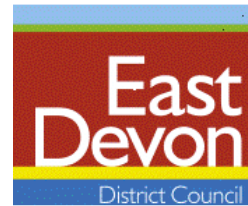


## BUILDING CONTROL

### GUIDANCE NOTE 2



## GUIDANCE NOTE FOR CONSTRUCTION PROFESSIONALS ON THE USE OF VAPOUR PERMEABLE UNDERLAYS IN UNVENTILATED COLD PITCHED ROOF SYSTEMS FOR DWELLINGS

### 1.0 Commentary

- 1.1 A relatively recent introduction to the technology of pitched roof construction has been the development of vapour permeable underlays for use in place of the traditional BS747 type IF bituminous felts. A vapour permeable underlay is defined in BS5250:2002 as an underlay with a vapour resistance of 0.25MNs/g or less.
- 1.2 These high performance materials can provide a barrier against wind- driven rain and snow whilst allowing water vapour in the loft space to pass through to the air space beneath the external tiled finish where it can disperse to atmosphere.
- 1.3 As with all building components, Building Regulations require that such materials be fit for their purpose. In order to assess their suitability it is usual to ensure that the manufacturer has obtained proper accreditation from an appropriate independent body such as the British Board of Agreement (BBA) or BRE Certification (formerly WIMLAS).
- 1.4 In some cases the use of permeable underlays can remove the need for the provision of cross-ventilation to the loft space (the void between insulation and underlay) but only if independent certification is available for such use and the conditions and limitations of use in the certificate are met .
- 1.5 The purpose of this guidance note is to bring the attention of construction professionals to the necessary areas for consideration in designing such a system in compliance with the Building Regulations.

### 2.0 Products

- 2.1 The main consideration for accepting an unvented cold roof is to ensure that the underlay has been tested and approved by an appropriate independent body. At the date of this document, products that have been approved for this use are listed in Appendix A together with their accreditation details. It is important that the current status of the relevant certification is verified at the time to ensure that it is still valid and to check whether new certificates have been issued.

### 3.0 Design Considerations

- 3.1 The dwelling areas below the roof space should be provided with the appropriate rapid, background and mechanical ventilation as required by Building Regulations Approved Document F1. This may not be so in the case of a new roof to an existing property or a loft conversion.

- 3.2 Water storage vessels in the loft area should be fitted with a tight fitting cover and all pipework lagged.
- 3.3 In order to minimise the passage of water vapour into the roof, all ceiling penetrations must be sealed and loft hatches made convection tight by using compressible draft seals. The installation of unsealed ceiling downlighters would not be acceptable.
- 3.4 It is advisable that a vapour control layer is incorporated into the cold pitched roof system and sited to the warm side of the insulation layer.
- 3.5 Counter battens should be used where the underlay is laid directly over the insulation material and is fully supported by it. This allows the drainage of any moisture penetrating the tile finish and prevents the build up of dust or debris behind the tile battens.
- 3.6 Tiling battens should have a minimum depth of 25mm in order to form an adequate space for the dispersion of water vapour.
- 3.8 Where the roof finish consists of a tightly fitting covering, ventilation provision is required between the underlay and the finish. Such finishes include double lap fibre cement slates, profiled metal sheet, bituminous felt or plastics sheeting. Traditional tiling in concrete, clay and slate would not normally require such ventilation
- 3.9 All independent certificates recommend the installation of a u.v. durable eaves carrier discharging into the gutter. This is because most materials are not resistant to u.v. degradation in the long term. They may also serve the function of a support fillet to prevent ponding of water behind the fascia board.
- 3.10 Unventilated loft spaces are acceptable with planked type timber sarking (100mm wide with 2mm gaps) but permeable underlays are not approved for unvented roofs incorporating OSB or plywood panels typically 1220 x 2440mm in size

#### 4.0 **Further Research**

- 4.1 B.R.E. Scotland have concluded their research into improving thermal and moisture performance of pitched roofs which included research into the use of vapour permeable underlays. Their findings have been used to revise BS5250:2002. Building Regulations Approved Document F.2 is superseded by a new section of Approved Document C (in force from Dec 2004). Whilst the requirements are essentially the same, the technical solutions are replaced with advice to follow BS5250:2002 guidance.

#### 5.0 **Appendix**

##### Appendix A

##### **Products tested and approved for use in unvented cold roof systems**

Product Name	Manufacturer	Cert.No	Vapour Resistance
<b>Klober Permo Forte</b>	Klober Ltd. 01509 500660	Agreement 00/3749 (second issue)	0.20MNs/g

[www.klober.co.uk](http://www.klober.co.uk)

<b>Tyvek Supro</b>	Du Pont engineering Products 01275 879770	Agreement 04/4101 (second issue)	0.22MN/g
	<a href="http://www.tyvekhome.com">www.tyvekhome.com</a>		
<b>Daltex Roofshield</b>	Don and Low Non Wovens Ltd 01307 452600	Agreement 99/3648 (second issue)	0.09MN/g
	<a href="http://www.donlow.co.uk">www.donlow.co.uk</a>		
<b>Monarperm 700</b>	Icopal Ltd.  0161 865 4444	Agreement 03/4062	0.22MN/g
<b>Vap R-Free</b>	Mercury Building Products Ltd. 01246 292816	Agreement 04/4078	0.23MN/g
<b>Global Breather Roof Tile Underlay</b>	EBC (UK) Ltd  01909 479276	Agreement 01/3842	
	<a href="http://www.e-b-c-uk.com">www.e-b-c-uk.com</a>		
<b>Breatheline V.P. Underlay</b>	Knauf Insulations Ltd  01744 240222	Agreement 03/4017	0.22MN/g
<b>Protect VP400</b>	Glidevale Limited  0161 962 7113	BRE 080/01	0.18MN/g
	<a href="http://www.glidevale.com">www.glidevale.com</a>		
<b>Rubershield PRO</b>	Ruberoid Ltd  01707 822222	BRE 092/02	0.19MN/g
	<a href="http://www.ruberoid.co.uk">www.ruberoid.co.uk</a>		

The above table represents information available at the time of collation. Last Revised August 2004

