test for plasterboard on dabs or on battens.</p> <p>If tap test is inconclusive regard as not dry-lined.</p> <p>Dry lining alone does not confirm the presence of insulation.</p> <p>Note. Applies only to stone, solid brick and cavity walls in age bands A to E.</p>	<p>January 2012 amended April 2015 amended Aug 2016 amended 31 Dec 2017 amended Sept 2018</p>
3.07	Insulation thickness	<p>If insulation is multi-foil (multi-layered blanket-type insulation which contains at least three layers of foil-type material), the thickness is entered as twice its actual thickness.</p> <p>Any insulation can be doubled in thickness if there is documentary evidence of the type of insulation and manufacturer's information that the λ-value (thermal conductivity) is equal or less than 0.025 W/m·K. If thermal conductivity more than 0.08 then divide thickness of insulation by two (e.g. vermiculite). If there is both internal and external wall insulation add the insulation thicknesses together and enter as external.</p> <p>This convention applies only in cases where the assessor specifies the thickness of insulation within the RdSAP software, but not if the U-value is calculated.</p>	<p>January 2012 amended Aug 2016 amended 31 Dec 2017 amended Nov 2018</p>
3.08	U-value entry (walls, roofs, floors)	<p>The U-values of existing elements (walls/roofs/floors, etc.) must be the RdSAP default values (e.g. entered "as built") and must not be overwritten unless specific documentary evidence of the thermal conductivity of individual materials of the building element of the property being assessed is provided and was undertaken in accordance with BR 443 "Conventions for U-value calculations" (BRE, 2006).</p> <p>The U-value is that of the whole element, including any added insulation.</p> <p>Documentary evidence applicable to the property being assessed (see convention 9.02) must be provided and recorded if overwriting any default U-value. This evidence shall be either:</p> <ul style="list-style-type: none"> - relevant building control approval, which both correctly defines the construction in question and states the calculated U-value; or - a U-value calculation produced or verified by a person with suitable expertise and experience. <p>Evidence of suitable expertise and experience can be demonstrated by, but is not limited to, membership of a recognised U-value calculation competency scheme or OCDEA¹ or Level 4 non-domestic energy assessor membership, or any other process recognised by Accreditation Schemes/Approved Organisations and Government.</p> <p>Where it is known that only part of an element has been insulated use the alternative wall if possible for the insulated part, or use extensions.</p>	<p>January 2012 amended Aug 2014 amended April 2015 amended Aug 2016 amended 31 Dec 2017*</p>

¹ In Scotland, membership of an Approved Organisation scheme for EPCs for new domestic buildings

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3.09	External doors	<p>An external door is a door that forms part of the heat loss perimeter of the dwelling. See 2.14 for treatment of highly glazed doors.</p> <p>A multiple door should be recorded as such, e.g. a double door should be counted as 2 doors.</p> <p>A door to a <u>heated</u> access corridor is not included in the door count.</p> <p>A door to an <u>unheated</u> access corridor is part of the sheltered wall. If there is a second external door in the property it is directly to the outside.</p> <p>It is possible for a property to have no external door in the RdSAP data set (when any entrance to the property is <u>via highly glazed doors</u> which are counted as windows in SAP, or via a heated corridor).</p> <p>A door is counted as insulated only if documentary evidence is provided, which must include a U-value or manufacturer reference enabling the assessor to ascertain the U-value from the manufacturer. If there is more than one insulated door and they have different U-values, enter the average U-value.</p> <p>See also 2.25.</p>	<p>January 2012</p> <p>amended Dec 2012</p> <p>amended April 2015</p> <p>amended 31 Dec 2017</p> <p>amended July 2018</p>
3.10	Windows (U-values and g-values)	<p>Default U-values and g-values can be overwritten and known data specified only if documentary evidence is provided, which can be either a Window Energy Rating certificate (as defined by BFRC) or manufacturer's data.</p> <p>The U-value is for whole window, not centre pane.</p>	<p>January 2012</p> <p>amended 31 Dec 2017</p>
3.11	Draught proofing (of external windows and doors)	<p>If the state of the draught proofing cannot be determined then take triple, double or secondary glazed as being draught proofed, and single glazed windows and doors as not draught proofed unless there is a contrary evidence of draught-proofing.</p> <p>Include glazing in a non-separated conservatory.</p>	<p>January 2012</p> <p>amended Dec 2012</p> <p>amended 31 Dec 2017*</p>
3.12a	Glazing age	<p>Choose unknown date if there is no evidence of the date.</p> <p>See also 3.12b.</p> <p>Multiple glazed units can be dated via the following methods:</p> <ol style="list-style-type: none"> The manufacturing date on the spacer bar, or possibly on the frame; <u>Presence of thermal spacer bar indicates post-2002 glazing age, 2003(Scotland) or 2006(NI);</u> There is documentary evidence confirming the date of installation of the window e.g. FENSA / CERTASS / Building Control certificate or manufacturers guarantee. Property build date if after the following trigger dates: Post 2002(E&W), 2003(Scotland) or 2006(NI) where applicable. <p>If none of the above applies choose 'unknown'.</p>	<p>August 2014</p> <p>amended April 2015</p> <p>amended Aug 2016</p> <p>amended 31 Dec 2017</p> <p>amended July 2018</p>

