

PANELLED ROOF CASSETTES: WARRANTY REQUIREMENTS



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Introduction

This technical document provides additional guidance relating to how the Functional Requirements in the Technical Manual may be satisfied when Panelled Roof Cassettes are used as a part of your project. It covers some of the main points to be considered with this type of build up and puts forward how our Functional Requirements can be satisfied.

What are roof cassettes systems?

For the purposes of our Warranty, roof cassette systems are prefabricated pitched roof panels (open or closed) which may also be supplied with wall and floor panels, beams and other supporting elements of structure. The systems may be constructed from timber, metal or structural insulated panels (SIP) or a combination of these. They can provide a completely clear roof space free from struts ties or bracing.

What are the Warranty providers concerns?

Design concerns

The roof structure is a critical part of the building design for structural stability, there will also need to be consideration for, prevention of fire spread, thermal insulation, durability, weatherproofing, vapour permeability and sometimes sound insulation.

The stability of traditional cut roofs and truss roof designs is dependent on the triangulation of all of the different elements that work together to take the horizontal thrust at eaves level away from the walls.

Roof cassette systems are however outside the scope of Approved Document A of the Building Regulations as they do not meet the basic requirements for stability and because they are a non-standard form of construction.

Many panel roof designs do not consider how the horizontal thrust is dealt with as they are not adequately tied to the structure, and/or gable walls. Additionally, alterations to accommodate additional elements or introduce ventilation openings above ceiling ties are being made to the structural sheathing with no regard for the original accepted structural design.

Our internal review show that the system design packages are limited to the panel itself and are not considering the interaction with the wall, gable and floor structures or the need to meet the other requirements of a roof as described above.

Installation concerns

On site installations of these systems have been found to not follow the approved design, often due to the unfamiliarity of the system requirements by site operatives. The design and installation of the correct connections are often ignored and can lead to failure of the panel system.

Warranty stance

Failure to provide an appropriate design and a failure to follow correct installation procedures as determined by such designs is considered to compromise the ability of the roof construction and the supporting external walls in meeting with the Functional Requirements and Performance Standards stipulated by the Technical Manual, notably those relating to structural stability.

What Developers should action after reading this document?

For Warranty purposes, where panelled roof cassettes are to be used on our sites, Developers must ensure that they are clearly identified at the start of a project and a full specification, including the third party certification documentation, be made available to our Warranty surveyor for a site specific review prior to commencement.

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Third party product approval

Developers should ensure that suppliers and manufacturers of the roof cassette system must hold full third party product approval from an independent approval body which is accepted by us. This could either be a UKAS, European equivalent product conformity accredited organisation or other body accepted by us, which looks at the system as a whole and reports on its suitability and scope of accepted use.

Suitable third party product approval must be in place by 1st July 2026.

The Developers design team must review this information against the requirements of the Technical Manual before submitting to the Warranty provider – notably considering 'Appendix C' of our Technical Manual which provides guidance on the suitability of products and systems, and emphasises the following which must be covered in third party product approval certificates:

- Structural integrity, including serviceability of product.
- Safety in case of fire*.
- Hygiene, Health & Environment including:
- Vapour permeability and moisture resistance.
- Water tightness.
- Release of dangerous substances.
- Safety in use (where appropriate).
- Sound insulation.*
- Thermal performance*, air tightness and movement characteristics.
- Durability; including:
 - Compatibility of materials (interaction between components, structural or otherwise).
 - Longevity of materials (identifying it achieves a 60 year service life in accordance with CML requirements where used in the structure or lesser period where identified in the service life table contained within 'Appendix C' of our Technical Manual).
 - Maintenance issues.

All components used in manufacturing should satisfy 'Appendix C' of our Technical Manual.

* Please note: Evidence will be required that the projects appointed Building Control Body is satisfied in respect of safety in case of fire, sound insulation and thermal performance.

In addition, for roof cassette systems, the following should also be included in the third party product approval:

- Regulatory compliance.
- Inspection and surveillance of factory production.
- Installation guidance (with information on acceptable tolerances).
- Approval of installers.
- Confirmation the manufacturer holds ISO 9001 certification.

Design responsibility

We require an Engineer to take overall design responsibility of the roof cassette systems and to take account of interactions between the roof cassettes and the main house structure.

