

# POWERLON®

Intelligent Building Membranes



Product Information

[www.powerlon.com](http://www.powerlon.com)

## ULTRAPERM BREATHABLE MEMBRANES

**Universal breathable underlay for all pitched roof designs and wall applications.  
Fully compliant to BS 5534:2014 + A1:2015**

Powerlon UltraPerm is a range of high performance breathable underlays for all pitched roof designs and wall applications (timber frame). It is tough, durable and tear resistant with exceptional water vapour permeability and hydrophobic (water repellent) characteristics.

The BBA certified Powerlon UltraPerm range is fully tested to the latest BS 5534:2014 + A1:2015 zones 1-5.

UltraPerm is a non-woven composite membrane and is available with and without integrated self-adhesive strips. Pre-printed marking lines for both roof pitch and overlaps for supported and unsupported roofs make installation quicker and easier. Complementing the membranes is the Powerbond range of accessories which includes penetration and jointing tapes.

Each roll is supplied with detailed installation instructions and a colour-coded geographical suitability guide per wind zone and membrane grade.



Powerlon UltraPerm is BBA Certified



Powerlon UltraPerm is also certified for walls



Fully compliant membranes suitable for all UK zones



Powerlon UltraPerm for all roof types

Powerlon® is a Registered Trade Name of Industrial Textiles & Plastics Ltd. E&OE.

© Industrial Textiles & Plastics Ltd



**Industrial Textiles & Plastics Ltd**  
Stillington Road  
Easingwold  
York YO61 3FA  
United Kingdom

Tel: +44 (0)1347 825200  
Fax: +44 (0)1347 825222  
Email: [powerlon@itpltd.com](mailto:powerlon@itpltd.com)  
Website: [www.powerlon.com](http://www.powerlon.com)



Certificate Number 2318



## BUILDING REGULATIONS BS 5534:2014 + A1:2015

### Revised code of practice for slating & tiling

On 31 August 2014, the British Standard for tiling and roofing (BS 5534) was updated. The new standard became mandatory at the end of February 2015.

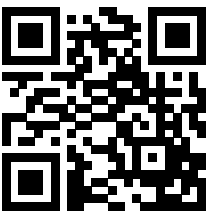
#### THE CHANGES TO THE BRITISH STANDARD RELATE TO:

- Application of a non-supported roofs.
- Scottish sarking / timber plank type roofs are also subject to the new standard as square edged butt-jointed planks are not considered to be airtight and are therefore to be treated as unsupported.
- Both cold and warm roofs.
- Securing the membrane to prevent 'ballooning' as this would put pressure on the tiles or slates and can cause dislodgement.
- New minimum performance requirements for wind uplift resistance of breather membranes.
- New test method for calculating the wind pressure and wind uplift of unsupported underlays (i.e. draped over the rafters – most common method of cold roof construction in England).
- Geographical wind zone map with areas 1 to 5.
- Different widths of batten gauges (i.e. centre to centre) up to 345 mm.
- Fully supported roofs (on e.g. plywood, OSB board and insulation) are excluded from the amendments of BS 5534:2014 + A1:2015.

Powerlon UltraPerm breather membranes have undergone further testing from the BBA/BRE and the results have shown that all 4 grades of the range cover Zones 1-5. (See colour coding system).