#	Topic	Conventions	Issue date
3.12b (was 3.15)	Glazing gap	<p>Glazing gap is the width of the spacer bar between the two panes of glass.</p> <p>If the prevalent type of windows with PVC frames installed are pre-2002 (pre-2003 in Scotland; or pre-2006 in NI) or unknown period, identify glazing gap depth to the nearest value to 6, 12 or 16 mm.</p> <p>If the gap cannot easily be identified, select either 6 (if narrow gap) or 16 (if wide gap).</p> <p>Where a mixture of glazing gaps are present, all window areas should be measured.</p> <p>If there is a mixture of PVC and non-PVC frames record the frame type according to which is most prevalent.</p>	<p>April 2015</p> <p>amended Aug 2016</p> <p>amended 31 Dec 2017</p>
3.13	Age band for roof room	<p>Same as the building part unless evidence proves otherwise. Evidence includes documentary evidence (e.g. planning applications), dated photographs of the property concerned validating date of construction (the evidence might establish the earliest possible date of construction if roof room is absent in the photograph).</p>	<p>August 2014</p> <p>amended Aug 2016</p>
3.14	Properties greater than four storeys	<p>For the purpose of RdSAP record the construction of the heat loss walls (e.g. cavity, solid brick, stone, timber framed, system build) of the dwelling being assessed and not the construction of the overall superstructure. Ensure that addendum 1 is selected.</p> <p>If there are multiple wall construction types within the HLP of the dwelling being assessed follow convention 2.13 for alternative walls.</p> <p>If cavity construction is identified (and retro-fit cavity insulation is therefore recommended) where the dwelling is on the third storey or above select 'Access issues' from 'Hard to treat cavity wall' addenda.</p>	<p>August 2014</p> <p>amended April 2015</p> <p>amended 31 Dec 2017</p> <p>amended May 2019</p>
3.15	Moved to 3.12b		amended 31 Dec 2017*
3.16	Deleted, but see 2.24.		amended 31 Dec 2017*
4. Main heating			
4.01a	Heat emitters	<p>If one heating system feeds both underfloor and radiators, enter radiators. This is because for radiators a higher flow temperature is assumed (unless flow temperature is known).</p>	<p>Sept 2009</p> <p>amended Jan 2012</p> <p>amended April 2015</p> <p>amended 31 Dec 2017</p>

#	Topic	Conventions	Issue date
4.01b	Design flow temperature for condensing boilers and heat-pumps	The design flow temperature for condensing boilers and heatpumps should be recorded as unknown unless there is a documentary evidence that the system has been designed and commissioned as a low temperature one	Added Dec 2017 amended July 2018*
4.02	Storage heaters on single tariff electricity.	If storage heaters are present as main heating but there is only a single rate meter – enter as panel heaters and include Addendum 6.	Sept 2009 amended Mar 2010 amended April 2015 amended 31 Dec 2017*
4.03	Boiler/heating system missing or not working	If boiler/heating system is fitted/installed but not working (or condemned) it should still be entered as the main heating system. If boiler/heating system not fitted/installed, enter no heating system or do another survey when the heating system is installed. If boiler/heating system is present but not accessible and no documentary evidence is made available, the assessment cannot be completed until access has been provided.	Sept 2009 amended Aug 2016 amended 31 Dec 2017 amended Mar 2019
4.04	Micro-CHP not listed in PCDB	If micro-CHP cannot be found in the database enter as a default condensing boiler and include Addendum 5.	Sept 2009 amended Mar 2011 amended 31 Dec 2017
4.05	Definition of community heating	A system in which a heat generator provides heat and/or hot water to more than one premises. Each dwelling to be assessed individually. If the heat generator is in the dwelling, it is the heating system for that dwelling. If the heat generator is not in the dwelling treat as community heating	Sept 2009 amended April 2015
4.06	Heat sources and fuel used by community heating	Where the community scheme can be identified in the community network database, it is to be selected. If there is more than one data record, only the current record can be used. Otherwise try to find out what the fuel is. If it cannot be ascertained select mains gas.	Sept 2009 amended April 2015
	Go to 4.09		

#	Topic	Conventions	Issue date
4.09	Two main systems	<p>RdSAP allows for two main heating systems.</p> <p>If second main heating system is used only for domestic hot water see 6.04.</p> <p>Main systems 1 and 2 cannot be room heaters except in the case of the dwelling's heating consisting solely of room heaters.</p> <p>When there are two main systems:</p> <ul style="list-style-type: none"> a) system 1 always heats the living area; b) when both systems heat the living area, main system 1 is the one that heats the most habitable rooms; c) when both systems heat the same number of habitable rooms; main system 1 is the system that provides water heating; d) when neither or both main heating systems heat water, main system 1 is the system which is cheapest to run (fuel cost from SAP Table 12 divided by the efficiency of heating system). <p>Where two main systems serve different spaces, record the heating proportion based on floor area served by each system.</p> <p>Where two systems serve the same heating circuit the default assumption should be a 50/50 split. A different ratio can only be used if there is clear documentary evidence to back this up.</p> <p>When there are two main systems and a recommendation is made for heating system upgrade, include addendum 9.</p> <p>A second main system is not to be confused with a secondary heater. See section 5.01 to 5.03 for rules on secondary heaters.</p> <p>If there is more than one type of storage heater (old large-volume, fan-assisted, integrated storage/direct acting, high heat retention): treat as two main systems. Then if either main system 1 or main system 2 has more than one type, choose the most prevalent. A storage heater can be classified as high heat retention only if the brand name and model is located in the database.</p> <p>If there are more than two main heating systems, use the rules above for determining main systems 1 and 2 and disregard the third.</p> <p>If there are only room heaters in the dwelling and there is more than one type of room heater (e.g. gas fire and an electric fire) and they both heat habitable rooms, then see rules above for two main systems.</p> <p>If one of them heats a habitable room, and the other one in non-habitable room, treat as main and secondary heating respectively.</p>	<p>March 2011</p> <p>amended Jan 2012</p> <p>amended April 2015</p> <p>amended Aug 2016</p> <p>amended 31 Dec 2017</p> <p>Amended May 2019*</p>

