



Best practice guide

Section 4

Roofs



Best practice guide

Our series of Best Practice Guides take you through what the Pride in the Job judges look for at each stage of construction and when considering the site manager's overall organisation and management skills.

The Pride in the Job marking sheet used by our judges has 43 marking lines split across 10 sections. The judges will give a score for each line – where there is no work to mark, that line will be left blank and no mark given. A mark of four indicates compliance with NHBC Standards. A mark of five indicates extra attention to detail over and above compliance standards. A mark of six would indicate that much of what the judges have seen cannot be improved upon. A mark less than four would indicate varying issues relating to workmanship and non-compliance with NHBC's Standards – the greater the issue or number of the same issue, the lower the mark. The final score will be all the marks awarded expressed as a percentage.

These Guides set out what the judges are looking for with clear hints and tips on the sort of practice that will lead to higher marks.

Clearly it is impossible in these short guides to cover every single point of construction – we try here to cover the main issues that are taken into account when considering a mark for each score line.

When looking at the photographs, consider each one in the context of the score line heading – don't be distracted by something else that isn't as good – that will be marked accordingly elsewhere.

Section 4 Roofs

In this section we look at the structural build of the roof and its ability to keep out the weather. In terraced properties, we also need to see evidence of appropriate measures taken to prevent the transmission of fire between dwellings.

Framing (including dummy chimneys)

Pitched roof coverings

Flat roof coverings

Ventilation, underfelt and insulation

Flashing, gutters and downpipes

Fire stopping (roofs)

Section 4

Framing

All types of roof construction are included in the score line, whether the roof is flat or pitched, timber, concrete or other material. In timber pitched roofs, connections at the wall plate position shall be considered. Restraint straps must be correctly positioned and fixed to the roof members. The diagonal bracing should extend from the wall plate to the highest longitudinal brace. The longitudinal bracing should be tight against gable walls. Chevron bracing is usually required to truss rafters when the span is greater than eight metres. All hangers supporting rafters at girder truss positions must be fully nailed and each ply of the girder truss is to be fully fixed together. Appropriate thought should be given to connections in steel and concrete framed roofs. Similar basic principles for bracing applies to all types of roof construction, ie. the bracing should transfer the wind load to other elements designed to resist these forces. When installing dummy chimneys, it is essential to check that they have been fixed in accordance with manufacturer's installation guidelines for structural stability and in cases where fire stopping materials are required.

Pride – Care taken with both construction of the frame and bracing it for stability, accuracy of cutting, where applicable, and fixing of cut members, general fixing of components and their connection to the structure. Neatness of valley support construction. Good support for diminishing trusses that recognises the bearing angle of the supporting rafters and proper support for flying ends. Attention given to the stability of hip members with good connection detailing. An enhanced understanding by the site manager of the fixing of components and their connections to the structure.



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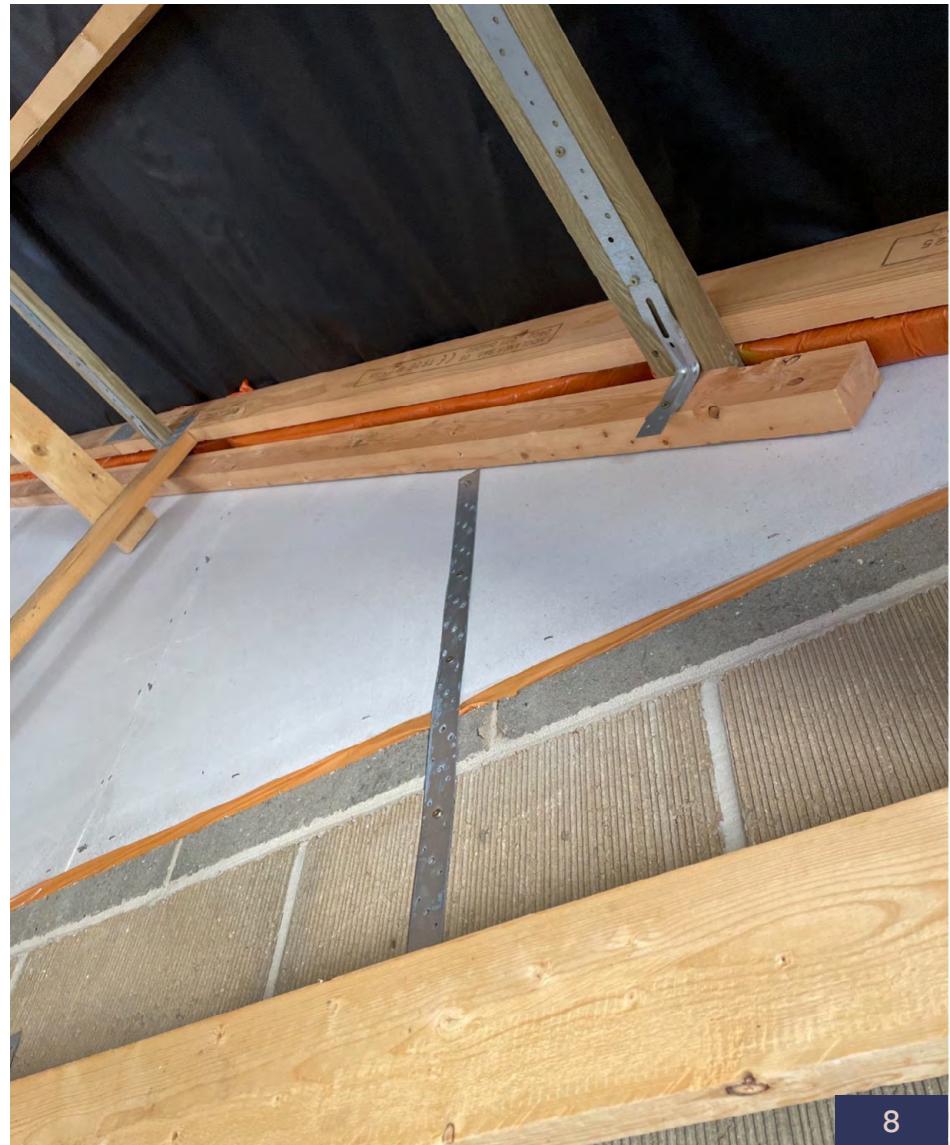


