P14 AIR/WIND TIGHTNESS VAPOUR PERMEABLE LAYERS

GENERAL GUIDANCE NOTES

DESIGN ISSUES

The joints must not be systematically or intentionally subjected to strain.

When the vapour check membrane is sealed, the weight of the insulating material must be borne by lathing.

Adhesive or taped joints should be supported by battens, if necessary.

Press firmly to secure the adhesive tape.

Ensure there is sufficient backpressure.

Airtight seals can only be achieved on vapour check membranes that have been laid without folds or creases.

CURRENCY OF INFORMATION:

The information provided in literature and this specification is based on practical experience and the current state of knowledge.

The manufacturer reserve the right to make changes to the recommendations given or to make alterations due to technical developments and associated improvements in the quality of our products.

We would be happy to inform you of the current state of technical knowledge at the time you use our products.

TERMS AND CONDITIONS

Further information about application and construction is given in the Pro clima planning documentation.

(Please also take note of the sealing recommendations contained in the current Pro clima application matrix.)

**END END OF SPECIFICATION GENERAL GUIDANCE NOTES**

**CLAUSE GUIDANCE NOTE**

P14/110A Constantly humid buildings e.g. swimming and leisure pool buildings are not suitable for the Pro Clima product range

P14/311A Pro Clima DB+.

A paper based humidity variable INTELLIGENT internal airtight vapour check which possesses effective variable moisture vapour diffusion resistance properties

It is manufactured from cellulose fibre, reinforced for additional strength and treated with natural salts against fire.

Pro clima DB+ provides a consistent internal airtight seal for the construction, while reducing the risk of interstitial condensation in both summer and winter conditions.

In summer conditions Pro clima Pro clima DB+ allows more vapour diffusion, therefore structural components can rapidly dry out.

In winter conditions it permits less vapour diffusion, hence protecting the building fabric from harmful vapour penetration.

In non-breathing structures i.e. those with highly vapour impermeable external materials, with a vapour barrier installed internally, any moisture that gets into the insulation will become trapped and immediately begin to degrade its performance.

Pro clima DB+ eliminates this risk by allowing any trapped moisture to evaporate away, enhanced by its humidity variable moisture vapour resistance.

Pro clima DB+ is able to adjust its vapour resistance to reflect changes in local humidity to maximise its performance in all conditions.

It permits less vapour diffusion in dry winter conditions and more in summer when humidity levels may be higher at the vapour check due to condensation in the previous winter.

Pro clima DB+ is also very strong due to its reinforced structure.

When installed in conjunction with the range of Pro clima proprietary airtightness tapes and adhesives, Pro clima DB+ assures an airtight building envelope with maximum potential freedom from structural damage.

As Pro clima DB+ has the ability to react to varying humidity levels, the result is a much more efficient and healthier building structure, even when it is penetrated by unanticipated moisture as a result of extremely adverse conditions, for instance, air leakage, or increased incorporated moisture during the construction phase, in timber building materials or insulating materials.

Pro clima DB+ reduces the risk of interstitial condensation dramatically, which in turn eliminates the threat of mould growth, ineffective insulation as a result of moisture saturation and damp rot.

With the introduction of the Code for Sustainable Homes and revisions to the Building Regulations Approved Document L, ‘Part L’, the airtightness of a construction is crucial to maximise thermal performance and reduce the CO2 emissions of our housing stock.

After the Pro clima DB+ humidity variable vapour check is installed, in conjunction with the Pro clima specialist tapes and adhesives a blower door airtightness measurement or a Wincon airtightness quality test can be performed.

See Preliminaries section A94 Airtightness testing.

Pro clima Pro clima DB+ provides the optimum paper based ecological solution to airtightness as it automatically adapts to atmospheric conditions, ensuring the building remains in good physical shape, healthy and airtight.