#	Topic	Conventions	Issue date
4.10	Liquid biofuels	Deleted.	March 2011 amended 31 Dec 2017*
4.11	LPG at mains gas prices (e.g. special condition 18)	If documentary evidence (e.g. billing information) confirms that the property receives LPG at mains gas prices, enter fuel type “LPG subject to special condition 18”. Treat Liquefied Natural Gas (LNG) networks as mains gas.	March 2011 Amended May 2019
4.12	Straw bales and other biomass	For straw bales and other types of biomass fuel that are not available in RdSAP, select wood logs and include addendum 12.	December 2012
4.13	TRVs	Include when TRVs present on 50% or more of the radiators. For this purpose include all radiators including those not in a habitable room (e.g. in a hallway).	August 2014 amended April 2015 amended Aug 2016 amended 31 Dec 2017
4.14	Electric heating appliances	Treat electric underfloor heating mats and infra-red heaters as electric panel heaters	April 2015 amended Aug 2016
4.15	Electric CPSU	An electric CPSU uses 10-hour or 18-hour tariff. If on 7-hour tariff treat as water storage boiler. If on single tariff record as direct-acting electric boiler.	April 2015
4.16	Weather compensators	Deleted.	April 2015 amended 31 Dec 2017*
4.17	Time and Temperature Zone Control (TTZC)	A system of controls that allows heating times of at least two zones to be programmed independently, as well as having independent temperature control.	April 2015 amended 31 Dec 2017*
4.18	Central heating pump age	Separate pump only, not within boiler. Record age as unknown if cannot be seen. Age is 2013 or later if it has a label stating the EEI (energy efficiency index) or as indicated by date of manufacture from the ID plate; otherwise it is 2012 or earlier.	April 2015 amended 31 Dec 2017
4.19	Heating programmed by mobile app only	Heating system controls programmed via a mobile app only, where there are no visible controls in the dwelling, are not included in the assessment, i.e. recorded as “no time or thermostatic control”.	June 2016 amended 31 Dec 2017

#	Topic	Conventions	Issue date
4.20	Storage heater in a non-habitable room (no other heating present in a dwelling)	Where the only source of heat is a storage heater in a non-habitable room, include it as main heating, and specify one heated habitable room.	May 2019
5. Secondary heating			
5.01	Secondary heating	<p>Include if fixed emitter present regardless of whether main system(s) heat all rooms. If more than one secondary: select the device that heats greatest number of habitable rooms. If the same choose cheapest fuel – if same fuel select the device with the lowest efficiency.</p> <p>Electric focal point fires are included even if not wired by fixed spur. A fixed heater in non-habitable rooms are still counted as a secondary heater.</p>	Sept 2009 amended Mar 2011 amended 31 Dec 2017 amended Dec 2018
5.02	Open fire as a heating source	<p>An open fire is to be considered in the heating assessment if a fire-place is capable of supporting an open fire (that includes having a grate suitable for holding fuel), even if no fuel is present. The number of open fire-places is specified and used in the calculations as the number of open chimneys (for ventilation).</p>	March 2010 amended Oct 2010 amended April 2015 amended 31 Dec 2017
5.03	Fuels for solid fuel fires and room heaters	<p>If it can burn only one fuel, specify that fuel (includes exempted appliances burning wood in Smoke Control Areas). Otherwise: Smoke control area: Open fire – smokeless fuel; closed heater – anthracite Not smoke control area: Open fire – dual fuel; closed heater – wood logs if capable otherwise anthracite.</p>	Oct 2010
6. Water heating			
6.03	Dual immersion hot water cylinder with single electricity tariff	Enter as a single immersion and include Addendum 6.	Oct 2010 amended Mar 2011 amended 31 Dec 2017

#	Topic	Conventions	Issue date
6.04	Separate boiler or heat pump for DHW	<p>Sometimes there is a separate boiler or heat pump providing DHW only.</p> <p>Specify the two main heating systems as follows:</p> <ul style="list-style-type: none"> - main system 1 is the one providing space heating (100% of heat is from main system 1); - main system 2 is the one providing DHW (0% of heat from main system 2); <p>If both main heating systems supply space heating only, a generic DHW-only boiler can be selected from the water heating options.</p>	<p>March 2011</p> <p>amended April 2015</p> <p>amended 31 Dec 2017*</p>
6.05	Enclosed hot water cylinders and insulation of hot water cylinders	<p>For an unvented pressurised steel or plastic encased hot-water cylinder (e.g. Megaflo), treat insulation value as 50 mm factory-applied foam and assume "cylinderstat is present". For Elson (wooden box) type record the actual thickness as factory applied insulation and check for the presence of a cylinderstat (otherwise record as "no access").</p> <p>If factory insulated plus a jacket, enter the thickness of foam insulation plus 1/3 the thickness of the jacket.</p>	<p>August 2014</p> <p>amended April 2015</p> <p>amended 31 Dec 2017</p> <p>amended Dec 2018</p>
6.06	Hot water thermal store	If physically separate, treat as a cylinder.	<p>August 2014</p> <p>amended 31 Dec 2017</p>
6.07	Hot water cylinderstat	Include only when mounted on the side of the cylinder and has an electric connection.	April 2015
6.08	Instantaneous water heater	<p>Disregard a small water storage volume.</p> <p>A "small" volume means less than or equal to 55 litres;</p> <p>If the storage volume exceeds 55 litres, it is specified as an electric immersion or gas boiler for water heating only.</p>	June 2016
6.09	Electric shower	If the only water heater is an electric shower, specify as "electric instant water heating"	June 2016
6.10	Water heated by PV	In some dwellings water may be heated by PV systems which use an additional device that focuses the electricity generated to heating the hot water via the immersion. The device is essentially an automatic power controller that diverts surplus power to a designated load, normally a hot water heater. Where the presence of such device can be evidenced, the assessor can suppress the recommendation for Solar (thermal) Hot water heating. See also convention 8.01.	May 2019

