

BS 3632:2023



BSI Standards Publication

Residential park homes – Specification

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Published by BSI Standards Limited 2023

ISBN 978 0 539 16993 5

ICS 43.100

The following BSI references relate to the work on this document:

Committee reference B/511

Drafts for comment 21/30434144 DC; 23/30468442 DC

Amendments/corrigenda issued since publication

Date	Text affected
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Foreword

Publishing information

This British Standard is published by BSI Standards Limited, under licence from The British Standards Institution, and came into effect on 30 September 2023. It was prepared by Technical Committee B/511, *Buildings mobile and temporary*. A list of organizations represented on this committee can be obtained on request to the committee manager.

Supersession

This British Standard supersedes [BS 3632:2015](#), which will be withdrawn on 30 September 2024.

Information about this document

When this British Standard was first published in 1963, the title *Specification for permanent residential caravans* was adopted to reflect the design and use of this type of caravan, the term by which it was then commonly known. Since then, the permanent residential caravan has undergone considerable development in terms of size, services, equipment and material.

When issued in 1981, this British Standard was titled *Specification for mobile homes*, “mobile home” being the term used in the United Kingdom following the Mobile Homes Act 1975 [1]. In 1981, the term “park home” was adopted by the caravan industry and was introduced into the 1981 revision of this standard. The term “residential park home” was adopted when this standard was revised in 1995.

The 2005 revision of this standard was developed to include criteria appropriate to more conventional forms of housing, and was aimed at ensuring the suitability of a residential park home as a permanent dwelling. The 2015 revision of the standard continued that approach and reflected the advances in material technologies and building techniques that had taken place since the 2005 revision. The revision also included a significant increase in the requirements to incorporate energy efficiency measures that were unavailable or unsuitable for inclusion in the 2005 edition. These measures helped to reduce the environmental footprint of residential park homes in the built environment.

The 2023 revision has gone further in considering wider technical direction affecting residential use as the UK prepares for a more sustainable future. In addition to improved thermal transmittances through the external envelope structure, moisture control has been enhanced to help mitigate the risk of interstitial condensation. This revision has also been reformatted to separate improved construction design guidance from habitation design which includes additional guidance for features which have become common.

This publication can be withdrawn, revised, partially superseded or superseded. Information regarding the status of this publication can be found in the Standards Catalogue on the BSI website at bsigroup.com/standards, or by contacting the Customer Services team.

Where websites and webpages have been cited, they are provided for ease of reference and are correct at the time of publication. The location of a webpage or website, or its contents, cannot be guaranteed.

Presentational conventions

The provisions of this standard are presented in roman (i.e. upright) type. Its requirements are expressed in sentences in which the principal auxiliary verb is “shall”.

Commentary, explanation and general informative material is presented in smaller italic type, and does not constitute a normative element.

Where words have alternative spellings, the preferred spelling of the Shorter Oxford English Dictionary is used (e.g. “organization” rather than “organisation”).

Contractual and legal considerations

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The recipient is advised to consider seeking professional guidance with respect to its use of this publication.

This publication is not intended to constitute a contract. Users are responsible for its correct application.

Compliance with a British Standard cannot confer immunity from legal obligations.

Attention is drawn to the following regulations:

- Furniture and Furnishing (Fire) (Safety) Regulations 1988, as amended [2]
- Gas Safety (Installation and use) Regulations 1998 [3]
- Gas Safety (Installation and Use) Regulations (Northern Ireland) 2004 [4]
- Water Supply (Water Fittings) Regulations 1999, as amended [5]
- Water Supply (Water Fittings) (Scotland) Byelaws 2014 [6]
- Water Supply (Water Fittings) Regulations (Northern Ireland) 2009 [7]
- Caravan Sites and Control of Development Act 1960, as amended [8]
- Caravan Sites Act 1968, as amended [9]
- General Product Safety Regulations 2005 [10]
- Manual Handling Operations Regulations 1992, as amended [11]

1 Scope

This British Standard specifies requirements for the manufacture of ex-works residential park homes for use as a permanent place of residence. It also specifies the tests and acceptance criteria to verify conformity to the requirements.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes provisions of this document.¹⁾ For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

