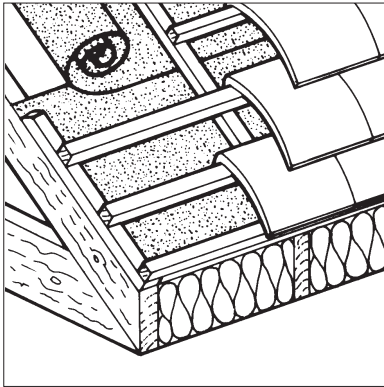


Product



- THIS DETAIL SHEET RELATES TO WEB UV25 BREATHER UNDERLAY IN COLD NON-VENTILATED PITCHED ROOF SYSTEMS.

This Detail Sheet must be read in conjunction with the Front Sheets, which give the products' position regarding the Building Regulations and general information relating to the product, and the Conditions of Certification.

Technical Specification

1 Description

1.1 Web UV25 Roof Tile Underlay is manufactured by thermally bonding two spunbonded polypropylene fabric layers (each 70 gm^{-2}) with a microporous film, between the two layers, to form a breathable waterproof membrane. For recycling purposes, the polymer content of the membrane is 100% polypropylene. The membrane is produced with a black upper surface and a blue lower surface. Other colours are available to order.

1.2 The product has the nominal characteristics of:

roll width (m) ⁽¹⁾	1.5
roll length (m) ⁽¹⁾	50
weight per unit area (kgm^{-2})	165

(1) Other sizes available to order.

1.3 Quality control checks are carried out on the finished product. Quality control checks include:

- weight
- tensile strength and elongation
- nail tear strength
- hydrostatic head.

2 Delivery and site handling

2.1 Rolls are delivered to site individually wrapped in polyethylene film. Labels bearing the Certificate holder's name, product name, product code, dimensions and the BBA identification mark incorporating the number of this Certificate are attached to each roll.

2.2 Rolls should be stored flat on a clean, level surface and kept under cover away from sunlight.

Design Data

3 Strength

Web UV25 Breather Underlay will resist the loads associated with installation.

4 Wind loading

4.1 Project design wind speeds should be determined and wind uplift calculated, in accordance with BS 6399-2 : 1997.

4.2 Wind loading on the underlay should be calculated in accordance with BS 5534 : 2003, Section 5.5.2.7 (see the *Tests* section of this Detail Sheet for acceptable wind loads with specific batten spacings for the draped product using a 25 mm deep tiling batten).

5 Risk of condensation

5.1 Typical values for water vapour resistance are given in Table 1.



Table 1 Water vapour resistance

Material	Water vapour resistance (MNsg^{-1})
Web UV25	0.25 (maximum)
Traditional felt underlay	570 (maximum)
Polyethylene sheet (0.15 mm)	450

5.2 The complete roof construction, ceiling boards to roof tiles, must be considered as a total system with regard to condensation risk. It is important that

the products are laid in accordance with the Certificate holder's instructions and this Certificate to prevent excessive condensation as defined in the national Building Regulations and Standards thus:

England and Wales

Approved Document C

Scotland

Technical Standards, Part G of the *Provisions deemed to satisfy the Standards*

Northern Ireland

Technical Booklet C.

5.3 All penetrations into and out of the roof space must be properly sealed in accordance with the Certificate holder's instructions. Vent stacks, boiler flues, for example, passing through the roof space must additionally be sealed along their length.

5.4 Subsequent penetrations into the roof space must be properly sealed to ensure the integrity of the non-ventilated, cold pitched roof system is maintained. This can be achieved by using a butyl adhesive tape.

5.5 It is essential to limit the rate of water vapour transfer into the loft space from the dwelling below. Appropriate measures include:

- the dwelling below the roof must be ventilated in accordance with national Building Regulations and Standards for the dispersal and rapid dilution of water vapour
- for rooms that may experience high humidity, such as kitchens, utility rooms and bathrooms — the ventilation rates should be in accordance with the guidance documents supporting current national Building Regulations and Standards
- all water tanks in the loft space must be covered and all pipework lagged
- ceiling penetrations must be sealed and loft hatches made convection tight by using a compressible draught seal.