#	Topic	Conventions	Issue date
7. Lights			
7.01	Lights	<p>Consider all fixed fittings within the dwelling. Include fixed under-cupboard kitchen lights.</p> <p>The number of light fittings is counted (not the number of bulbs, e.g. a chandelier is one fitting). LEDs are considered as low energy lights.</p> <p>Where there are 4 or more recessed downlighters / ceiling lights divide the light fitting count by 2.</p> <p>If no lamp is present: do not treat as a low energy outlet unless it can be fitted only with a low energy lamp.</p>	<p>Sept 2009</p> <p>amended Aug 2014</p> <p>amended Aug 2016</p> <p>amended 31 Dec 2017</p>
8. Recommendations			
8.01	Suppression of recommendations	<p>Recommendations should be removed only if there is documentary evidence showing that a specific recommendation is not appropriate. A listed building or a property in a conservation area is not sufficient grounds in its own right to suppress a recommendation.</p> <p>For a solar water recommendation, see convention 6.10.</p> <p>If a recommendation is removed this must be recorded in site notes.</p> <p>Further guidance on specific recommendations can be sought from an appropriate professional organisation, for example heating engineers, building control officers, product manufacturers, trade associations, etc.</p>	<p>Sept 2009</p> <p>amended Dec 2012</p> <p>amended May 2019</p>
8.02	Mains gas available	<p>Only if a gas meter or a gas burning appliance (e.g. gas cooker) is within the property. A closed-off gas pipe does not count.</p> <p>Where a boiler is present attached to a heating system (not in a box), and the mains gas meter has been removed for security reasons, enter a gas boiler as the main form of heating and indicate that mains gas is present.</p>	<p>Sept 2009</p> <p>amended Mar 2010</p>

#	Topic	Conventions	Issue date
9. Miscellaneous			
9.01	Open chimney/fireplace count (for ventilation)	<p>Include all open chimneys/fireplaces in the fireplace count (both downstairs and upstairs) only when they are unrestricted and suitable for use.</p> <p>The definition is a vertical duct with a flue diameter of at least 200 mm or its equivalent area.</p> <p>The following are <u>not</u> counted as open fireplaces:</p> <ul style="list-style-type: none"> • Any open flue that is less than 200 mm diameter • A permanently blocked up fireplace, even if fitted with an airbrick • Any heating appliance with controlled flow of air supply i.e. appliance has closing doors • A flexible gas flue liner sealed into the chimney (because the diameter is less than 200 mm) • A chimney fitted with a damper enabling the flue to be mechanically closed when not in use <p>Temporary means of blocking a flue, e.g. cardboard, newspaper bungs, chimney balloons and similar, are not a permanent means of controlling ventilation and therefore the chimney is counted as an open fireplace.</p> <p>Note that this relates only to the number of open fireplaces (it affects the ventilation rate assumed for the calculation). Other rules apply when considering the choice of main or secondary heating system. See also 5.02. (for heating)</p>	<p>March 2010 amended 31 Dec 2017 Amended Nov 2018*</p>
9.02	Documentary evidence	<p>Acceptable documentary evidence includes, but is not limited to, official letters from the applicable Registered Social Landlord (RSL) or certificates, warranties, guarantees. The assessor must be confident, and able to demonstrate, that any documentation relates to the actual property being assessed and that there is no physical evidence to the contrary.</p> <p>Evidence of intent to install does not qualify as acceptable documentary evidence.</p>	<p>March 2010 amended Aug 2014 amended Aug 2016</p>
9.03	Lodgement of incorrect EPC	<p>If you lodge an EPC in error and lodge a corrected EPC, inform your accreditation scheme so that the erroneous one can be marked "not for issue".</p>	<p>March 2010</p>
9.04	Cooling system present	<p>Include fixed systems only. Do not include reversible heat pumps.</p>	<p>March 2011</p>

#	Topic	Conventions	Issue date
9.05	Photovoltaics	<p>If photovoltaics are present, look for a schematic wiring diagram, which may be adjacent to the electricity meter or the consumer unit, or an MCS installation certificate, either of which should state the peak power (kWp) of the PV array.</p> <p>If the kWp cannot be ascertained, do not allocate the PV, except where it is connected to a meter serving a single dwelling. Where the meter is serving a single dwelling, record the percentage of the total roof area occupied by PVs. The total roof area includes main dwelling and all extensions where present.</p> <p>If there are PV panels on different planes of the roof, enter as separate systems. If a single kWp figure is provided, in this case estimate the relative area of each and apportion the kWp accordingly.</p> <p>PV connection to the dwelling's meter must be verified by the presence of a PV generation meter or documentary evidence. In all cases, the PV-generated electricity is included in the assessment of a dwelling only if the dwelling has a PV generation meter serving it.</p> <p>Where it cannot be determined that the PV supply is feeding into a meter serving the dwelling being assessed, the PV panels are still allocated to the dwelling but should not be specified as being connected.</p> <p>Where the PV supply is serving more than one building, or multiple dwellings within the building, the total capacity of the PV is allocated between the buildings on an area weighted basis based on an estimate of the total floor area of all of the buildings or dwellings served by the PV. This applies in all scenarios where the PV supplies more than one building, or multiple dwellings within the building, including where the other buildings are either all dwellings, a mix of dwellings and non-domestic buildings or all non-domestic buildings.</p>	<p>March 2011 amended Jan 2012 amended April 2015 amended Aug 2016 amended 31 Dec 2017* amended Jan 2019</p>
9.06	Flue gas heat recovery	<p>Include only if found in PCDB, identified in same way as for heating systems. When the model cannot be found in the PCDB, there is no default option available and the device is not included in the assessment, but its presence should be recorded in site notes.</p>	<p>January 2012 amended 31 Dec 2017</p>
9.07	Wind turbine	<p>Documentary evidence is required to overwrite default values.</p>	<p>January 2012</p>