P14/316A

Pro Clima Solitex UD: Vapour Permeable Underlay

Low cost

P14/317A

Pro Clima Solitex Plus: The Next Generation Vapour Permeable Underlay

Solitex Plus is the Next Generation of High Performance vapour permeable Underlay. With an impressive range of characteristics such as high Vapour Permeability, Extreme Watertightness, High Nail Tear Resistance and Thermostability, Solitex Plus offers superior protection against condensation risk and extreme resistance against pelting rain.

Solitex Plus, from Pro clima is a Diffusion-Open vapour permeable membrane, and has received upgraded Irish Agrément Board certification which confirms its performance in all roofing systems, ventilated or non-ventilated, warm and cold roofs and has now also been awarded BBA Certification in the UK.

Solitex Plus is designed, engineered and manufactured under stringent conditions by Pro clima in Germany.

When under mechanical stress caused by accidentally stepping on the surface or nailing, the four ply combination of layers, the non slip outer fleece and especially the reinforced fillet material ensures that the product is highly tear resistant so there is minimal damage caused during installation.

The weather-tightness of conventional micro-porous membranes is to a large extent determined by the surface tension of water. If the surface tension is reduced due to conditions which may be found on construction sites, this may reduce the water resistance of the membrane and hence moisture may penetrate the porous membrane.

Solitex Plus contains a monolithic membrane which employs Closed Cell Technology.

Closed cell membranes offer superior weather tightness & at the same time, ensure that a significant amount of water vapour is actively removed from the inside of the building structure & diffused to the exterior.

The combination of these two properties is the determining factor when it comes to quality & the safety of the roof construction.

The four ply layer and Closed Cell Technology ensures that Solitex Plus has the best combination of extreme water resistance, high vapour permeability and outstanding physical strength.

Solitex Plus vapour permeable membrane provides the following key benefits:

Totally resistant to all wood preservatives, wood treatments or natural wood resins

Extreme resistant to wind driven pelting rain

Totally resistant to contamination due to on site chemicals

Solitex Plus, the next generation high performance underslating felt - ensures your roof will be finished to the highest possible specification using the most advanced underslating felt approved by the BBA and the IAB and now available on the market.

P14/333A PRO CLIMA RAPID CELL

Because of the non stick backing and inability to stick to itself, there is an element of risk that airtightness may be compromised by novice users, so its use is discouraged and no longer stocked in the UK, but is available by special order from Ireland.

Adhesive and adhesive tapes:

Choose natural for ecological projects

Choose solvent based for durability of joint

P14/335B BUDAX TOP

Tescon No. 1: to P14/332A is a suitable replacement for BUDAX TOP and Budax Top is no longer stocked in the UK, but is available by special order from Ireland.

P14/370A BUDAX AC

Tescon Primer RP is a suitable replacement for BUDAX AC and Budax AC is no longer stocked in the UK, but is available by special order from Ireland.

P14/381A & P14/381B AIRTIGHT LUMINAIRE HOUSING

Airtightness best practice dictates that surface penetration of the external envelope should be minimised.

Downlights present particular challenges for airtight design and continuity of the insulation layer.

However, if downlights are present there is a robust solution in the OPTIME Downlight housing units.

Designed as an innovative one stop solution for achieving a safe easy to install sealing system for downlights.

Optime Downlight housing boxes are offered as Mini and Maxi housing.

The Optime Maxi will accommodate a transformer,

the Mini is suitable only to house the downlight.

Downlight protector Mini is designed to suit all types of roofs and ceilings as it is very suitable in narrow places.

Optime Downlight boxes significantly reduce the carbon footprint of buildings which incorporate downlights as well as improving comfort and minimising problems associated with condensation.

While the Optime Downlight housing is made from a non-flammable materials Optime Downlight is not to be relied upon as a fire barrier, this is determined by the fixing between the downlight and the plaster board lining.

Features

The Mini is especially made for narrow spacings - 200 x 200 x 140 mm.

Simple to install.

Can be used for most conventional timber ceilings.