The Developers design team and appointed Engineers shall provide appropriate design information that covers the structural design of roof cassette systems, and considers either:

1. Roof cassettes that spans eaves to ridge.
2. Roof cassettes that spans gable to gable.

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The design information documents required for each individual site specific review must include:

1. A full description and specification of the system and how this system complies with all current regulations and design codes, along with copies of calculations, drawings, reports, testing, etc.
2. Structural calculations and drawings should be carried out in accordance with the current European/British standards and refer to the worst case scenario where the system could be used (structure location: max altitude, closest distance to shore/critical span of each structural element/max positive and negative load).
3. Each project must have a qualified Structural Engineers design/drawings and calculations that oversees all structural components of the building and elements that interact with the roof cassette to ensure they are compatible. The calculation package must fully reflect the construction type and build-ups of the final structure of the house and roof including roof covering and any additional attachments (such as PV panels).
4. Principle connection details (drawing and calculations) must be provided for the floor and roof panel at the external wall, ridge connections, ceiling strut connections, and floor and roof connections. The calculations must cover all connection details and details of the roof load transfer.
5. There must also be a house type specific fixing schedule document available, to allow the Warranty surveyor to check that the fixing specification has been followed on site. Please note: a 'generic fixing specification' is **not** acceptable. It should also not be left to a third party to provide a fixing specification, this should be part of the holistic structural package from the Engineer.
6. The structural calculation package will need to include wind uplift calculations to ensure that the roof will be connected by restraint straps to the wall plates and gable/hipped ends accordingly. A gable restraint system will need to part of the design calculation package to consider the continuous or raised gable wall plate depending on the gable panel (i.e. masonry or timber frame or panels).
7. The whole design package must consider how all other elements will interact with the roofing cassette, such as insertion of false prefabricated chimneys, roof light penetrations or dormers, roof covering, solar photovoltaic installations and ventilation systems.
8. The design package will also need to consider the prevention of fire spread, thermal insulation requirements, durability, weatherproofing, vapour permeability and sound insulation requirements (where applicable). The designer must consider critical elements especially at party walls and gable ends for fire resistance where Building Regulation fire safety standards may have different requirements than a traditional roof due to the differing loadbearing elements.
9. As part of the design there must be details on how the roofing cassettes will be finished at eaves and verge. Due to the varying nature of the roofing cassettes this could be done in different ways. Such as site attached constructed gable ladder or pre-installed gable ladder to roofing cassettes. Some have extended rafters to be cut on site and some have additional add on sections to extend the eaves. This must be in the design and not left as an ad-hoc solution to be constructed on site.
10. Roof cassette manufacturers must have a system operating procedure manual covering repairability and installation and sign off processes. All installers of the roof cassette system should receive suitable training from the manufacturer evidence of which must be provided to the Warranty Surveyor upon request.

Please note, roof cassette systems may be determined by the Building Control Body as an element of structure and therefore the necessary fire resistance may be applicable. Please contact your Building Control Body to agree compliance.

Installers

Developers must ensure that all installers of the roof cassette system have received suitable training from the manufacturer, and evidence of this should be provided to the Warranty Surveyor upon request – for example:

- Installation by approved installers and issue of completion certificate.
- Installation by others will require completion sign-off certificate by manufacturer/designer.

All components used to install and fix a panelled roof cassette shall be strictly as specified by the designing Engineer and satisfy 'Appendix C' of our Technical Manual.

Installers must not substitute fixings or use methodologies outside of the accepted and design approaches as determined by the designing Engineer.

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Controlled and monitored installations

The Developer should also ensure that site teams have appropriate installation methodology in place for the installation of panelled roof cassettes. This information should be explicitly followed on-site by any installation teams, and must align with the manufacturer's installation procedure details, as identified in the third party approval, and with the designing Engineers requirements.

Site teams should also be able to demonstrate to our Warranty surveyor upon request that quality assurance procedures covering installation are in place and be able to demonstrate appropriate controls and monitoring checks are being undertaken.

Quality assurance procedures and practice should also factor in that roofing cassette panels will require temporary protection (when being stored on-site and where it is left exposed when in-build) as per the manufacturer's recommendations. Where a breather membrane is proposed as a temporary weather protection details of maximum exposure of the membrane should be provided.

Transitional arrangements

For roof cassette systems that do not yet hold a full third party product approval, manufacturers must have in place a full third party product approval from an appropriate independent UKAS approved product conformity body by **1st of July 2026**.

Note: This updates the previous transitional arrangements set out in January 2025.