Standards publications

[BS 476-3](#), *Fire tests on building materials and structures – Part 3: Classification and method of test for external fire exposure to roofs*

[BS 476-7](#), *Fire tests on building materials and structures – Part 7: Method for classification of the surface spread of flame of products*

[BS 715](#), *Specification for metal flue boxes for gas-fired appliances not exceeding 20 kW*

[BS 1188](#), *Specification for ceramic wash basins and pedestals*

[BS 5410-1](#), *Code of practice for oil firing – Part 1: Installations up to 45 kW output capacity for space heating and hot water supply purposes*

[BS 5440-1](#), *Flueing and ventilation for gas appliances of rated input not exceeding 70 kW net (1st, 2nd and 3rd family gases) – Part 1: Specification for installation of gas appliances to chimneys and for maintenance of chimneys*

[BS 5446-2](#), *Fire detection and fire alarm devices for dwellings – Specification for heat alarms*

[BS 5608](#), *Specification for preformed rigid polyurethane (PUR) and polyisocyanurate (PIR) foams for thermal insulation of pipework and equipment*

[BS 5839-6](#), *Fire detection and fire alarm systems for buildings – Part 6: Code of practice for the design, installation, commissioning and maintenance of fire detection and fire alarm systems in domestic buildings*

[BS 6172](#), *Specification for installation, servicing and maintenance of domestic gas cooking appliances (2nd and 3rd family gases) – Specification*

[BS 6262-4](#), *Glazing for buildings – Part 4: Code of practice for safety related to human impact*

[BS 6762-2](#), *Services for leisure accommodation vehicles and transportable accommodation units – Part 2: Code of practice for the installation of solid fuel fired heating in park homes and transportable accommodation units*

[BS 6891](#), *Installation of low pressure gas pipework of up to 35 mm (R11/4) in domestic premises (2nd family gas) – Specification*

[BS 7671](#), *Requirements for electrical installations – IET Wiring Regulations*

[BS 8303](#), *Installation of domestic heating and cooking appliances burning wood and solid mineral fuels – Specification*

[BS 8417](#), *Preservation of wood – Code of practice*

¹⁾ Documents that are referred to solely in an informative manner are listed in the Bibliography.

[BS EN 30-1-1](#), Domestic cooking appliances burning gas – Part 1-1: Safety – General

[BS EN 33](#), Pedestal WC pans with close-coupled flushing cistern – Connecting dimensions

BS EN 806 (all parts), Specification for installations inside buildings conveying water for human consumption

[BS EN 997](#), WC pans and WC suites with integral trap

[BS EN 1111](#), Sanitary tapware – Thermostatic mixing valves (PN 10) – General technical specification

[BS EN 1287](#), Sanitary tapware – Low pressure thermostatic mixing valves – General technical specifications

[BS EN 12056-2](#), Gravity drainage systems inside buildings – Part 2: Sanitary pipework, layout and calculation

[BS EN 12521](#), Furniture – Strength, durability and safety – Requirements for domestic tables

[BS EN 12600](#), Glass in building – Pendulum test – Impact test method and classification for flat glass

[BS EN 13501-1](#), Fire classification of construction products and building elements – Classification using data from reaction to fire tests

[BS EN 13501-5](#), Fire classification of construction products and building elements – Part 5: Classification using data from external fire exposure to roofs tests

[BS EN 13859-1](#), Flexible sheets for waterproofing – Definitions and characteristics of underlays – Part 1: Underlays for discontinuous roofing

[BS EN 14604](#), Smoke alarm devices

[BS EN 14749](#), Domestic and kitchen storage units and worktops – Safety requirements and test methods

[BS EN 50291-1](#), Electrical apparatus for the detection of carbon monoxide in domestic premises – Part 1: Test methods and performance requirements

[BS EN 60335-2-6](#), Household and similar electrical appliances – Safety – Part 2-6: Particular requirements for stationary cooking ranges, hobs, ovens and similar appliances

[BS EN 60335-2-24](#), Household and similar electrical appliances – Safety – Part 2-24: Particular requirements for refrigerating appliances, ice-cream appliances and ice makers

[BS EN ISO 10140-2](#), Acoustics – Laboratory measurement of sound insulation of building elements – Part 2: Measurement of airborne sound insulation

[BS EN ISO 12944-2:2017](#), Paints and varnishes – Corrosion protection of steel structures by protective paint systems – Part 2: Classification of environments

Other publications

[N1] ANDERSON, B. AND KOSMINA, L. *Conventions for U-value calculations*. BR 443. Second edition. Watford: BRE, 2019.