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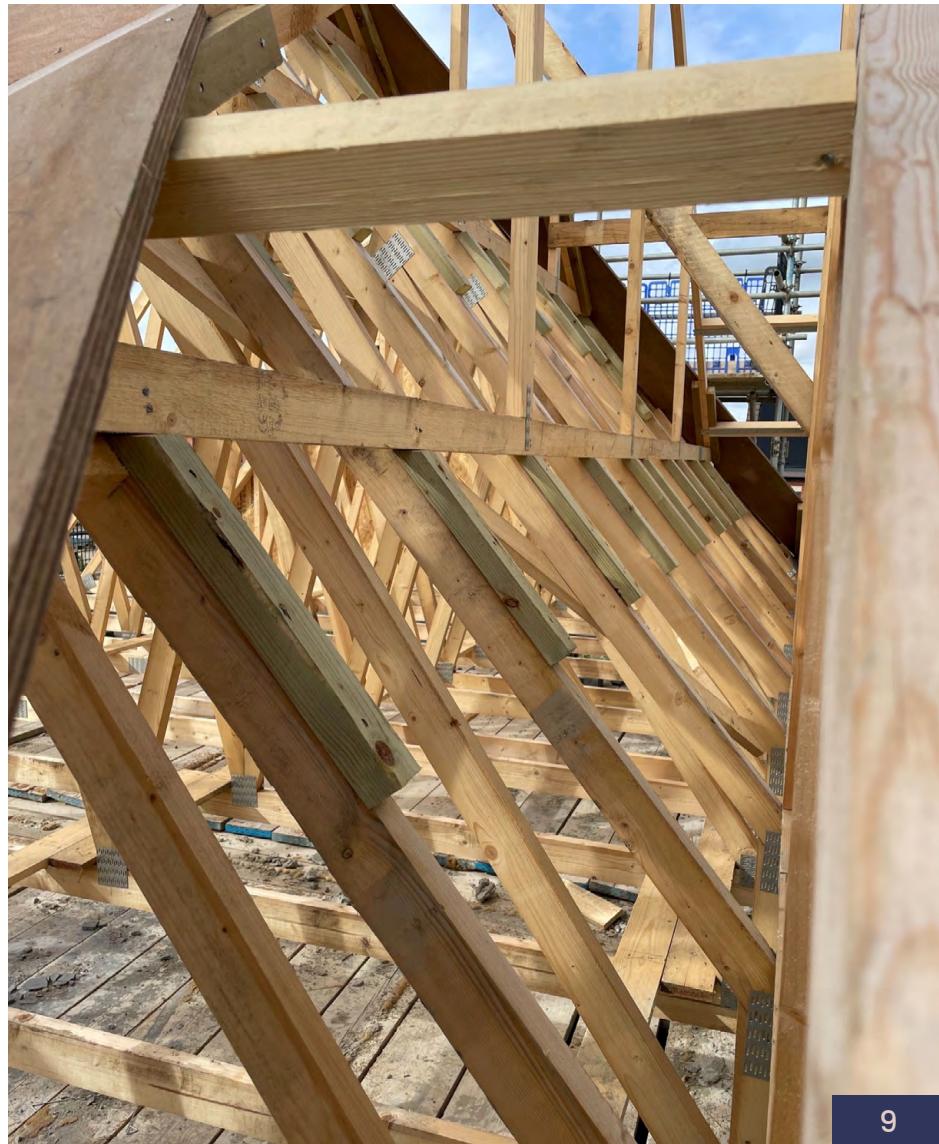
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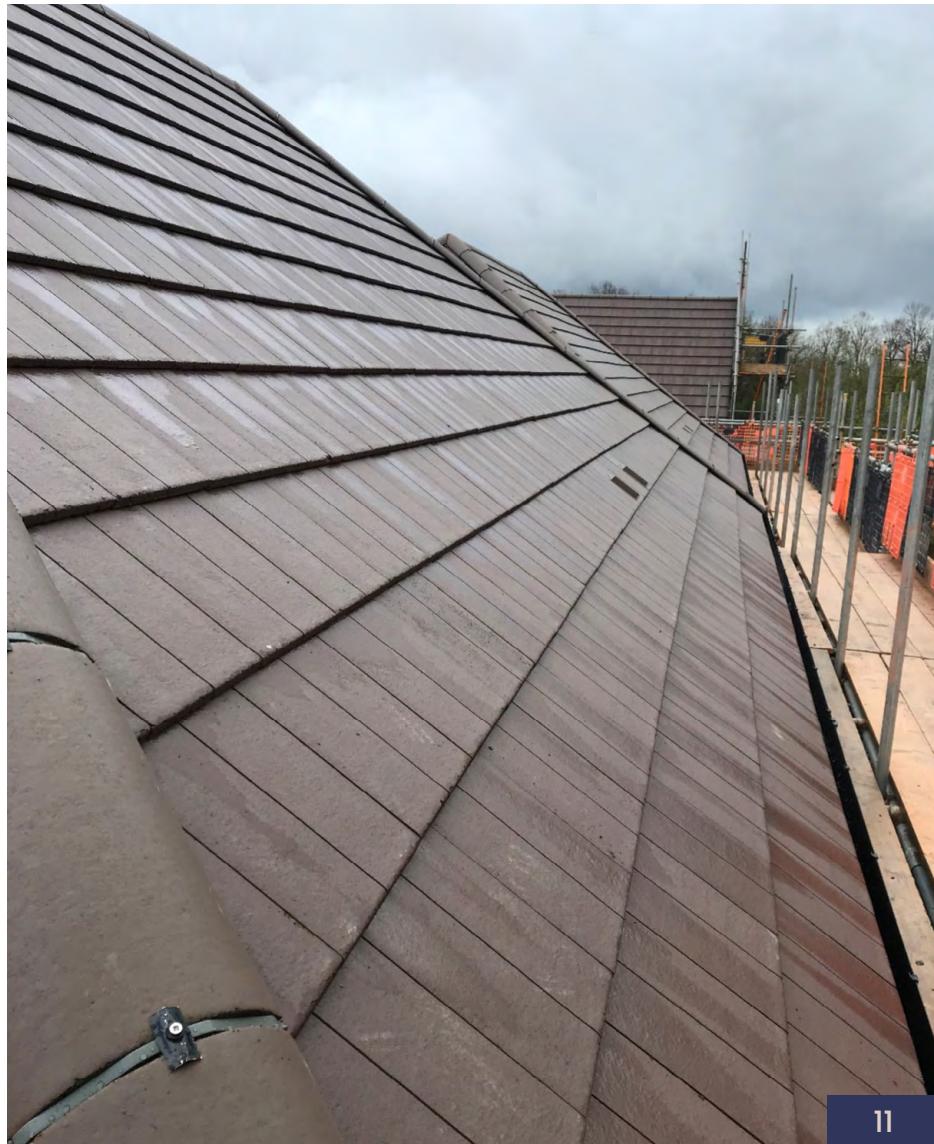