#### BS5534 APP

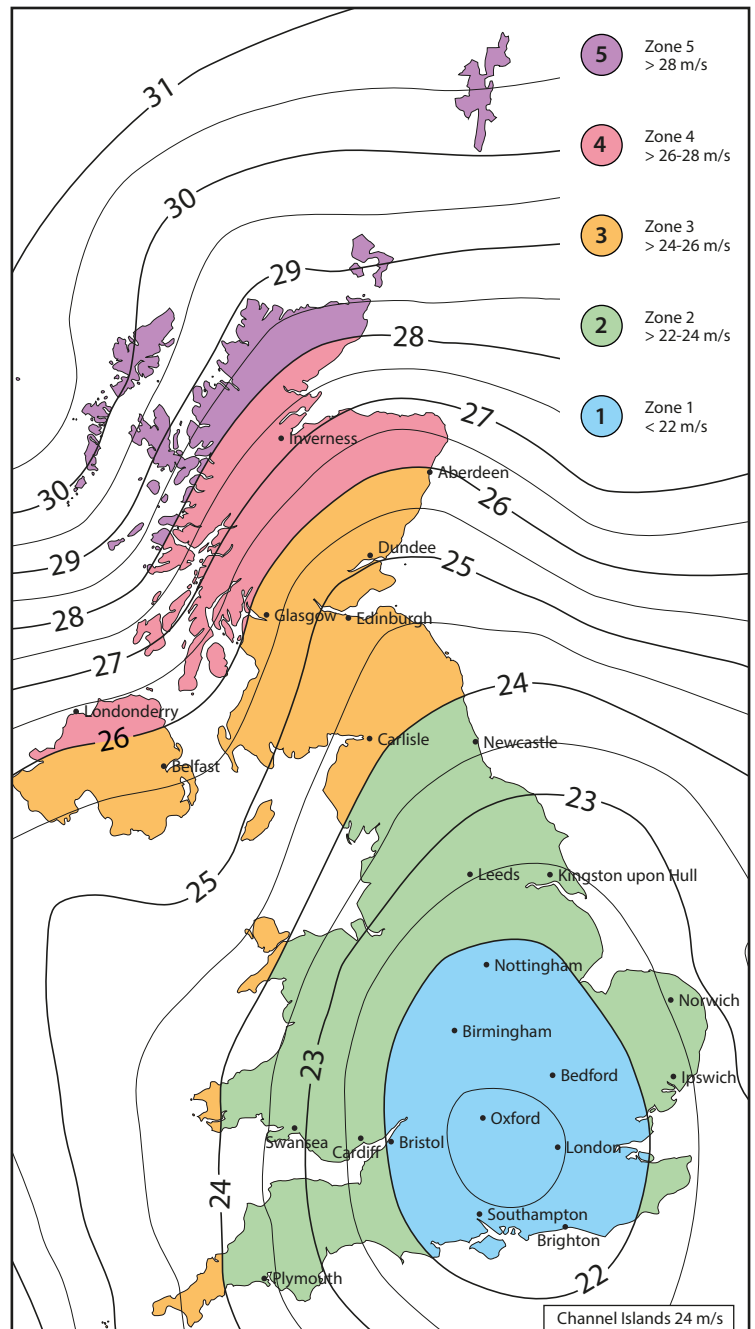
### ULTRAPERM BS 5534 APP



www.itpltd.com/bs5534

Which grade made simple with the free UltraPerm app

- Download the app
- Enter any UK postcode OR
- Click on the map
- Instant answer



### Summary of test results for wind uplift resistance of Powerlon UltraPerm underlays to BS 5534:2014 + A1:2015

Powerlon	Summary of Wind Zones					
	250mm Batten Gauge Battered Lap	345mm Batten Gauge Battered Lap	250mm Batten Gauge Integral Taped Lap	345mm Batten Gauge Integral Taped Lap	345mm Batten Gauge Single Sided Taped Lap	
UltraPerm Multizone	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
UltraPerm Max	1 2 3 4 5	1 2 3	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
UltraPerm Premium	1 2 3 4 5	1 2	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
UltraPerm Standard	1 2 3 4 5	1	1 2 3 4 5	1 2 3 4 5	1 2 3 4	1 2 3 4
UltraPerm Lite	1 2 3 4	Not Classified	1 2 3 4 5	1 2 3 4		

## BUILDING & SITE CONDITIONS

The new BS 5534: 2014 + A1: 2015 is based on the conditions below, which must be applied to the building and site concerned.