3 Terms and definitions

For the purposes of this British Standard, the following terms and definitions apply.

3.1 berth

provision for sleeping

NOTE 1 In bedrooms, any space intended for a single, double or bunkbed is considered a berth.

NOTE 2 A mattress of ≤ 1.1 m wide is considered as one berth and a mattress of > 1.1 m wide is considered as two berths. A bunkbed is considered as more than one berth according to the combination of mattress sizes.

NOTE 3 Berths include sofa-beds, pull-out beds, fold-down beds, stow-away beds, etc. but not inflatable air mattresses used without a bed frame.

NOTE 4 See 5.1 on documented occupancy level when using the high/low level background ventilation method.

3.2 compartment

area enclosed by full-height partition walls and closed off from another compartment by a solid, full-height door

3.3 equivalent area of ventilation

area of a sharp-edged circular orifice through which the same volume flow rate of air would pass as the opening in the ventilator under an identical applied pressure difference

NOTE This is usually less than its free area.

3.4 external envelope structure

outside structure of the residential park home including floor, walls, and roof

3.5 floor area

surface area determined by internal measurements taken at floor level, between the internal faces of external walls and/or the faces of internal full-height partition walls, excluding skirting boards

3.6 floor level

top surface of the external envelope structure floor excluding floor finishes

NOTE The floor level of the residential park home is designated as the main building envelope structure on which a person is expected to walk. A step or other raised platform within a compartment is not a floor level. A secondary (false) floor may be designated as floor level if it extends throughout the whole room or the whole functional area, such as the full extent of the defined dining area, kitchen area, etc. which is located within an open-plan compartment (see 5.2).

3.7 free area of ventilation

geometric open area of the aperture of a ventilator

NOTE This is usually more than its equivalent area.

3.8 fuel-burning appliance

device that burns fossil or carbon-based fuel, such as gas, oil, solid fuel, etc. where carbon monoxide and other gases are by-products of combustion

3.9 habitable compartment

compartment used for living purposes which is not solely a bathroom or shower room compartment, WC compartment, storage cupboard, or hallway

NOTE 1 The inclusion of any habitable function (a function normally found in a habitable compartment) in any non-habitable compartment renders the compartment habitable unless otherwise stated.

NOTE 2 Kitchens and utility rooms are habitable compartments.

3.10 high-level bunk platform

integrated platform designed to solely accommodate a mattress for a sleeping berth(s) which is accessed from a habitable compartment

NOTE The platform is not designated a floor but is a framework for an upper bunk mattress.

3.11 high/low level ventilator (background ventilator)

ventilation opening provided directly through the external envelope structure

3.12 residential park home

caravan manufactured for use as a permanent place of residence

NOTE Attention is drawn to the following statutory regulations:

- *Caravan Sites and Control of Development Act 1960 (as amended) [8];*
- *Caravan Sites Act 1968 (as amended) [9];*
- *Caravan Sites Act 1968 and Social Landlords (Permissible Additional Purposes) (England) Order 2006 (Definition of Caravan) (Amendment) (England) Order 2006 [12];*
- *Caravans Act (Northern Ireland) 2011 [13]; and*
- *Caravan Sites Act 1968 (Amendment of Definition of Caravan) (Scotland) Order 2019 [14].*

These statutory documents include guidance on the number of sections, length, width, height, etc. (see [Clause 4](#)).