Section 4

Pitched roof coverings

All felts should have the correct laps and batten sizes, cut and fixed to comply with NHBC Standards. Attention to detail at hips, verges, ridges and valleys should be considered. The correct mix should be used in the mortar for bedding slate and tiles, and be of a uniform colour, where specified. Valley tiles to be cut correctly, and not whilst in situ, to reduce risk of damage to the underlying weatherproofing construction. Dry verge, ridge and valley systems to be correctly fixed.

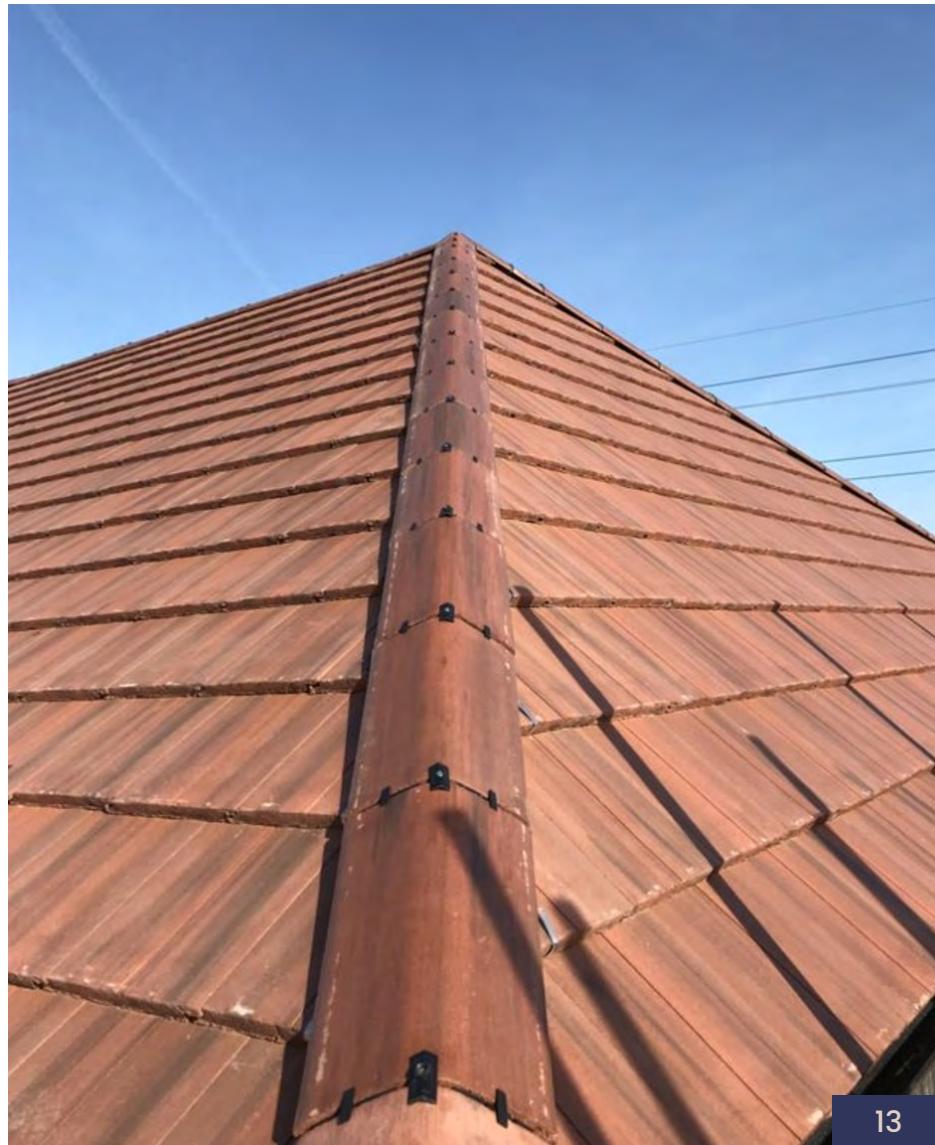
Pride – A good understanding of the manufacturers details and guidance alongside the quality of the detailing and fixing of coverings, use of the correct components, neatly installed where solar panels are being used. Quality of the setting out to ensure good alignment of tiles. Pleasantly straight valley and verge lines. Tight, neat-looking interfaces of materials and elements.



