Technical Update: Thatched roofing: interactions with modern construction techniques

Introduction

This article provides additional guidance relating to how the Functional Requirements can be satisfied in our Technical Manual.

The 'Provision of information' section below indicates the information we need and this is followed by guidance on how our Functional Requirements may be satisfied.

Provision of information

For warranty purposes we require the following:

- The roof structure should be supported by an appropriate structural design and calculations that include the additional loadings a thatched roof creates.
- Fire resisting sarking board products must be confirmed as suitable for use within thatched roofs by supporting documentation, such as product testing to a recognised test standard or a relevant independent 3rd Party product conformity certificate.
- Clear design details showing the ventilation strategy for the pitched roof voids, notably due to the inherent lack of ridge ventilation created by thatched roof ridge detailing.
- An air and vapour control layer (AVCL) must be incorporated on the warm side of insulation as a means to combat vapour movement into roof voids and the thatch material. AVCLs must be used alongside all roof configurations and their associated ventilation measures.
- Roof voids should contain a domestic mains powered smoke alarm with battery back-up, which is interlinked into a suitably designed early warning system to BS 5839.
- Thatch material procurement is generally dictated by planning authority requirements, and this often results in a product sourced from local suppliers. For warranty, we must have a confirmed durability of 15 years from a supplier holding membership of an industry recognised association e.g. National Thatching Straw Growers Association (NTSGA).

Structure

A structural engineer shall take the thatched roof covering and the associated components, e.g. roof battens and fire resisting sarking board (required to meet the Dorset model design approach), into account as part of their structural design, and this should be provided to the warranty surveyor.

The installation and formation of the main structural roof elements should follow Section 11 of the Premier Guarantee Warranty Technical Manual.

Fire precautions

The use of the Dorset model to comply with Building Regulations requires the rafters to be overdrawn with a micro-porous fire resistant boarding to increase fire resistance. For warranty purposes, the boarding must have appropriate third-party approval and be suitable for use in that situation.

Chimneys should conform to Building Regulations, particularly in relation to their proximity to thatch due to it combustible or conducting properties. The chimney should terminate at least 1.8m above the height of the ridge – this measurement is inclusive of any chimney pots, which should have a limited unit height of 600mm.

When following the Dorset model guidance, it is noted that the guidance recommends ceilings beneath a thatched roof need to be capable of supporting access to fight fires from inside the roof via a fire resisting

hatch of 900mm x 600mm. Where this is required by Building Control, the Structural engineer must include this in the design.

Services

Electrical fittings such recessed lighting into ceilings below thatched roofs should be avoided, with any lights within the loft space enclosed with a fire resisting bulkhead. External lighting should not be mounted under the eaves of the thatch.

Television aerial and communication cabling should not pass over or under the thatch. External aerials should be fitted to a free standing pole at least 7m from the roof.

Any plumbing within the roof space should utilise flame free jointing.

Junctions between the thatch and other building elements should be made weather tight using lead flashings. Sizing and detailing should follow recognised lead work practice.

Moisture management and ventilation

AVCLs

An AVCL should be incorporated on the warm side of insulation as a means to combat vapour movement into voids and the thatch material. AVCLs must be used alongside all roof configurations and their associated ventilation measures.

Cold pitched roof ventilation

Cold pitched roofs should be served by 25mm continuous eaves ventilation strip at the eaves. As the formation of intricate detailing at the ridge in thatched roofing often results in situations where it is not practicable to incorporate ridge ventilation, it is essential that an assessment of the potential risks and the alternative means to promote air changes within the void are fully demonstrated by a designed ventilation strategy.

Insulation employed at ceiling level for an improved thermal performance must incorporate appropriate provision to allow for unobstructed air flow at the eaves e.g. eaves ventilation strips fitted under the fire resisting sarking board at the eaves location.

Warm pitched roof ventilation

Rigid insulation used at the rafter line, such as within room in a roof situations, must allow for airflow between the insulation and the underside of the fire resisting sarking board by providing a 50mm ventilated void. As above, where it is not practicable to incorporate ridge ventilation, the means to promote air changes via cross flow ventilation within this ventilated void must be fully demonstrated by a designed ventilation strategy.

Reducing the transfer of water vapour from occupied spaces

A combination of good workmanship on AVCLs, the assessment of occupancy levels, and moisture management within occupied spaces via the use of a designed ventilation system such as use of background ventilation or mechanical extraction systems, may provide options in reducing the transfer of water vapour into the roof voids.

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Definitions

- **Long straw** is a thatching material that is placed into position, then raked – it is often said this approach takes on a 'poured onto the roof' look. Overall thickness for new work is 400mm.
- **Combed wheat reed** is a thatching material that has a much neater, trimmed look and during installation it is dressed and knocked into shape by the thatcher. Overall thickness for new work is 300-450mm.
- **Water reed** is a thatching material that has water reed, reed mace and wild iris mixed together so may often be referred to as mixed reed. Again a trimmed look, dressed and knocked into shape by the thatcher. Overall thickness for new work is 300mm.
- **Yealms** are bundled tight compact layers of straw which are 450mm wide and 125mm thick.
- **Bottles** are slightly wider bundles used to create eaves and gable detailing.
- **Wadds** are small bunches of combed wheat reed used to create the eaves and gables.
- **Sway** is a split round hazel rod 1-3m long which is placed horizontally across each course of thatch.
- **Spar** is a 750mm long hazel or willow rod with a twist at its centre driven through laterally, bundle to bundle, like a skewer.
- **Crook** is a 6-10mm rod, 200-300mm in length with a point at one end and a turned head at the other. It is used to secure the sway.
- **Dolly** is a roll tied bundle of reed or straw with a 100-200mm diameter and varying length and is used in the ridge construction.
- **Liggers and cross rods** are split hazel or willow rods of 1-1.5m – these form the familiar hall mark signatures of the installing craftsperson, often found around the ridge.

Warranty position

For warranty purposes, the general Functional Requirements within the Technical Manual must still be applied to thatched roofs, along with the additional functional requirement covered within Section 11 Roofs.

At practical completion of the roof, a thorough recorded visual inspection should be carried out with representation from the general contractor and the specialist roofing contractor in attendance.

As this is highly specialised work, it would not be unreasonable for the Risk Management Surveyor to request evidence of experience of the specialist roofing contractor, which may be proved and demonstrated by membership of an appropriate trade association that sets a Code of Conduct for the service.

Every care was taken to ensure the information in this article was correct at the time of publication (May 2022). Guidance provided does not replace the reader's professional judgement and any construction project should comply with the relevant Building Regulations or applicable technical standards. For the most up to date Premier Guarantee technical guidance please refer to your Risk Management Surveyor and the latest version of the Premier Guarantee Technical Manual.

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