3.13 storage cupboard

non-habitable compartment enclosed by full-height partition walls and closed off from another compartment by a solid, full-height door

NOTE 1 A storage cupboard containing a washing machine and/or tumble dryer may be designated non-habitable provided:

- a) the storage cupboard has a floor area of not more than 2 m²;*
- b) there is a means of escape (see [5.5](#)) either directly from the storage cupboard or from the compartment in which the storage cupboard is located;*
- c) the storage cupboard is considered a wet room; and*
- d) there is provision for background ventilation and mechanical extraction (see [5.12.1](#)).*

NOTE 2 The inclusion of any other habitable function (a function normally found in a habitable compartment) in a storage cupboard renders the storage cupboard habitable unless entry into the storage cupboard located in a habitable compartment is not possible (e.g. a desk in a storage cupboard that can only be used when the door is open).

3.14 trickle ventilator (background ventilator)

proprietary device incorporated into a door, window or other sub-assembly component fitted into the external envelope structure, to allow small amounts of natural ventilation into internal compartments when door and window casements are otherwise closed

3.15 wet room

compartment used for domestic activities such as cooking, laundry, and bathing which give rise to the production of airborne moisture

4 Construction design

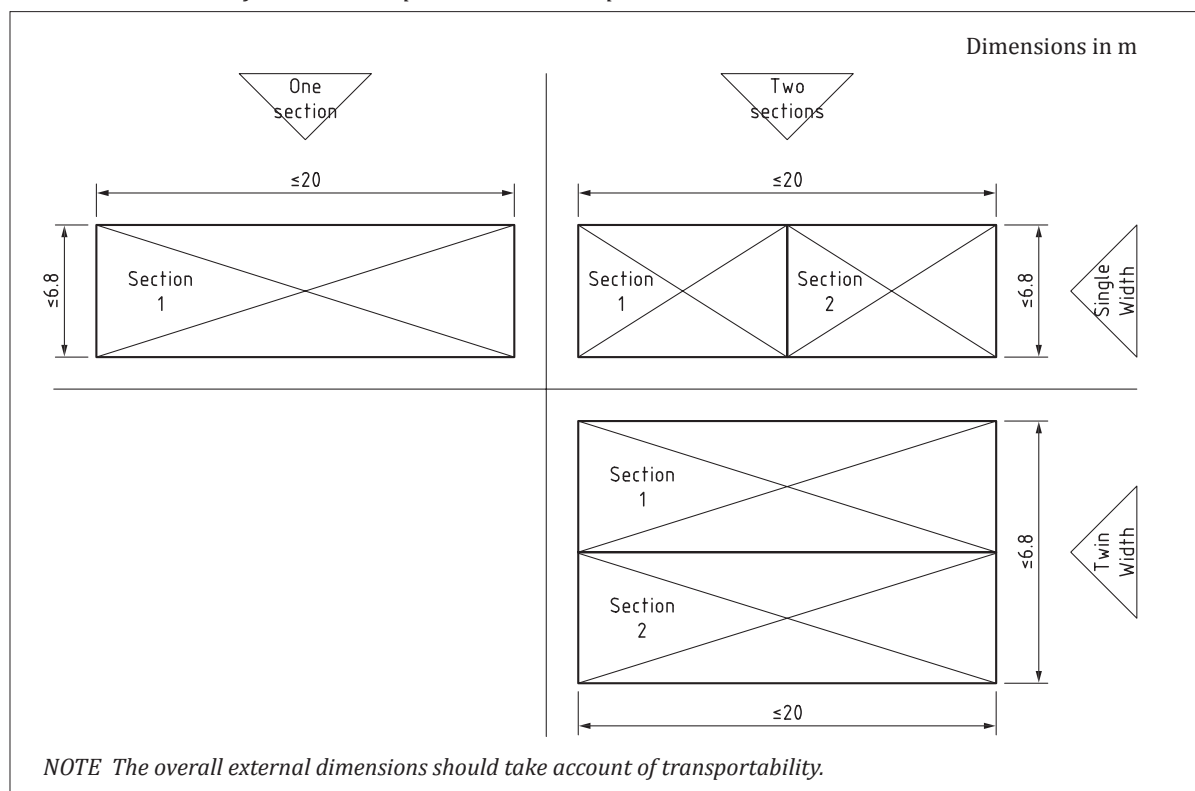
COMMENTARY ON CLAUSE 4

Residential park homes are manufactured in a maximum of two sections (see [Figure 1](#)), each constructed on a supporting structure (see [4.1](#)) which provides permanent mobility either by being towed or by being placed on a transportation vehicle.