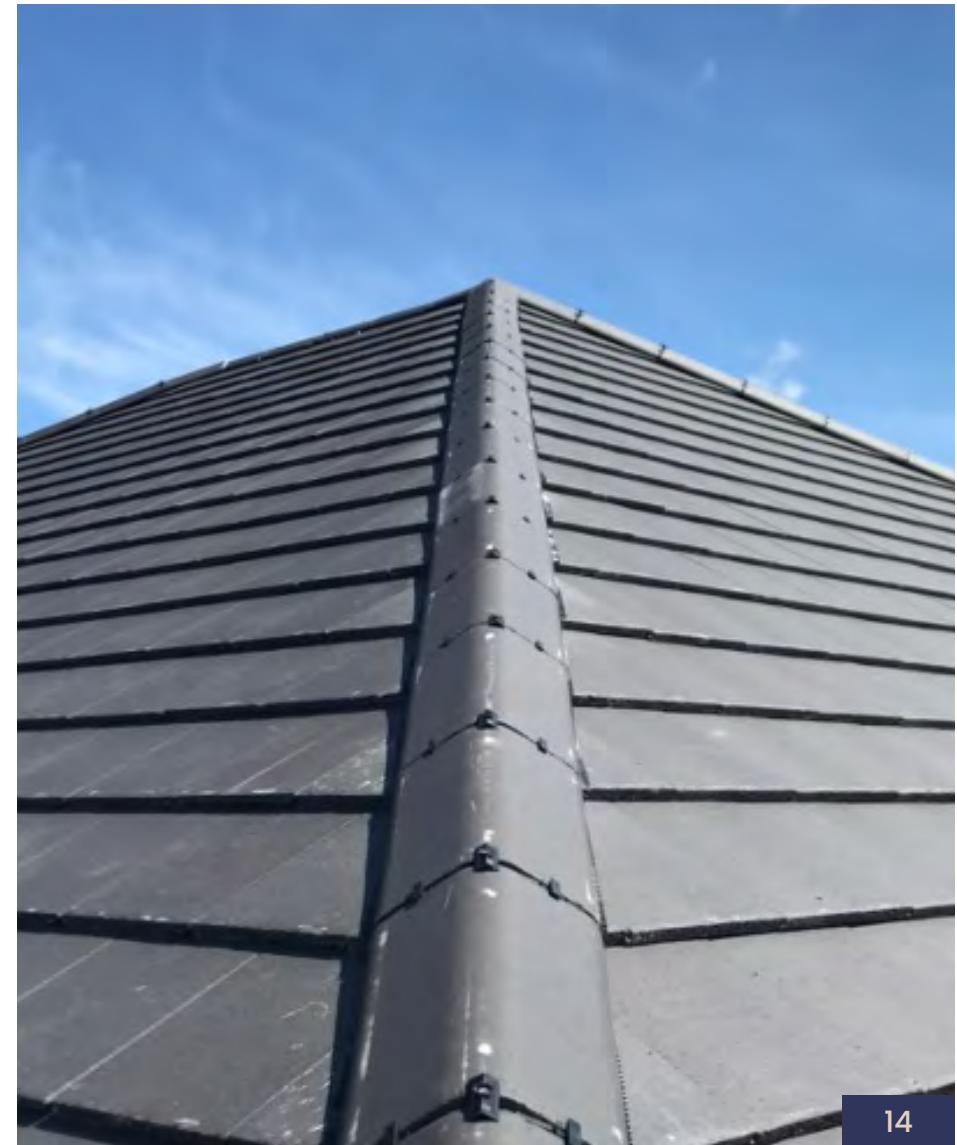
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TILE FIXING SPECIFICATION - DONARD

Further to your enquiry, we have listed below our fixing recommendations for roof tiling using Northstone Donard tiles. These are recommendations only and are based on the following information which you have provided:

Project Details

Altitude:	33.00m	Terrain:	Site is in country, near sea
Dist. from sea:	39.50km	Close to airport?:	No
Wind Velocity:	22.6	Heights Hr, He:	8.00m, 8.00m
Tile type:	Donard	Qp:	1022.910
Pitch:	40.0°	Roof Type:	Duo
Headlap:	75mm	Batten:	Battens (50mm x 25mm)
Max Rafter Length:	6.20m	Counter Batten:	None
Building length:	13.20m	Underlay:	Protect VP300 LR Vap
Building width:	10.20m	Underlay PU:	920.619

Please note it is your responsibility to ensure the above information is correct.

Recommended Fixing Specification

Perimeters:	Nailed Once And Clipped (50mm x 3.35mm Aluminium Nails)
Local areas:	Clipped
Local Areas - designated:	3 - courses in from angled details, verges, side abutments etc
General areas:	3 - courses in from flat details, eaves, ridges, top abutments etc Nailed Once (50mm x 3.35mm Aluminium Nails)

Local knowledge and experience must be considered and if local practice would be to use a more one course per tile, then local practice must take precedence. Where solar panels are to be fixed to the roof, care must be taken to ensure the panels are not fixed directly to the tiles. Our recommendations do not apply to complex buildings or roofs, or buildings near the coast. Ridge and hip tiles to be fitted with Northstone Dry Ridge and Hip System to BS8612. A copy of the specification is available on the Northstone website. The above recommendations are based on the information provided.