Supplied with a ‘snap on’ airtight cover for housing the light fixing tightly.

Ensures an effective moisture barrier is maintained.

Cover is simple to fit and requires no additional tools.

For energy conservation we recommend low energy light fittings, however, the housing is suitable for downlights up to 50W.

Inflammable – will tolerate high temperatures in accordance with building regulations.

Recognised by Nemko.

Made from recyclable material.

It is essential that light fittings are installed as per the Optime fitting manual, contact us for further information.

**Technical Details**

The transformer is NOT to be placed within the Downlight Protector Mini, since the size of the box causes too high a temperature for the transformer.

The transformer should either be mounted externally or by using the Downlight Protector Maxi.

Downlight Protector Maxi is also available with a flexible mounting .

3rd party accreditation:

Optime Mini size: 200 x 200 x 140 mm.

Optime Maxi size: 320 x 320 x 160 mm.

P14/740 INstallation: VapouR COntrol layers

Vapour control layers described in P10/\_\_\_].

If polyethylene should be minimum thickness: >/= 1000 gauge

P14/900A & 910

AIRTIGHTNESS TESTING: FORMAL TESTING: PRE LINING COMPLETION

Only for testing internal airtightness membrane

Test level:

UK Building Regulations Approved Document L, L1A/L1B/L2A/L2B: Air permeability Q50 </= 10 m3/hr/m2

Ireland Building Regulations: Air permeability Q50 </= 10 m3/hr/m2

EnEV,

Naturally ventilated: n50-Airchanges value: <3 h-1 (3 ACH at 50 Pa)

Without a mechanical ventilation system: n50-Air change value: <3 h-1 (3 AC/H at 50 Pa)

With a mechanical ventilation system: n50-Air change value: <1.5 h-1 (1.5 AC/H at 50 Pa)

Passivhaus Institute in Darmstadt Germany: target: n50 Air change value: </= 0.6 h-1 (0.6 AC/H at 50 Pa)

DIN 4108-7

Test level: n50 value: </= 3 air changes/hour

Building with controlled ventilation: n50 value: </= 1.5 h-1 (air changes/hour)

Canadian Super E Standard: n50 <1.5 h-1

NB n50 of 10 = Q50 of 10

P14/970 AIRTIGHTNESS TESTING: FORMAL TESTING: POST LINING COMPLETION

Only for testing internal airtightness membrane

Test level:

UK Building Regulations Approved Document L, L1A/L1B/L2A/L2B: Air permeability Q50 </= 10 m3/hr/m2

Ireland Building Regulations: Air permeability Q50 </= 10 m3/hr/m2

EnEV,

Naturally ventilated: n50-Airchanges value: <3 h-1 (3 ACH at 50 Pa)

Without a mechanical ventilation system: n50-Air change value: <3 h-1 (3 AC/H at 50 Pa)

With a mechanical ventilation system: n50-Air change value: <1.5 h-1 (1.5 AC/H at 50 Pa)

Passivhaus Institute in Darmstadt Germany: target: n50 Air change value: </= 0.6 h-1 (0.6 AC/H at 50 Pa)

DIN 4108-7

Test level: n50 value: </= 3 air changes/hour

Building with controlled ventilation: n50 value: </= 1.5 h-1 (air changes/hour)

Canadian Super E Standard: n50 <1.5 h-1

NB n50 of 10 = Q50 of 10

END END OF SPECIFICATION CLAUSE GUIDANCE NOTES

© 2009-2016 GBE NGS ASWS BrianSpecman

REV REVISIONS

|  |  |  |  |
| --- | --- | --- | --- |
| Revision No | Description | Author | Date |
| A00 | For Preliminary Issue  Extracted from Specification file A11 %%% | BRM | 14/12/2009 |
| A01 | Added note on video and URL | BRM | 10/05/2011 |
| B02 | Reviewed, post on Website: Scribd | BRM | 10/05/2011 |
| A03 | Rename file, headers and footers, logo, | BRM | 09/12/2012 |
| A04 | Updated T&C, deleted link to film, Updated NGS to GBE logos, Removed Uniclass J. | BRM | 26/04/2016 |
| B04 | Issue GBS P14 S GN Arthtnss B04BRM260416.docx to GBE website Shop | BRM | 26/04/2016 |

**Terms and Conditions**

**1 The ‘Information’**

1.1 The ‘Green Building Specification’ (GBS) and ‘GBS Robust Specification’ are services provided by National Green Specification (NGS) and now distributed via Green Building Encyclopaedia (GBE) website.