- Ridge height not greater than 15m
- Roof pitch between 12.5 and 75 degrees
- Site altitude not greater than 100m
- No significant site topography
- Maximum uplift deflection of the underlay no greater than 35mm

Underlays can be used in applications conforming to the above building and site conditions in all wind zones provided that their wind uplift resistance at a batten gauge of 345mm is not less than;

- 1600N/m<sup>2</sup> when a well-sealed ceiling is present
- 1900N/m<sup>2</sup> when no ceiling or no well-sealed ceiling is present
- 2350N/m<sup>2</sup> when no ceiling or no well-sealed ceiling is present and permanent dominant opening is present on an external face of the building.

Underlays used in applications conforming to the building and site conditions given above, including a well-sealed ceiling (see BS 9250), should be classified in accordance with their geographic location and

wind zone, see table figure below. Underlays should be used only in those wind zones for which the design wind pressure is not greater than the declared wind uplift resistance for the underlay, at the batten gauge tested.

## CONTROL OF CONDENSATION

The need to ventilate, or otherwise, roofs with insulation installed above, between or below the rafters differs from roofs with insulation installed above a horizontal ceiling. A well-sealed ceiling and an AVCL should always be provided. See the Powerlon AVCL range for more information. Table below taken from BS 5534: 2014 + A1: 2015.

Geographical Wind Zone	Design wind pressure (Pa) for underlay (N/m <sup>2</sup> )
5	1600
4	1330
3	1150
2	975
1	820

Fig.1

## EXAMPLE OF WIND PRESSURE

The breather membrane minimum result depends on the building, the site distance to sea, the building height and type of terrain (country or town).

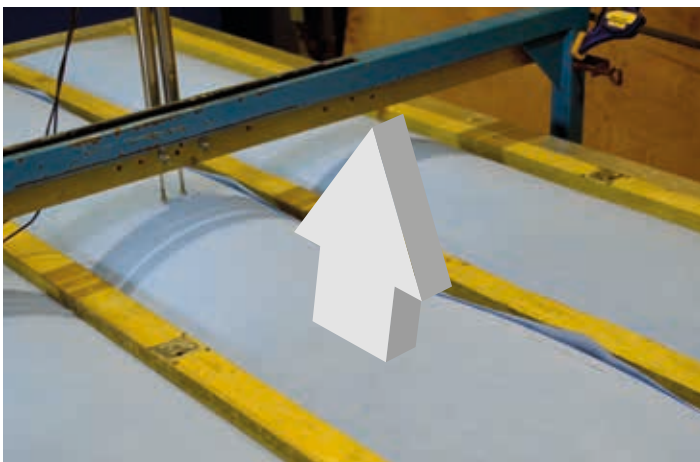
Wind uplift resistance N/m <sup>2</sup>							
Wind Zone	Building Height (m)	Distance to sea in country terrain			Distance to sea in town terrain		
		< 2 km	2 - 20 km	> 20 km	< 2 km	2 - 20 km	> 20 km
1	5	869	783	718	631	555	511
	10	1009	955	872	824	760	696
	15	1094	1062	977	945	897	826
	20	1122	1108	1017	1016	986	908
	25	1166	1166*	1072	1066	1052	966

Fig.2

\* Maximum wind design pressure of the underlay is 70% of the maximum wind velocity, e.g. 1166 x 70% = 816 N/m<sup>2</sup>.

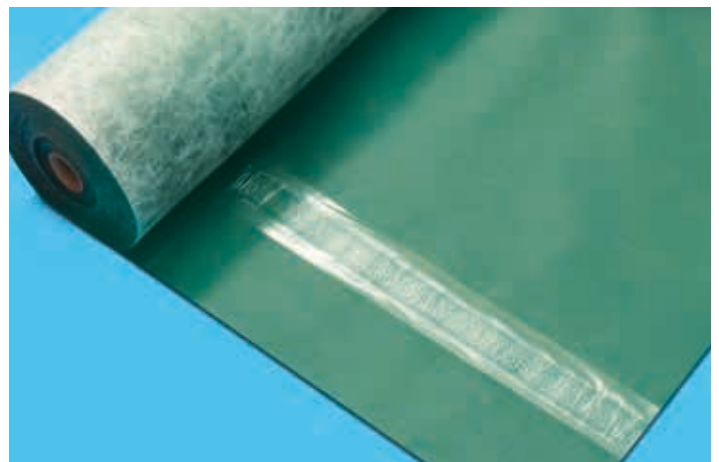
Min pressure/Wind Zone 1 = 820 Pa, see Fig.1