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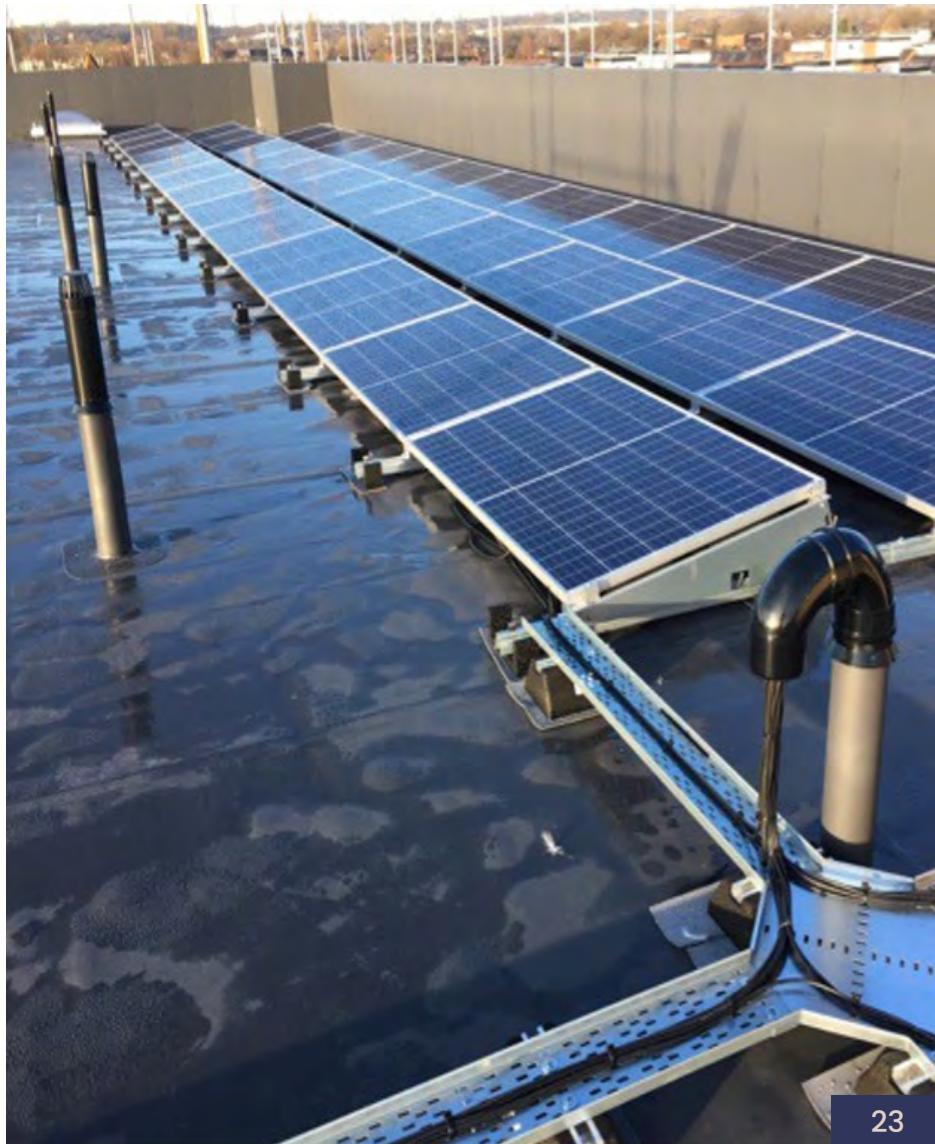
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Section 4

Flat roof coverings

Flat roof coverings are usually proprietary systems with a third-party certification. However, the fixing of any coverings is a highly important issue. The manufacturer's details and guidance must be strictly followed to prevent leaks or wind damage. Laps to parapets and service penetration points must be properly formed and sealed, all fixed in accordance with the manufacturer's instructions.

Pride – A good understanding by the site manager of any specialist weatherproofing system being used. Tight, neat-looking interfaces of materials and elements with no bumps or air bubbles showing.



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Pride in
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Ventilation, underfelt and insulation

Adequate and appropriate insulation is to be laid over the whole of the ceiling area without the ventilation being impaired. Check that the length of the eaves vent spacers should be appropriate for the thickness of the insulation. Rigid insulation laid to roof slopes must still maintain the ventilation air gap. No gaps in the roof insulation can be allowed. All separate plots, at or under roof level, are to be correctly compartmentalised with specified sound insulation. Again, check for gaps and other defects.

