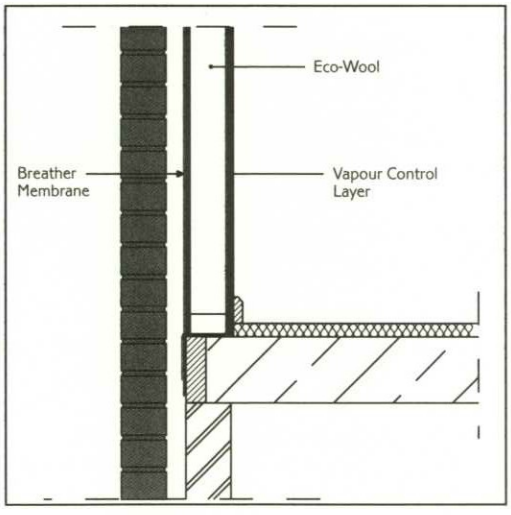
Points of attention (continued)

3. **Cavity insulation**
   - specifically the continuity of vapour control layers must be maintained at laps and joints;
   - all sorts of perforations should be kept to a minimum and well be sealed.
4. **Timber frame insulation**
   - the building physical of wall structures incorporating the insulation within a timber frame must be analyzed by a specialist;
   - special attention should be given to the air tightness of the inner wall finishing; in certain cases a vapour barrier could be considered.
5. **Thermal insulation**
   - great attention should be given to the thorough butting of the insulation batts, as well as where the batts meet other parts of the construction.

Installation

1. **General**
   - the installation of Eco-Wool insulation can be carried out as a DIY operation;
   - Eco-Wool does not itch or cause respiratory problems, therefore the product can be installed without the need for a mask, gloves or protective clothing.
2. **Loft insulation**
   - all removable obstructions should first be cleared from the loft space and any holes in the ceiling, such as around pipes, should be sealed;
   - water tanks should be covered and any sources of moisture, such as vent pipes for central heating, should be arranged to avoid water vapour entering the loft space;
   - to reduce the risk of frost damage due to ceiling insulation, the pipes and tank in the loft space should be lagged before installing the Eco-Wool insulation;
   - the area directly below cold water tanks when resting at joist level must not be insulated to avoid the risk of freezing of the stored water in cold weather.
3. **Cavity insulation**
   - batts are fixed butted against each other;
   - when necessary, the insulation can be cut to size with a serrated knife;
   - care should be taken to minimize gaps, all gaps should be sealed using pieces of uncompressed insulation;
   - a vapour control layer could be provided at the warm side of the insulation.
4. **Timber frame insulation**
   - batts are fixed butted against each other between studs;
   - when necessary, the insulation can be cut to size with a serrated knife;
   - care should be taken to minimize gaps, all gaps should be sealed using pieces of uncompressed insulation;
   - a vapour control layer could be provided at the warm side of the insulation;
   - a typical timber frame construction with cavity insulation is shown in diagram 1.

Diagram 1 - Typical timber frame construction with cavity insulation



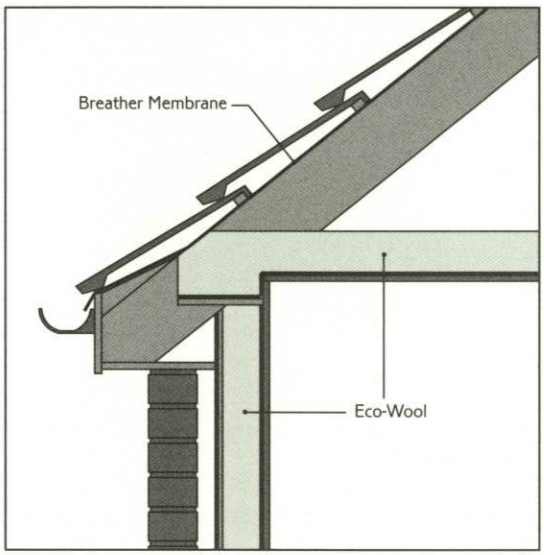
Points of attention (continued)

- if ventilation openings are used they should be positioned along two opposite sides of the roof at eaves level in accordance with clause 9.4 of BS 5250: 1989;
- ventilation openings should be arranged in such a way that blockage is prevented and also the ingress of rain, snow, birds and small mammals.