#	Topic	Conventions	Issue date
9.08	Waste water heat recovery	<p>Include only if brand name and model found in the PCDB.</p> <p>When the model cannot be found there is no default option available and the device is not included in the assessment, but its presence should be recorded in site notes.</p> <p>For instantaneous types:</p> <ul style="list-style-type: none"> - The number of rooms with bath and/or shower includes rooms with only an electric shower. If two showers are found in a single room, count as one. - Only mixer showers count for instantaneous waste water heat recovery. Mixer shower means a shower where the hot water is provided by a boiler (combi or regular), heat pump or immersion heater. - The shower must be permanent i.e. not temporarily attached to bath taps when in use. - In the case of a shower that is integral with bath taps, i.e. designed as part of a unit switchable between shower and taps, it is counted as a mixer shower only if there is a shower bracket at least 1.5 m above the plughole and there is a shower curtain or screen present. <p>For storage types:</p> <ul style="list-style-type: none"> - Record the total number of baths and showers of any type. - Record the total number of baths and showers connected to the waste water heat recovery system. 	<p>January 2012 amended Dec 2012 amended April 2015 amended Aug 2015 amended 31 Dec 2017</p>
9.09	Solar water heating	<p>Documentary evidence is required to overwrite collector or solar store values. Orientation, tilt and overshadowing can be overwritten.</p> <p>If the panel/collector details are available but the solar store information is not, the default values can be used for the solar store.</p> <p>If the solar store is combined and details are being recorded the volume of the combined cylinder must also be recorded.</p> <p>Shower type is required when solar water heating details are known. In this context "electric shower" means a shower where the water is heated by electricity as the shower runs. If the shower is supplied from a hot-water cylinder it is classified as non-electric.</p>	<p>January 2012 amended April 2015 amended 31 Dec 2017*</p>

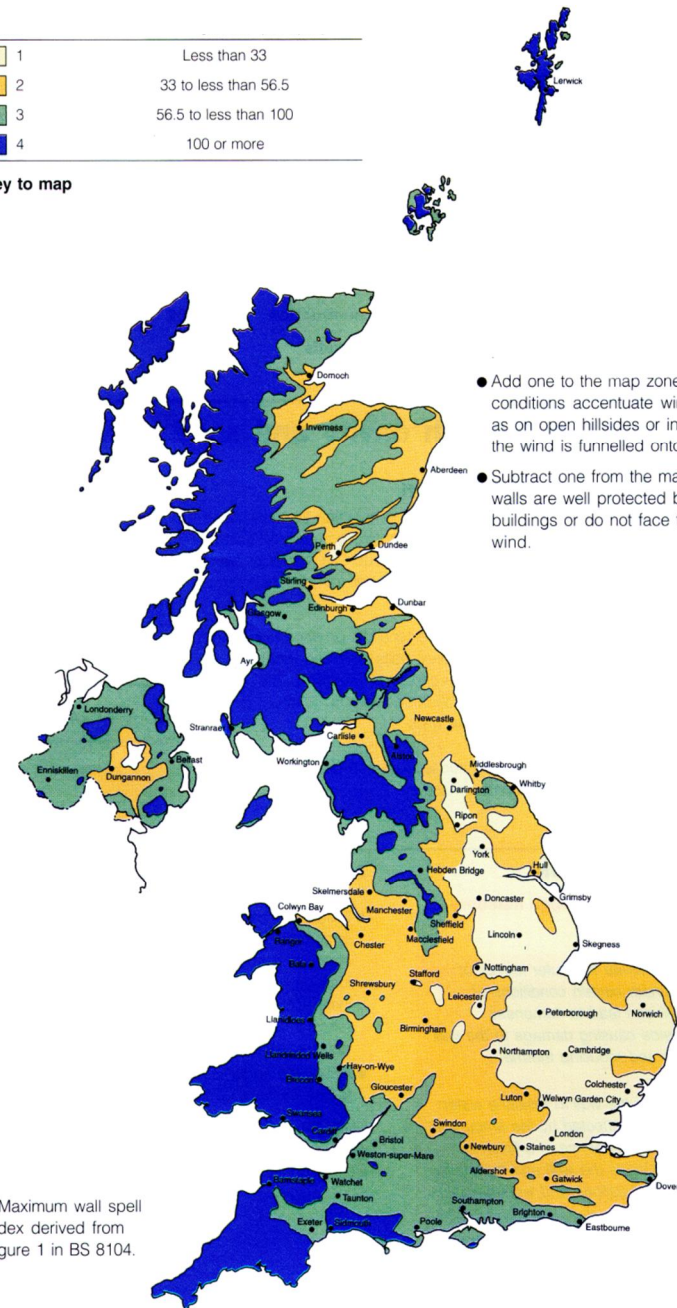
#	Topic	Conventions	Issue date
9.10	Hard to treat cavity walls	An <u>access</u> issue is recorded if there is any façade where it is not possible to pitch a 5 metre ladder considering health and safety requirements. This includes e.g. a narrow passageway, a busy thoroughfare next to a building of more than 2 storeys, a conservatory or large outhouse attached to the property, etc. A <u>narrow cavity</u> is indicated by a stretcher bond brick pattern with wall thickness 220 to 250 mm. <u>Possible high exposure</u> should be recorded for any dwelling in exposure zones 3 or 4 (see map at end of these conventions). If in doubt record as possible high exposure.	January 2012
9.11	Transaction type	If more than one transaction type is applicable, seek clarification from the client and in case of doubt select the one nearest the top of the list. “None of the above” should be avoided where possible; the case below should be treated as follows: “Right to Buy” transactions should be recorded as “Non-marketed sale”	December 2012 amended Aug 2016
9.12	Tenure	When transaction type is rental, tenure must be rented (social) or rented (private). When transaction type is marketed or non-marketed sale, the tenure will usually be owner-occupied (although there can be exceptions, such as the sale of a property with a sitting tenant). If the property is vacant on the inspection date, try to find out the last tenure and select this e.g. owner occupied, rented (social) or rented (private).	December 2012
9.13	Electricity meters	Usually the dwelling uses either single-reading meter or a multiple-reading meter arrangement. Older properties may have two single-reading meters to record on-peak and off-peak readings (record as dual meter). If tele-switch or time-switch is present – treat as dual. If choosing a particular tariff, additional information should be gathered such as recent electricity bill.	December 2012 amended 31 Dec 2017*
9.14	Park homes	For the purposes of RdSAP a park home is a pre-fabricated dwelling of modular lightweight construction without its own foundations (although it may sit upon a concrete base) and which is capable of being moved from one place to another. Convention 3.08 applies to U-values. For U-values of existing park homes, documentation obtained from the manufacturer can be used. Park homes have their own set of age bands in SAP Appendix S.	August 2014 amended April 2015 amended 31 Dec 2017
9.15	New technologies	Refer to Appendix 5	Added March 2019