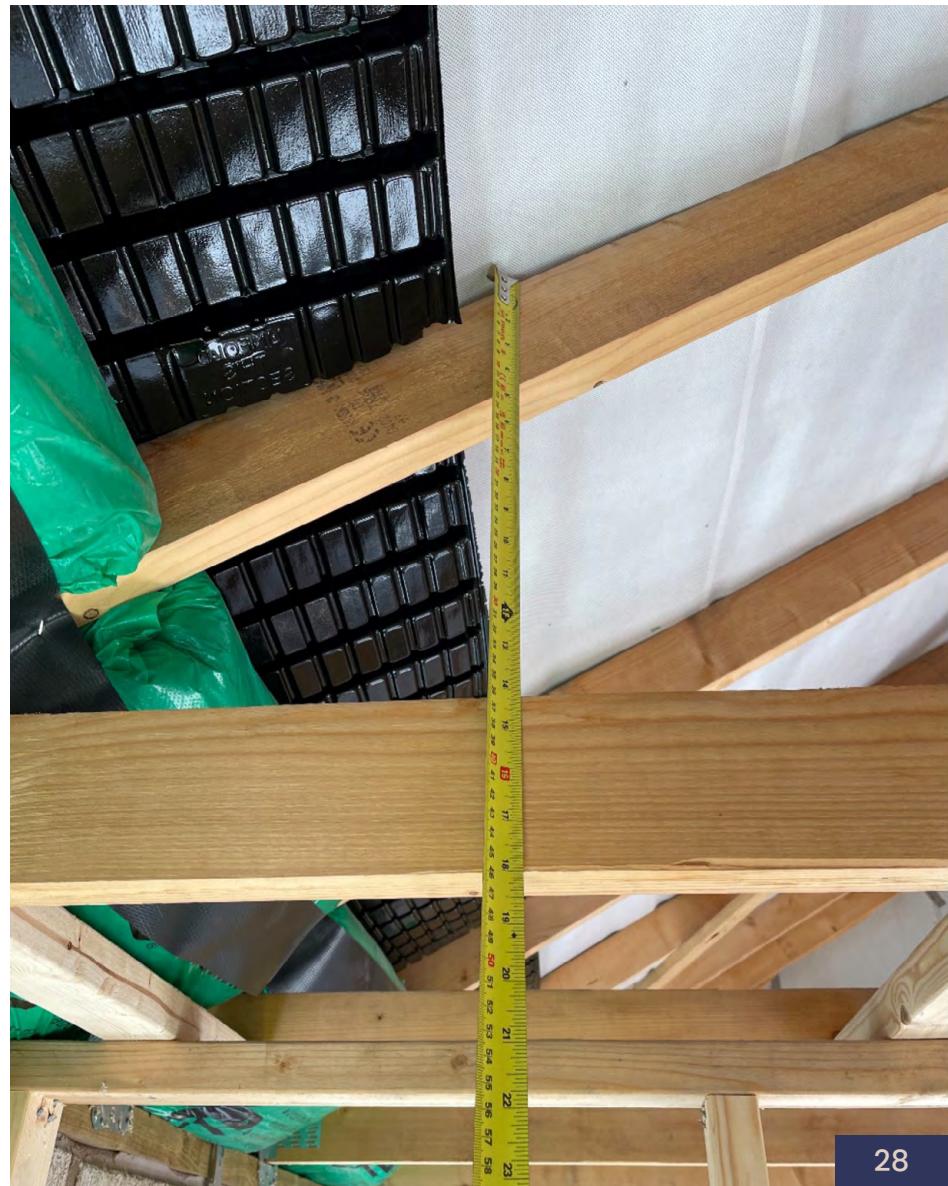
Pride – Quality of installation of components such as vents to correctly perform their function. Rigid insulation very neatly cut to aid accurate and gap-free installation. Taping of joints to ensure it is kept in place. Maintenance of the quality of the insulation during construction and prior to application of the covering.