5.6 For additional protection, the use of a vapour control layer/vapour check plasterboard can be considered.

Technical Investigations

The following is a summary of the technical investigations carried out on Web UV25 Breather Underlay in Cold Non-Ventilated Pitched Roof Systems.

6 Tests

6.1 Samples of the underlay were obtained from the company for testing. The result of the tests carried out by, or on behalf of, the BBA, which show typical results for the material, are summarised in Tables 2 to 4.

Table 2 Physical properties

Test (units)	Method ⁽¹⁾	Mean result
Mullen burst strength (kNm ⁻²)	BS 3137	780
Water vapour permeability (gm ⁻² day ⁻¹)	BS 3177 (25°C/75% RH)	975
Water vapour resistance (MNs ^g ⁻¹)	BS 3177 (25°C/75% RH)	0.21

(1) The test documents are detailed in the *Bibliography*.

Table 3 Physical properties — directional

Test (units)	Method ⁽¹⁾	Mean result	
		Long ⁽²⁾	Trans ⁽³⁾
Tensile strength (Nmm ⁻²)	BS 2782-3.320A to 320F (500 mm min ⁻¹)		
unaged		13.9	8.6
heat aged ⁽⁴⁾		12.8	7.3
wet strength ⁽⁵⁾		14.4	8.9
water soak ⁽⁶⁾		13.1	7.5
UV aged ⁽⁷⁾		8.0	5.2
Elongation (%)		BS 2782-3.320A to 320F	
unaged	52		63
heat aged ⁽⁴⁾	43		49
wet strength ⁽⁵⁾	51		65
water soak ⁽⁶⁾	50		59
UV aged ⁽⁷⁾	37	31	
Tear strength (N)	MOAT 27 : 5.4.1		
unaged		193	151
heat aged ⁽⁴⁾		191	144
water soak ⁽⁵⁾	193	149	

(1) The test documents are detailed in the *Bibliography*.

(2) Longitudinal direction.

(3) Transverse direction.

(4) Heat aged for 56 days at 70°C.

(5) Water immersion for 24 hours at 23°C and tested wet.

(6) Water immersion for 56 days at 23°C and tested dry.

(7) Ultraviolet aged for 500 light hours using UVB lamps with a cycle of 4 hours condensation at 50°C and 4 hours light at 50°C.

Table 4 Service performance

Test (units)	Method ⁽¹⁾	Mean result
Hydrostatic pressure (mm)	BS EN 20811	
minimum		7160
mean		8780
Wind loading (kPa) ⁽²⁾	MOAT 69 : 4.2.1	
batten spacing 350 mm		1.0 ⁽³⁾
batten spacing 330 mm		1.0 ⁽³⁾
batten spacing 300 mm		1.5 ⁽³⁾
batten spacing 250 mm		2.5 ⁽³⁾

(1) The test document is detailed in the *Bibliography*.

(2) Batten depth 25 mm.

(3) Maximum pressure achieved.

6.2 Tested on the following properties was also carried out:

- thickness
- width
- weight per unit area.

7 Investigations

7.1 The quality control procedures for the final product were assessed.

7.2 Calculations on the condensation risk in cold non-ventilated roof constructions.

7.3 The following tests were carried out on a product of similar composition, but lower specification:

- resistance to water spray
- low temperature flexibility
- coefficient of dynamic friction.

Bibliography

BS 2782-3.320A to 320F : 1976 *Methods of testing plastics — Mechanical properties — Tensile strength, elongation and elastic modulus*

BS 3137 : 1972 *Methods for determining the bursting strength of paper and board*

BS 3177 : 1959 *Method for determining the permeability to water vapour of flexible sheet materials used for packaging*

BS 5534 : 2003 *Code of practice for slating and tiling (including shingles)*

BS 6399-2 : 1997 *Loading for buildings — Code of practice for wind loads*

BS EN 20811 : 1992 *Textiles — Determination of resistance to water penetration — Hydrostatic pressure test*

MOAT No 27 : 1983 *General Directive for the Assessment of Roof Waterproofing Systems*

MOAT No 69 : 2004 *UEAtc Technical Report for the Assessment of Discontinuous Roofing Underlay Systems*



On behalf of the British Board of Agrément

Date of issue: 8th April 2005

A handwritten signature in black ink, appearing to read 'P. C. Newson', is written over a light grey background.

Chief Executive

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