#	Topic	Conventions	Issue date
9.16	BRE Technical Notes	<p>Technical Notes are produced by BRE to enable the recognition of certain technologies in SAP and/or RdSAP assessments. These are normally required due to complexities related to the technology's assessment that cannot easily be handled by SAP/RdSAP specifications. By their nature, Technical Notes are normally temporary (on the basis that future versions of SAP can incorporate recognition) and may therefore incorporate validity terms. Each Technical Note incorporates a technical justification section, followed by instructions for SAP/RdSAP assessors.</p> <p>The list of Technical Notes indicates whether a particular Technical Note is applicable to SAP or RdSAP. If a technology, which might be a subject to a Technical Note is found in a dwelling, assessors must check the list of Technical Notes from the link given below to determine whether the technology is included and whether it is applicable to the type of assessment.</p> <p>If applicable, they must download a copy of the appropriate Technical Note from the link given in the list for each technical note and follow the instructions contained within it. The list of Technical Notes applicable to SAP and RdSAP, and the documents themselves, are published at the following BRE Website: https://www.bregroup.com/sap/bre-technical-notes/</p>	May 2019

Appendix 1. Exposure zones (see convention 9.10)

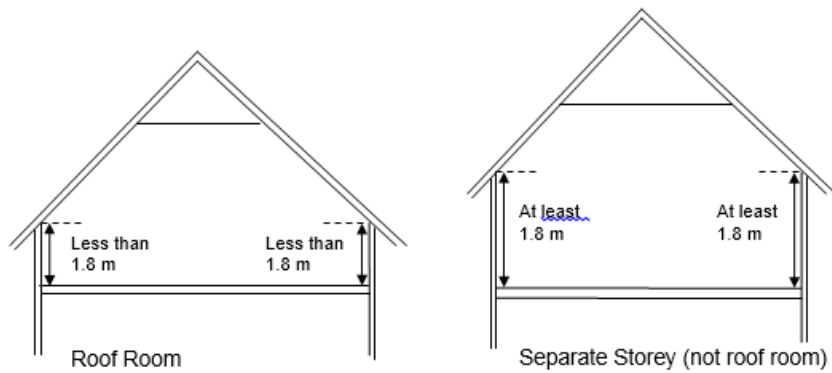
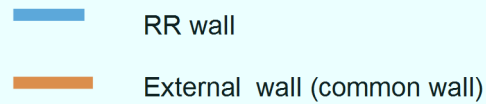
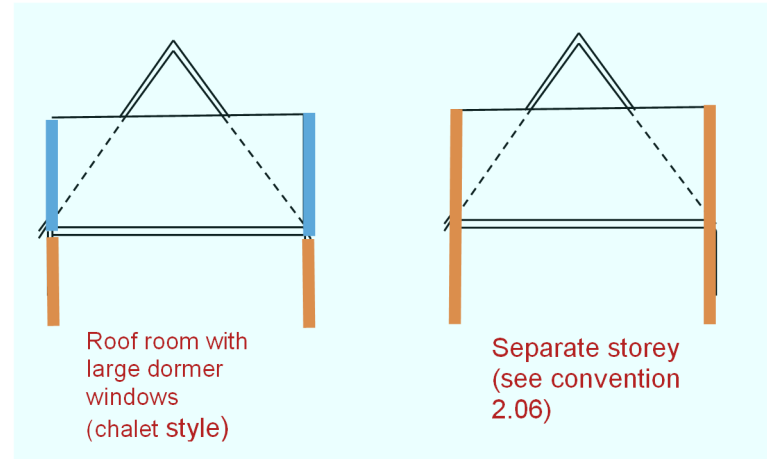
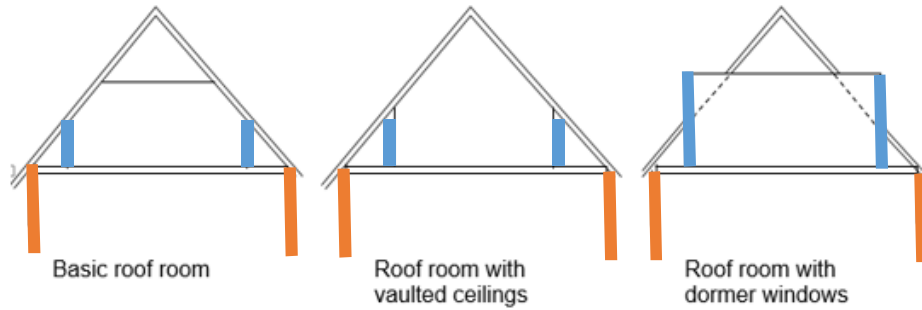
1	Less than 33
2	33 to less than 56.5
3	56.5 to less than 100
4	100 or more

Key to map



Appendix 2. Illustrations of roof rooms (see convention 2.06)