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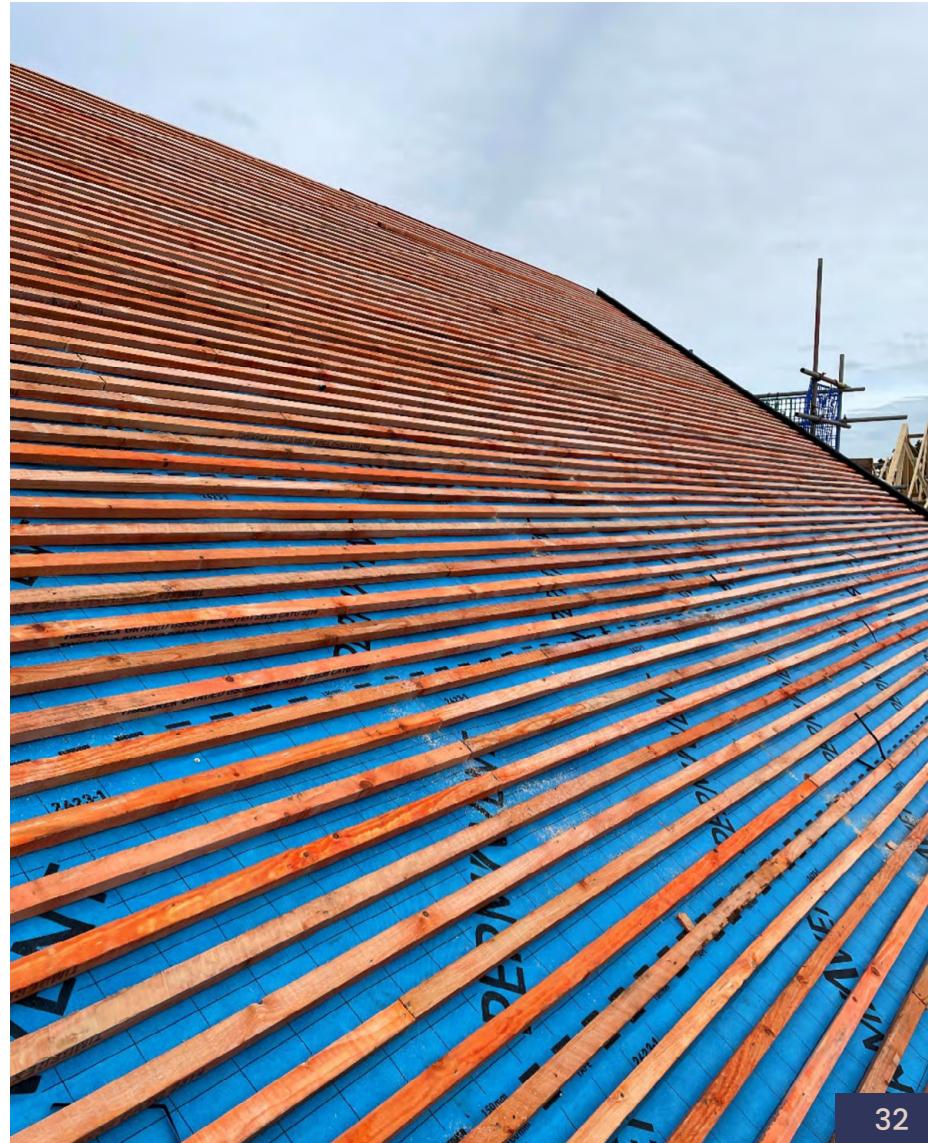
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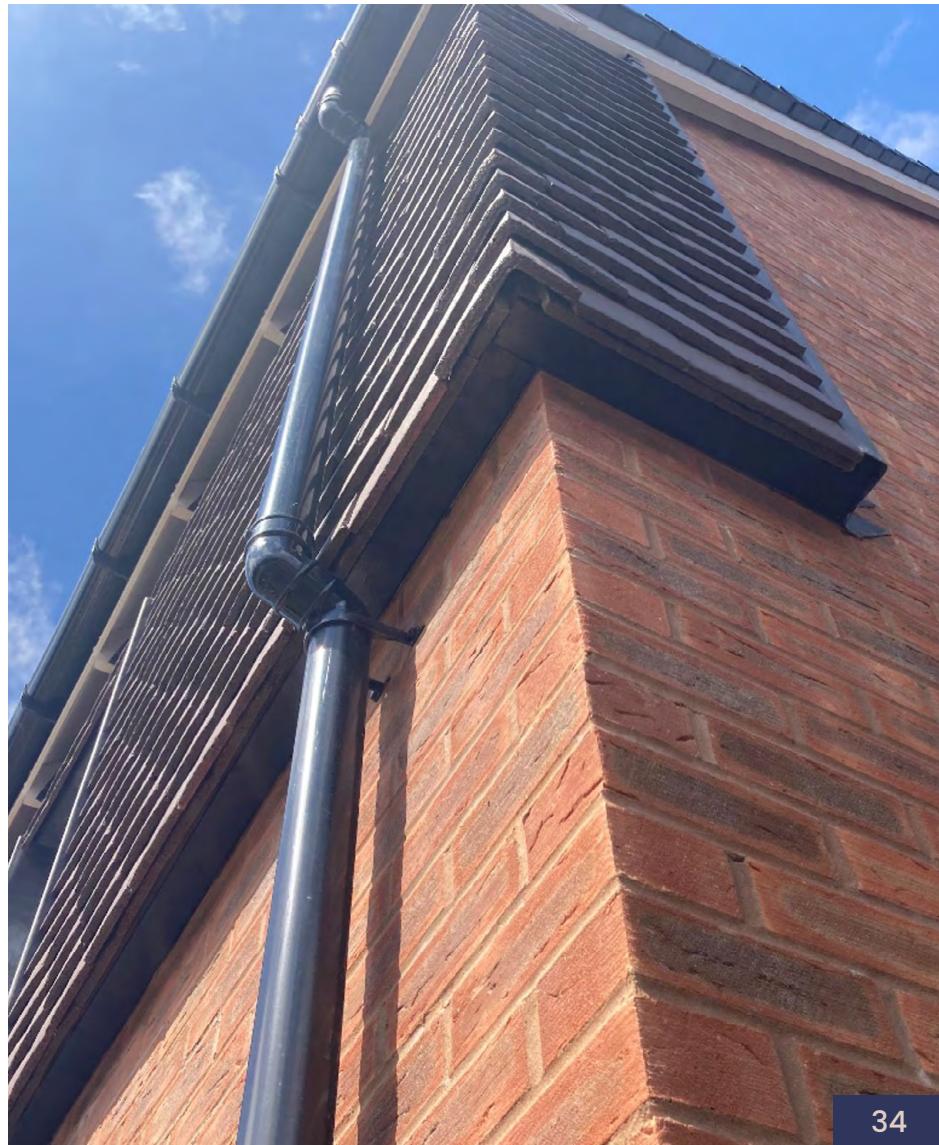
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Section 4

Flashing, gutters and downpipes

Fixings and supports for gutters and downpipes need to be functional and installed to manufacturer's requirements, as well as aesthetically acceptable. Flashings must be properly dressed and lapped with DPC trays. As well as being vital elements in the waterproofing of a structure, flashings can have also have a major impact on the visual appearance of the building. Cleanliness and dressing are important considerations.

Pride – Extra effort to achieve; perfect alignment of downpipes and swan necks, fixing of guttering and downpipes. Very neat dressing, jointing, clipping and detailing of leadwork, including how it is finished and jointed into masonry.