A conservatory or other structure included on the same supporting structure which extends beyond the external envelope structure (see [3.4](#)) is usually not treated as a separate section.

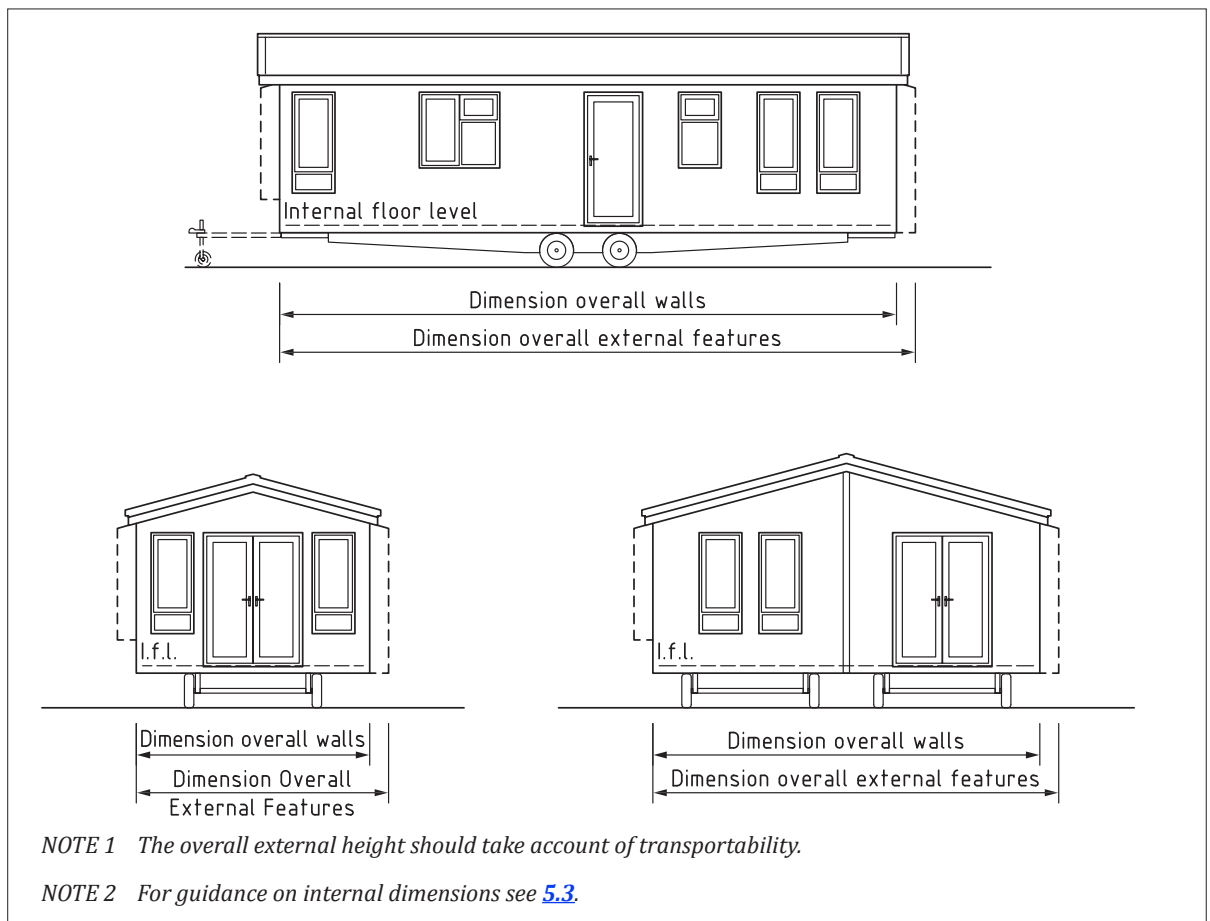
Attention is drawn to the Caravan Sites Act 1968 [9] and subsequent amendments.

Figure 1 — Section limitations of a residential park home – examples



External dimensions usually exclude roof overhangs and other projections above internal floor level (see [Figure 2](#)).