## BS 5534: 2014 + A1: 2015 WIND UPLIFT TESTING



BS 5534:2014 + A1:2015 Wind Uplift Testing

## INTEGRATED TAPE OPTION



Powerlon UltraPerm available with integrated tape option

# ULTRAPERM BREATHABLE MEMBRANES

## FEATURES

- Universal breather for roofs and walls
- British Board of Agrément (BBA) certified (Certificate No. 13/5037)
- CE Approved
- BS 5534: 2014 + A1: 2015 compliance
- 5 grades with and without integrated tapes
- High water vapour permeability
- Pre-printed marking lines
- Fully illustrated installation instructions
- Customised printing available

## OUTSTANDING TECHNICAL PERFORMANCE

	Weight	Nail tear resistance	Colour	Standard sizes
<b>UltraPerm MultiZone</b>	125 gsm	MD 100 N XD 100 N	Black	1.0 x 50 m 1.5 x 50 m
<b>UltraPerm Max</b>	155 gsm	MD 170 N XD 250 N	Green	1.0 x 50 m 1.5 x 50 m
<b>UltraPerm Premium</b>	135 gsm	MD 160 N XD 240 N	Blue	1.0 x 50 m 1.5 x 50 m
<b>UltraPerm Standard</b>	115 gsm	MD 130 N XD 190 N	Grey	1.0 x 25 m 1.0 x 50 m 1.5 x 50 m
<b>UltraPerm Lite</b>	92 gsm	MD 80 N XD 120 N	Dark Grey	1.0 x 50 m



## CUSTOMISED PRINTING

Powerlon UltraPerm can be customised and printed for corporate branding, product identification and advertising. Powerlon SP100 (house-wrap) is also custom printable.



Powerlon UltraPerm can be customised to include your logo

## TECHNICAL STANDARDS

Powerlon UltraPerm is manufactured to internationally recognised European and British Standards.

Quality Assured to ISO 9001 with full batch traceability.

### BBA CERTIFIED

BBA Certified for wall and roof applications – warm and cold, supported and unsupported, ventilated and unventilated, plus timber frame walls. Certificate No 13/5037.

### BS 5250

Code of Practice for the control of condensation in buildings.

### BS EN 12310-2:2000

Flexible sheets for waterproofing. Determination of resistance to tearing (nail shank).

### BS EN 13501-1

Fire classification of construction products and building elements. Classification using test data from reaction to fire tests.

### BS EN 13859

Flexible sheets for waterproofing. Definitions and characteristics of underlays. Underlays for discontinuous roofing.

### BS EN 1931

Flexible sheets for waterproofing. Bitumen, plastic and rubber sheets for roof waterproofing. Determination of water vapour transmission properties.

### IP4/06 Building Research Establishment

Airtightness of ceilings, energy loss & condensation risk.

### BS 5534:2014 + A1:2015

Revised code of practice for slating and tiling.

## OTHER PRODUCTS

- Powerlon Thermo-Reflective Membranes
- Powerlon Timber Frame Membranes
- Powerlon Vapour Control Layers
- Powerlon UV Façade Membranes
- Powerbase Gas Barrier Membranes
- Powerbase Hydrocarbon Barrier Membrane

## FURTHER INFORMATION

Further information is available on our website [www.powerlon.com](http://www.powerlon.com).

Please register to download Installation Instructions and Product Data Sheets.

Technical documentation is also available by contacting us by email or telephone.

**E: [powerlon@itpltd.com](mailto:powerlon@itpltd.com)**

**T: +44 (0)1347 825200**