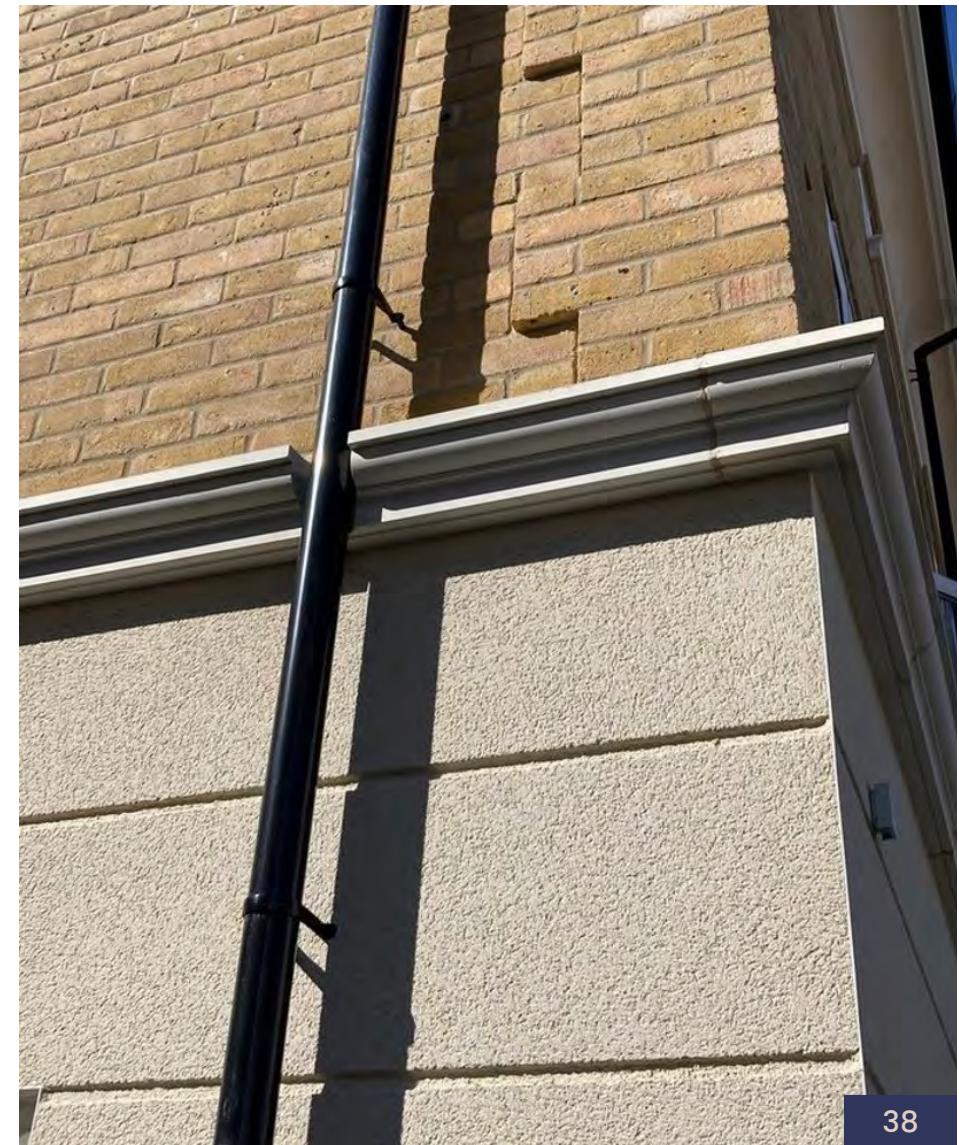
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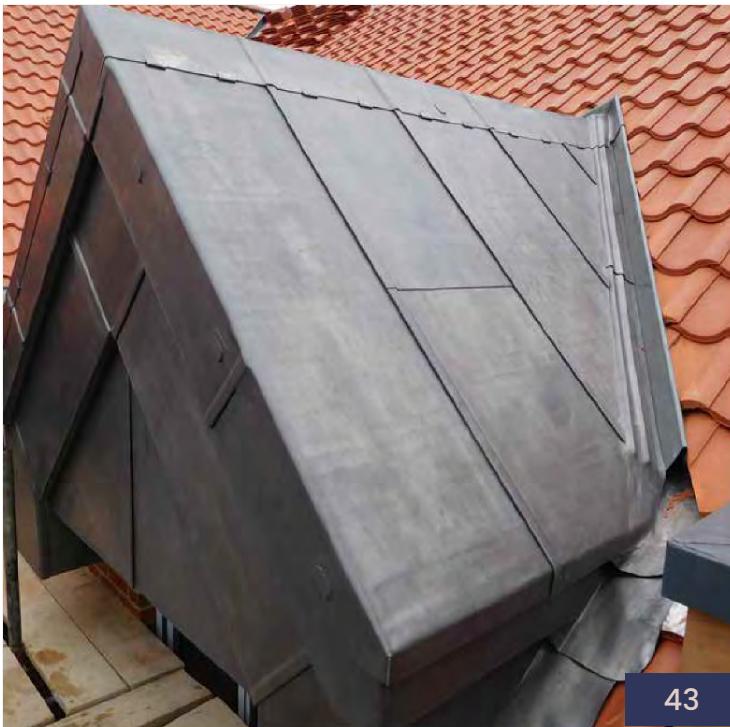
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Fire stopping

The correct installation of fire resisting materials at the junctions between a separating or compartment wall and a roof, at the junctions between cavities, above separating wall and within the boxed eaves at separating walls, are important to achieve their required performance standards. Care should be taken to ensure that products are installed accurately and precisely to meet their performance capabilities.

Pride – This important work should not be rushed, ensure a robust 'as built' detail that does the drawing details and installation guidance of the products justice. A carefully designed checking and signing-off system implemented on site will drive consistency and quality within this vitally important area of construction.







Good luck!

We hope you have found this best practice guide useful in gaining a better understanding of what the judges are looking for at each stage of construction.

Remember, the six characteristics the judges are looking for in a site manager are:

- consistency
- attention to detail
- technical expertise
- leadership
- interpretation
- health and safety.

We wish you all the very best in the Pride in the Job competition as you strive for your very first win or to repeat or even improve on your performance in previous years.