Where external features extend down to or lower than internal floor level, they are usually treated as inclusive for the purpose of measuring external dimensions.

Figure 2 — Parameters for external dimensions – examples

4.1 Supporting structure (chassis)

4.1.1 General

The chassis for each section shall be capable of transmitting to the ground the dead and imposed loads to which it might be subjected during transportation, manoeuvring, siting, and normal use.

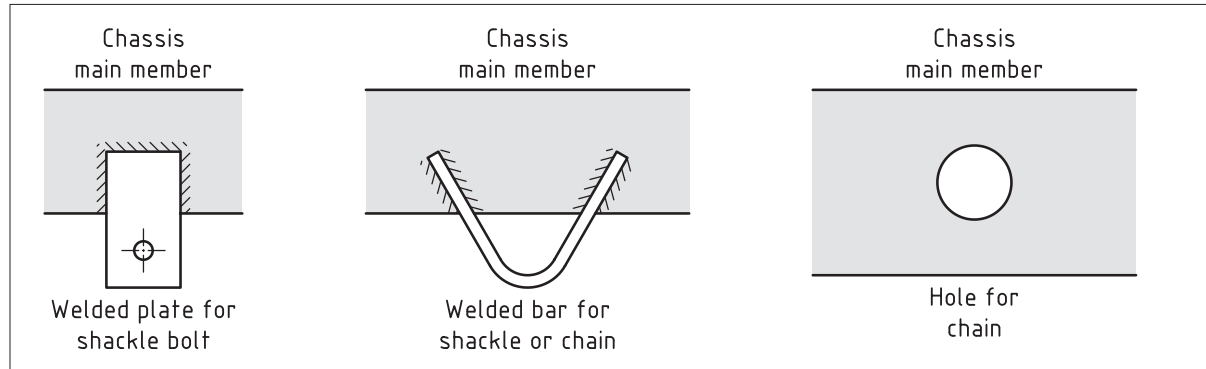
Where a wheeled chassis is used:

- axle, wheel and tyre configurations shall be capable of supporting the dead and imposed loads to which they might be subjected during transportation, manoeuvring, and siting;
- for a residential park home greater than 10.9 m in overall length (excluding drawbars) or with a mass which imposes a load greater than 5 500 kg onto the axle configuration, no fewer than two axles shall be fitted per section;
- where there are two or more axles, the maximum spacing between axle centres shall be not greater than twice the outside diameter of the tyre, and the unsupported residential park home shall be as neutrally balanced as is practicable;
- where there is only one axle, or where the balance is not neutral, the primary end (the end with the positive nose weight) shall be clearly identified by a warning notice adjacent to the drawbar coupling position; and
- where the nose weight is greater than 25 kg, a warning notice making reference to the Manual Handling Operations Regulations [11] shall be displayed adjacent to the drawbar coupling position.

4.1.2 Stability

Holding down points (see [Figure 3](#)) shall be provided, each capable of resisting a load of 10 kN. Holding down points shall be located 1 m from each end of each longitudinal main member of each chassis section. If for technical reasons it is not possible to locate a holding down point in the required location, a tolerance of ± 200 mm shall be allowed.

Figure 3 — Holding down point – examples



4.1.3 Marking

Durable permanent markings shall be provided for the following.

- a) Identification of any of the following, if applicable:
 - 1) craning points;
 - 2) holding down points;
 - 3) jacking points;
 - 4) support points;
 - 5) transportation securing points; and/or
 - 6) winching points.
- b) Primary end warning notice, if applicable.
- c) Nose weight warning notice.
- d) Manufacturer's plate on which the maximum permissible mass is marked.

4.2 External envelope structure

4.2.1 Moisture resistance

4.2.1.1 General

The external envelope structure (see [3.4](#)) shall be designed to prevent the penetration of weather and damp under normal conditions.

NOTE 1 Suspended floors, walls, and roofs can contain cavities which are likely to have a significant effect on the risk of condensation occurring within the construction (interstitial condensation).

