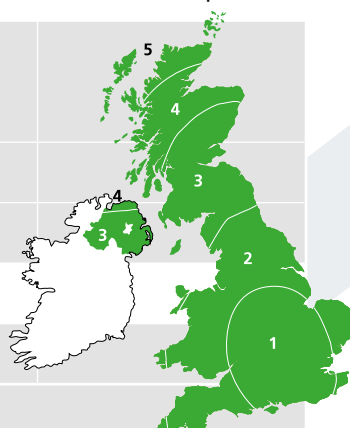


Frequently Asked Questions

Resistance to Wind Uplift

Product	Identification	Accessories	Manufacturer	Website
Roofshield®	LR		Don & Low Ltd	www.donlow.co.uk
Batter Gauge	Declared wind uplift resistance Pa (N/m ²)		Zone Suitability	Wind Zone Map
≤345mm	1252	None	1-3	
	2192	≥11mm* counter batten	1-5	
	2615	Tape	1-5	
≤250mm	2574	None	1-5	
Softwood sarking with slates**	2974	n/a	1-5	
In zones 1-3, no tape is required.				

* A 38mm tile batten may replace a 25mm tile batten, eliminating the 11mm counter batten requirement.

** The slates were placed with a headlap of 54mm, meeting the minimum in BS5534 regulations. The nail diameter of 2.65mm also adheres to the BS5534 minimum. This roof configuration tested represents the least wind uplift-resistant setup allowable by BS5534 standards for these slates.

Under the scope of changes to BS5534:2014, where can Roofshield be used?

Roofshield can be used in all zones 1 - 5. See the details in the table above.

How “Breathable” is Roofshield?

While “breathability” is commonly used, a more precise technical term is “vapour permeability.” Roofshield is air-permeable and vapour-permeable, which supports its ability to allow air movement. However, it’s important to note that not all materials termed “breathable” exhibit these characteristics. Regarding vapour permeability, Roofshield stands out with a vapour resistance of 0.065MNs/g (Sd-value 0.013m), making it one of the most vapour-permeable membranes available. It

also benefits from air permeability.

What’s the Significance of Air Permeability?

Roofshield boasts one of the lowest vapour resistances and is air permeable. Research in the industry has shown that the combination of air permeability and very low vapour resistance significantly inhibits condensation formation in pitched roofs. Under typical conditions, the risk of condensation occurring is virtually eliminated.

Studies carried out by the BRE and Glasgow Caledonian University have not only demonstrated that an air-permeable roofing underlay outperforms conventional airtight underlays but may also provide a higher air change rate compared to a roof ventilated according to BS5250 recommendations.

Does Roofshield Experience “Tenting”?

As anyone who’s spent a night in a budget tent knows, some vapour-permeable fabrics can lose their water resistance when something comes into contact with their undersides. Don & Low, located in Scotland, where underlays fully supported on timber sarking boards are the norm, has always been mindful of preventing this issue with Roofshield. While early versions of vapour-permeable underlays suffered from this problem, most modern roof underlays are immune to this phenomenon.

So, Is Ventilation Necessary?

Over Roofshield’s 25-year-plus lifespan, extensive testing has demonstrated that no ventilation is required underneath the underlay in both warm and cold roof applications. Roofshield has been certified by the BBA and NSAI to this effect. It has successfully been used in various roof configurations, such as du-pitched, mono-pitched, hipped, mansard, gable-end, valleys, room-in-the-roof, dormers, and timber sarking. Even in more complex roof designs, Roofshield provides a more robust solution than intricate layouts of ventilation openings.

The only situation where roof space ventilation is still required is in a cold roof with plywood or OSB sarking. If in doubt, our team of technical experts can assist specifiers in selecting the most suitable solution for their specific project.

What About High-Level Vents?

While non-ventilated roofs have been specified successfully for many years, recent recommendations, such as those in BS5250, NHBC technical standards, and NFRC Technical Bulletin 6, suggest using ridge-only ventilation equivalent to 5mm per meter when specifying

vapour-permeable underlays. However, this recommendation comes with an exception: when the underlay is vapour and air permeable. Since Roofshield meets this requirement, additional high-level ventilation is not needed when using Roofshield.

Does Roofshield Produce Wind-Induced “Chatter” Noises?

Wind blowing into the eaves of a roof can sometimes create a “chatter” noise with certain underlay materials. Roofshield, however, remains silent in such situations. Because Roofshield doesn’t experience this issue, you don’t need to pull the membrane taut or follow special fixing instructions, as with some underlays. In some situations, counter battens can be added to increase air movement, primarily when used with close-fitting slates or tiles or to provide drainage below tile battens in a fully supported application. Otherwise, you can drape the Roofshield between the rafters as usual.

What Is the “Drying Out Period”?

The “drying out period” refers to the immediate period after a building’s completion when there are higher moisture levels within the structure. This moisture includes damp timber, residual moisture from wet trades like concrete and plaster, and any moisture that entered the building before it became wind and watertight. Although this moisture will eventually evaporate, it can lead to condensation as it does. This is typically most noticeable during the first winter when the building is heated. Roofshield roofs are significantly less susceptible to this effect.

Is Roofshield Cost-Effective?