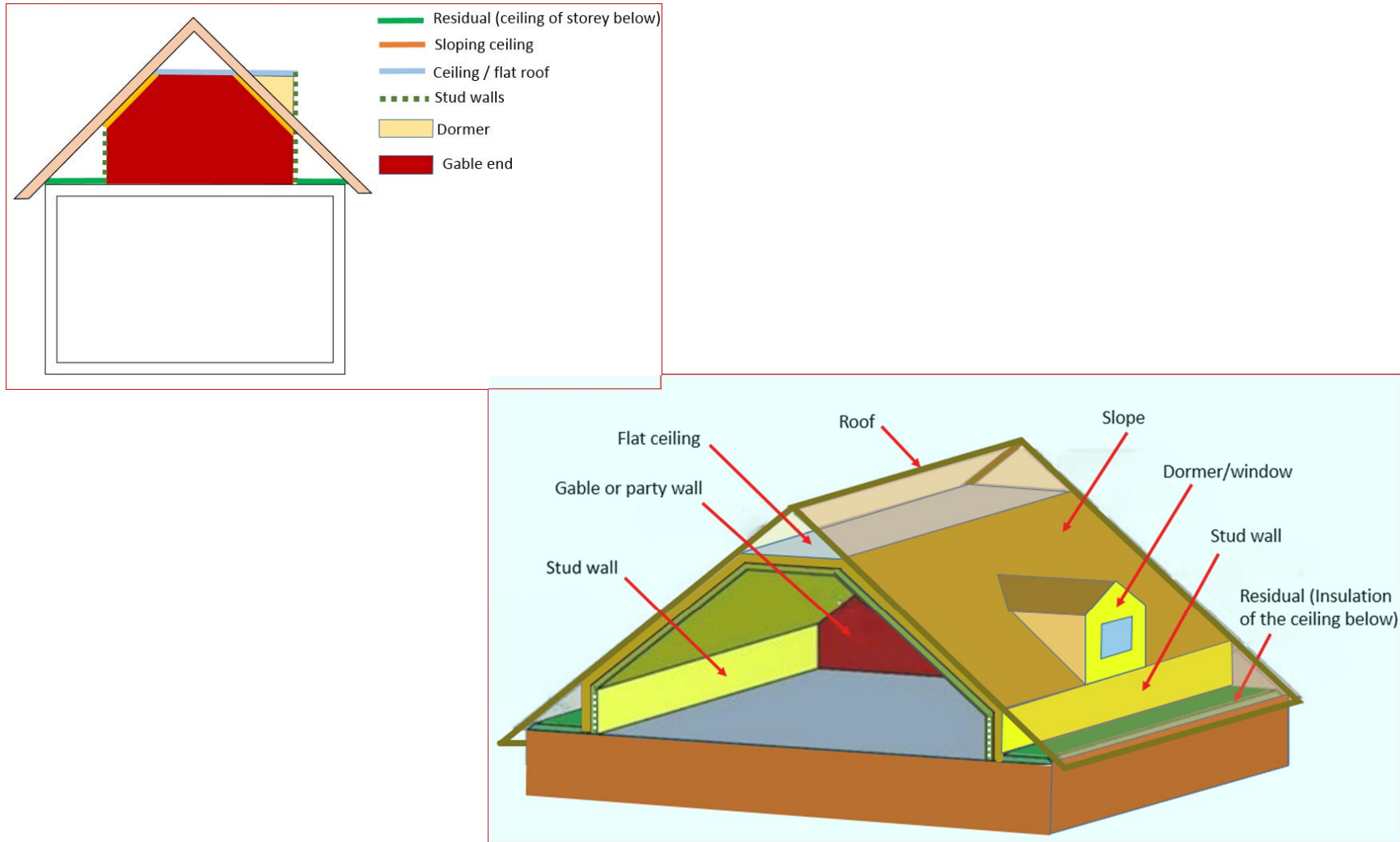
The following are all classified as roof rooms:



Where there is a common wall it is:

- a roof room if the common wall is less than 1.8 m;
- a separate storey if greater or equal to 1.8 m:

Appendix 3. Illustration of the different parts of roof rooms when detailed measurements are made (convention 2.06)



Appendix 4. Rooms in Roof - U-values applicable to room in roof insulation

Insulation thickness at joists (mm)	Slope u-value		Flat ceiling u-value		Stud wall u-value	
	Mineral wool or EPS slab	PUR or PIR	Mineral wool or EPS slab	PUR or PIR	Mineral wool or EPS slab	PUR or PIR
None	3.85	2.43	1.68	1.68	3.13	3.13
12	1.91	1.23	1.18	1.04	1.79	0.71
25	1.24	0.82	0.9	0.75	1.23	0.56
50	0.77	0.52	0.62	0.51	0.78	0.41
75	0.56	0.39	0.5	0.39	0.59	0.34
100	0.45	0.31	0.41	0.32	0.48	0.29
150	0.33	0.24	0.33	0.26	0.29	0.24
200	0.23	0.16	0.23	0.16	0.21	0.16
250	0.18	0.12	0.18	0.12	0.17	0.12
270	0.16	0.11	0.17	0.11	0.16	0.11
300	0.15	0.1	0.15	0.1	0.14	0.1
350	0.13	0.08	0.13	0.09	0.12	0.08
>400	0.11	0.07	0.11	0.07	0.11	0.07

Key:

EPS - expanded polystyrene slab
 PUR - polyurethane rigid insulation
 PIR - polyisocyanurate rigid foam

Assumptions used for calculating U-values:

Up to 150 mm, the insulation is between timber (rafters or studs)
 Timber fraction is 12%
 After 150mm, the next layer of insulation is continuous
 0.04 W/mK – thermal conductivity of mineral wool slab or EPS slab
 0.025 W/mK – thermal conductivity of PUR or PIR slab

Notes:

1. U-values from this table can be used for elements of rooms in roof only when the type of insulation and its thickness are known (evidence required)
2. Use the actual thickness of insulation (**do not** double insulation thickness if thermal conductivity is 0.025 W/mK)

Appendix 5. New technologies

A mechanism for recognising technologies not included in the published SAP and RdSAP methodology is provided in Appendix Q of the SAP specification document.

To include technologies that are recognised via the SAP Appendix Q mechanism within RdSAP assessments, the following instructions must be followed.

Technologies recognised by this mechanism are listed at the webpage: <http://www.ncm-pcdb.org.uk/sap/page.jsp?id=18> under the RdSAP2012 heading. The webpage contains Excel spreadsheets that enable the calculation of energy savings and consumption for recognised technologies when installed in existing dwellings.