To assist in mitigating the risk of water vapour from inside the residential park home causing condensation within the external envelope structure:

- a) the external envelope structure shall have a proprietary continuous air and vapour control layer (AVCL) between the internal space and the thermal insulation, with a typical vapour resistance of not less than 50 MN·s/g. The AVCL may consist of:
 - 1) a proprietary vapour-impermeable AVCL membrane such as non-perforated polythene;

NOTE 2 A useful guide to vapour resistances of thin membranes and foils is given in [BS 5250:2021](#), Table B.2.

- 2) a proprietary vapour-impermeable AVCL applied surface coating;
 - 3) a proprietary integral barrier, such as a board with an applied vapour-impermeable AVCL such as a foil or film; or
 - 4) materials of construction with an inherently high vapour resistance such as glass, plastic sheet floor covering, or steel liner.
- b) as an alternative to an AVCL, unless otherwise stated, an interstitial condensation risk assessment shall be carried out to confirm that the materials selected mitigate the risk under normal annual conditions.

NOTE 3 Air movement from within the residential park home into any cavity within the external envelope structure should be avoided by the adoption of an airtight construction. Good practice is to seal penetrations through the internal face of the structure around pipes, ducts, electrical pattresses and wiring, etc.

There shall be no gaps in the thermal insulation and/or between the thermal insulation and adjacent components.

NOTE 4 Gaps between thermal insulation and joists, studs, rafters, and trusses, etc. can result in localized condensation.

There shall be no ventilation system interconnecting the internal areas of the residential park home and the roof structure.

NOTE 5 Further guidance on dealing with interstitial condensation is given in [BS 5250](#).

4.2.1.2 Floors

If an AVCL is installed, it shall be located between the internal areas of the residential park home and the thermal insulation.

NOTE 1 When an LPG installation is used, care should be taken so that spilt gas cannot enter the floor cavity where it can build up (see [8.2](#)).

The internal floor deck and/or AVCL shall have a vapour resistance greater than that of any external membrane/sheathing.

When thermal insulation is installed between the joists, it shall not be supported on a material which provides a vapour resistance greater than that of the thermal insulation.

When non-rigid thermal insulation in the floor is supported on a flexible membrane such as polythene, it shall be installed so that the insulation does not sag away from the floor joists.

NOTE 2 Specific guidance for ventilation of voids below suspended timber floors is given in [BS 5250](#).

4.2.1.3 Walls

If an AVCL is installed, it shall be located between the internal areas of the residential park home and the thermal insulation.

The internal lining and/or AVCL shall have a vapour resistance greater than that of any external sheathing/membrane.

In walls there is a risk of interstitial condensation occurring behind external sidings (if fitted) and therefore where walls have external sidings:

- a) unless the siding manufacturer's installation instructions state otherwise, a ventilated space shall be provided immediately behind the external siding; and

- b) a vapour-permeable breather membrane with a typical water vapour resistance of less than 0.6 MN·s/g shall be installed on the external side of the thermal insulation in accordance with the membrane manufacturer's instructions. Where there is external sheathing over the framework, the vapour-permeable breather membrane shall be installed on the external side of the sheathing.

4.2.1.4 Roofs

Roofs shall be designed to resist the ingress of water, wind-blown snow, and dust into the residential park home.

Cold flat roofs and unventilated roofs shall have an AVCL installed between the internal areas of the residential park home and the thermal insulation. In all other roofs, if an AVCL is installed it shall be located between the internal areas of the residential park home and the thermal insulation.

An underlay membrane shall be included inside the outer roof covering of pitched roofs and be installed in accordance with the membrane manufacturer's instructions. The membrane shall be suitable for use as a roofing membrane and be either:

- a) vapour-impermeable; or
- b) vapour-permeable.

If the roof:

- 1) includes external sheathing;
- 2) requires ventilation through the underlay membrane (see [4.2.2.1](#)); or
- 3) is unventilated (see [4.2.2.5](#));

then, provided the vapour-permeable underlay membrane manufacturer's installation instructions do not state otherwise, as a minimum a 25 mm deep counter-batten shall be installed under the tile battens, over the underlay membrane, to allow ventilation to penetrate from the eaves to the ridge (see [Figure 4](#)).