Regarding the initial cost per roll, the Roofshield may appear more expensive than traditional non-breathable felt. However, when you consider the expenses related to ventilation equipment, choosing Roofshield can lead to cost savings. Independent assessments conducted by Hardies Property and Construction Consultants on installed costs have revealed that Roofshield can provide savings ranging from 4% to 6% compared to impermeable felt with full ventilation or a lower-specification VPU with high-level ventilation only.

How Does Roofshield Handle Severe Weather Conditions?

While Roofshield offers water resistance, it's important to note that, according to the BBA's Site Practice Bulletin Number 2, "An underlay is not a waterproof barrier, and if used as a temporary waterproof covering, some rain penetration may occur. In certain conditions, especially during persistent heavy rainfall followed by severe freeze/thaw cycles, an underlay should not be exposed for more than a few days." If such conditions are anticipated, it's recommended to use a tarpaulin covering temporarily.

Where Can Roofshield Be Used According to BS5534:2014 + A2:2018?

Roofshield is suitable for use in all zones 1 - 5.

What Accessories Are Needed for Compliance?

Notably, Roofshield Does Not Require Taping for Compliance. No additional considerations are necessary when using Roofshield in Zones 1-3; installation proceeds as usual. In Zone 4 or 5, with sarking board use and slates fixed directly through, installation follows the stand-

ard procedure. However, if the building has an open rafter construction in Zone 4 or 5, it's necessary to install a minimum 11mm counter batten over the Roofshield.

How Should Underlay Overlaps Be Handled—Battened, Taped, or Increased?

Various manufacturers have differing viewpoints and arguments regarding correctly handling membrane overlaps. According to BS5534:2014, unless counter battens are used, underlay laps should be covered by a batten. When necessary, the lap of the underlay should be adjusted to align with the nearest slating or tiling batten. Laps can also be secured using proprietary methods following manufacturers' instructions. It has been considered good practice to arrange the membrane so the lap falls below a tile batten. If this is not feasible due to the tile gauge, then either the lap should be increased to ensure it is beneath a batten, or an additional batten should be used within the tile batten gauge spacing.

Adding this extra batten, often referred to as a "fly batten," has generally been regarded by most roofers as a potential trip hazard. Consequently, we have consistently recommended against this approach and, instead, have advocated for increasing the lap. This recommendation is firmly rooted in fundamental health and safety considerations.

Defining "Fly Batten" - Variations in Terminology among Competitors

The term "fly batten" is subject to regional slang variations, and its meaning may differ depending on the individual. Several possible interpretations include "counter batten," "batten for membrane overlap," or a "temporary batten," typically utilized when there's a need to rapidly install underlay for protecting the building's interior (sometimes called "strap

battening"). This practice can also prove beneficial when a roof is slated to have counter battens on and beneath the underlay, as it allows for full-length counter battens after applying all the underlay rather than in small sections.

Given the potential for other terms describing this practice, using "fly batten" can create confusion in the market. In contrast, our approach utilizing an 11mm counter batten rather than an extra batten at the overlap offers clarity and transparency.

Do the Wind Zones Address All Scenarios?

No, the fine print in the table specifies that the wind zones are only applicable in cases where certain conditions are met. These conditions include having a well-sealed ceiling, a ridge height not exceeding 15m, a roof pitch falling within 12.5 to 70 degrees, and no significant topographical factors. For situations falling outside of these parameters, consider a stronger membrane or seek professional advice.

Does This Mean You Need to Install a VCL for a Well-Sealed Ceiling?

No, the Code of Practice for Design for the Airtightness of Ceilings in Pitched Roofs (BS 9250) provides guidelines on achieving a well-sealed ceiling. Importantly, it does not mandate using a Vapor Control Layer (VCL). While a VCL is shown as an example and is sometimes used (as in the case of using plasterboard as an airtight layer), BS 9250 focuses more on the importance of detailing and quality. The following definitions are extracted from the relevant British Standards:

- BS 5250 defines a well-sealed ceiling as: "A ceiling that incorporates seals preventing the transfer of warm, moist air into the loft or roof space, following

the recommendations of BS 9250."

- BS 9250 provides this definition: "A well-sealed ceiling is a ceiling that meets the following criteria:
 - a. The design avoids constructional gaps, especially at the wall/ceiling junction and holes in the ceiling.
 - b. Access door or hatch should be kept from rooms where large amounts of moisture are produced, such as kitchens or bathrooms.
 - c. The air leakage rate through an access hatch, including its frame, should be less than one m³/h at a pressure difference of 2 Pa when tested to BS EN 13141-1:2004 4.3.
 - d. Penetrations, such as those for services and roof lights, should be permanently sealed with suitable proprietary products.
 - e. The ceiling should be sealed to the external walls to minimize any leakage through cracks.
 - f. The total leakage through all recessed light fittings should not exceed 0.06 m³/h•m² of a ceiling at a 2 Pa pressure difference across the ceiling.
 - g. The head of any cavity in any wall or partition should be sealed to prevent the transfer of warm, moist air into the loft."

Does the BBA Certificate Still Indicate That No VCL Is Required?

Yes, and the existing benefits of Roofshield remain unchanged.