1.2 This specification was prepared for NGS and ‘Green Building Specification’ (GBS) by Architectural Specification Writing Services (ASWS).

1.3 GBS GBE NGS and ASWS specification approach is based on >30 years and >£2415m PROJECT specification commissions, information gathered from seminars, workshops, published information. Etc.

1.4 The specification clauses in this document (the 'Information') are based on information assimilated from published or unpublished verbal and written information from manufacturers, etc.

1.5 The Information will continue to be developed and current files will be maintained on the GBE website at [www.greenbuildingencyclopaedia.uk](http://www.greenbuildingencyclopaedia.uk)

**2 Copyright Notice**

2.1 Copyright and all other intellectual property rights in the Information shall remain at all times the property of NGS and you shall acquire no rights in any such material except as expressly provided in this Agreement.

2.2 You are permitted to reproduce any part or parts either alone or in conjunction with your own material for the purposes of internal use in the your office, or for inclusion in any drawings or contract documents used or intended to be used in connection with a building contract where you are contracting party, or in connection with which you are engaged by one of the contracting parties in a professional capacity.

2.3 You shall not use, sell, assign, rent, sub-license, loan, or otherwise deal in any way in the Information or any interest in it except as expressly provided herein.

**3 Disclaimer**

3.1 Whilst NGS endeavours to ensure that the Information is correct, it is provided on an "as is" basis, without warranties of any kind, and no warranty, express or implied, is given as to accuracy, currency or completeness and NGS does not accept any liability for any error or omission. NGS shall not be liable for any third party claims or losses of any nature including, but not limited to, loss of profits, direct, indirect, special or consequential damages arising from a third party's use or inability to use this Information.

3.2 All users and others must verify the contents of the Information and ensure that its application is effective to communicate what is required by them and that the Information is fit for their intended use which has not been specified by NGS.

3.3 NGS accepts no responsibility for the content on any internet website to which a hypertext link from this specification exists. The links are provided "as is" with no warranty, express or implied, for the information provided within them.

**4 General**

4.1 These terms and conditions may be revised from time to time without prior notice.

4.2 If any part of this Agreement is held by a court of competent jurisdiction to be unenforceable the validity of the remainder of the Agreement will not be affected.

4.3 This Agreement is covered by the Laws of England and Wales.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Addenda**

**NBS compatibility**

National Building Specification (NBS) is the industry standard specification library.

NGS’s Green Building Specification (GBS) and Robust Specifications (GBS RS) are designed to complement NBS.

NGS clauses are written specifically to address issues of environmental sustainability.

NBS adopts and develops the Construction Project Information Committee’s (CPIC) classification system Common Arrangement of Work Sections (CAWS) 1998 edition.

GBS adopts and develops the CPIC and NBS versions of CAWS to enable integration into NBS-based specifications.

GBS adopts NBS clause numbering to provide for easy clause assimilation.

CPIC: http://www.cpic.org.uk

CAWS: <http://www.cpic.org.uk/en/publications/common-arrangement-listing.cfm>

NBS: [www.thenbs.com/](http://www.thenbs.com/)

GBE website: [www.greenbuildingencyclopaedia.uk](http://www.greenbuildingencyclopaedia.uk)

GBE shop: [www.greenbuildingencyclopaedia.uk/shop/](http://www.greenbuildingencyclopaedia.uk/shop/)