Note: *this mechanism cannot be used for mechanical ventilation, heat networks or solar water heating. For these technologies, RdSAP uses default parameters.*

During the new technology recognition process, manufacturers must devise a process for enabling assessor identification by displaying an NCM (SAP) Identifier label.

During assessments of existing dwellings, where the assessor determines that a new technology recognised via SAP Appendix Q is present, they must follow these steps:

- Photograph the NCM (SAP) Identifier label for the installed technology (temporary note: this is currently being developed)
- If the label and, where applicable, a commissioning Certificate cannot be found, disregard the technology
- Download the Appendix Q calculation spreadsheet for the appropriate technology from: <http://www.ncm-pcdb.org.uk/sap/page.jsp?id=1>
- If Appendix Q RdSAP Spreadsheet for the technology is not available, disregard the technology
- Provisionally complete the RdSAP assessment as normal
- Follow the data entry instructions contained within Appendix Q calculation spreadsheet, proceed with the calculation by entering the
- NCM (SAP) Identifier and, if necessary, data from the RdSAP worksheet
- Enter calculated energy savings and energy consumption (if applicable), calculated by the Appendix Q calculation spreadsheet and
- enter into RdSAP software (temporary note: this is currently being developed by BRE)
- Within RdSAP software, suppress Energy Performance Certificate (EPC) recommendations when instructed to do so by the RdSAP
- Appendix Q calculation spreadsheet
- The Appendix Q calculation spreadsheet containing the calculation of savings must be saved and retained.

Revision history

September 2009	First issue Conventions: 1.01, 2.01, 2.02, 2.03, 2.04, 2.05, 2.09, 4.01, 4.02, 4.03, 4.04, 4.05, 4.06, 5.01, 6.01, 6.02, 7.01, 8.01, 8.02
March 2010	Second issue Amended: 4.02, 8.02 Added: 1.02, 2.06, 2.07, 2.08, 2.10, 2.11, 2.12, 2.13, 2.14, 2.15, 2.16, 3.01, 3.02, 3.03, 3.04, 3.05, 4.07, 5.02, 9.01, 9.02, 9.03
October 2010	Third issue Amended: 2.03, 2.10, 5.02 Added: 2.17, 2.18, 2.19, 2.20, 4.08, 5.03, 5.04, 5.05, 6.03
March 2011	Fourth issue Amended 1.02, 2.11, 2.12, 2.15, 2.16, 3.04, 4.04, 5.01, 5.04, 6.03, Deleted: 4.07, 4.08, 5.05, 6.01, 6.02 Added: 2.21, 4.09, 4.10, 4.11, 6.04, 9.04, 9.05
January 2012	Fifth issue Amended: 1.01, 2.06, 2.13, 3.02, 3.04, 4.01, 4.09, 9.05 Added: 2.22, 3.06, 3.07, 3.08, 3.09, 3.10, 3.11, 9.06, 9.07, 9.08, 9.09, 9.10 Deleted: 5.04
December 2012	Sixth issue: Amended 1.01, 2.08, 2.11, 2.13, 2.14, 2.17, 2.22, 3.05, 3.09, 3.11, 8.01, 9.08, Added: 4.12, 9.11, 9.12, 9.13
August 2014	Seventh issue: Amended 2.01, 2.06, 2.22, 3.02, 3.04, 3.05, 3.08, 7.01, 9.02 Added 2.23, 3.12, 3.13, 3.14, 6.05, 6.06, 9.14, Appendix 1
April 2015	Eighth issue: Amended 1.01, 2.03, 2.04, 2.05, 2.13, 2.14, 2.15, 2.21, 3.03a, 3.04, 3.06, 3.08, 3.09, 3.12, 3.14, 4.01, 4.02, 4.05, 4.06, 4.09, 4.13, 5.02, 6.04, 6.05, 9.02, 9.05, 9.08, 9.09, 9.14 Added 1.03, 1.04, 2.24, 3.02, 3.03b, 3.15, 3.16, 4.14, 4.15, 4.16, 4.17, 4.18, 6.07
August 2016	Ninth issue: Amended 1.04a, 2.03, 2.04a, 2.13, 3.03b, 3.04, 3.06, 3.07, 3.08, 3.12, 3.13, 3.15, 4.03, 4.09, 4.13, 4.14, 7.01, 9.02, 9.05, 9.11 Added 1.04b, 2.04b, 3.03c, 4.19, 6.08, 6.09
31 December 2017	Tenth issue: Amended 1.01; 1.04a; 2.01; 2.02; 2.03; 2.04a; 2.04b; 2.06; 2.13; 2.14; 2.15; 2.18; 2.22; 2.24; 2.25; 3.02; 3.03a; 3.03b; 3.03c; 3.04; 3.05; 3.06; 3.07; 3.08; 3.09; 3.10; 3.11; 3.12a; 3.12b; 3.14; 4.01a; 4.01b; 4.02; 4.03; 4.04; 4.09; 4.13; 4.17; 4.18; 4.19; 5.01; 5.02; 6.03; 6.04; 6.05; 6.06; 7.01; 9.01; 9.05; 9.06; 9.08; 9.09; 9.13; 9.14; Appendix 2; Appendix 3 Added: 2.25; 4.01b Moved: 3.15 moved to 3.12b. Deleted: 3.16; 4.10; 4.16

XX XXX 2019	Eleventh issue: Amended 1.01, 1.04a, 2.01, 2.04a, 2.06, 2.08, 2.12, 2.14, 2.15, 2.25, 2.26, 3.03b, 3.04, 3.05, 3.06, 3.07, 3.09, 3.12a, 3.14, 4.03, 4.11, 8.01, 9.05, Appendix 2, Appendix 3, Added: 1.02b, 3.02a, 4.20, 6.10, 9.15, 9.16, Appendix 4, Appendix 5. Deleted: 3.03c, 4.01b, 4.09, 9.01.
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