3. **Cavity insulation**
   - it is essential that cavity walls incorporating the insulation in the cavity are designed in such a way that they contain the normal precautions against moisture ingress;
   - specifically the continuity of vapour control layers must be maintained at laps and joints;
   - all sorts of perforations should be kept to a minimum and well be sealed;
   - to minimize the risk of condensation within the structure the recommendations of BS 5250 : 1989 should be followed.
4. **Timber frame insulation**
   - the building physical of wall structures incorporating the insulation within a timber frame must be analyzed by a specialist;
   - special attention should be given to the air tightness of the inner wall finishing; in certain cases a vapour barrier could be considered.
5. **Thermal insulation**
   - for the purpose of U value calculations to determine if the requirements of the Building (or other statutory) Regulations are met, the thermal conductivity (λ value) of the product may be taken as 0.0385 $W.m^{-1}.K^{-1}$;
   - the requirement for limiting the heat loss through the building fabric, including the effect of thermal bridging can be satisfied if the U values the building elements do not exceed the maximum values in the relevant Elemental Methods given in the national Building Regulations of England and Wales (Approved Documents L), Scotland (Technical Standards J) and Northern Ireland (Technical Booklet F);
   - in these documents also guidance is given on selecting the thickness of the insulation required to achieve the desired U value of the roof or the wall;
   - a typical timber frame construction with loft and cavity insulation is shown in diagram 1.
6. **Durability**

   The product is stable, rot-proof and durable and will remain effective as an insulant for the life of the building in which it is installed. There is no risk for moth or beetle infestation.

Diagram 1 - Typical timber frame construction with loft and cavity insulation



Number		Category
BPD 07-223	**BDA Agrément Certificate**	Specific
Date	**ROOFS and CAVITIES Installation**	**Phase**
2008.01.15		Installation
Code		**Subject**
41PET00		Thermal insulation batts for lofts and cavities

Product	**Eco-Wool / Incrediwool / Non-Itch Slabs**
Supplier	Yorkshire Building Services (Whitwell) Ltd. The Crags Industrial Park Morven Street UK-S80 4AJ Creswell Derbyshire T.: +44 (0) 1909 721662, F.: +44 (0) 1909 721442 E.: technical@ybsinsulation.com, I.: www.ybsinsulation.com
Description	Polyester thermal insulation batts
Scope (objective)	Thermal insulation batts for use in lofts and cavities of dwellings and buildings with similar temperature and humidity conditions

Frame of reference

1. Directive BDA Agrément Certificates (Praktijkbladen), January 2007
2. UKAS Test Report on the Thermal Conductivity of RBF L 13C (50), **Serial Number 753**, issued by Thermal Measurement Laboratory, The University of Salford, 15 June, 2007
3. BDA Agrément Certificate BPD 07-222 Eco-Wool batts (phase: design)
4. BS 5534-1: 1997 Code of practice for slating and tiling (including shingles) - Design
5. BS 5250 : 1998 Code of practice for control of condensation in buildings
6. BDA report 0207-L-07 Eco-Wool: determination of flammability (BS 5803-4), 2007.09.03
7. BDA report 0207-L-07 Eco-Wool: thermal conductivity (EN 12667), 2007.09.03
8. BDA report 0207-L-07 Eco-Wool: dimensions (EN 822), 2007.09.03
9. BDA report 0207-L-07 Eco-Wool: dimensional stability (EN 1604), 2007.09.03
10. BDA report 0207-L-07 Eco-Wool: tensile strength parallel to faces (EN 1608), 2007.09.03
11. BDA report 0207-L-07 Eco-Wool: water vapour diffusion resistance (EN 10286), 2007.09.03
12. BDA report 0207-L-07 Eco-Wool: water absorption properties (EN 1609), 2007.09.03

Product characteristics

• nominal length	: 1200	(mm)
• nominal width	: 460	(mm)
• nominal thickness	: 50, 100, 150, 200	(mm)
• nominal density	: 20	($kg.m^{-3}$)
• thermal conductivity	: 0.0385	($W.m^{-1}.K^{-1}$)
• dimensional stability	: -0.01/+0.04	(%)
• tensile strength parallel to faces	: 83.3	(kPa)
• water vapour diffusion resistance	: 1.77	(-)
• water absorption - short term	: 0.96	($kg.m^{-2}$)
• water absorption - long term	: 0.88	($kg.m_{-2}$)
• flammability	: no extension of combustion to within 25 mm of any part of the timber surround	

Points of attention

1. The batts are wrapped in polythene and should include product name, dimensions, the BDA identification mark and the number of this certificate.
2. **Loft insulation**
   - special attention should be given to the air tightness of the ceiling, being the most important measure to avoid excessive condensation in the space above the insulation; in certain cases a vapour barrier could be considered;
   - if ventilation openings are used they should be positioned along two opposite sides of the roof at eaves level in accordance with clause 9.4 of BS 5250: 1989;
   - ventilation openings should be arranged in such a way that blockage is prevented and also the ingress of rain, snow, birds and small mammals.

Number		Category
BPD 07-222	**BDA Agrément Certificate**	Specific
Date 2008.01.15	**ROOFS and CAVITIES Design**	**Phase** Design
Code 41PET00		**Subject** Thermal insulation batts for lofts and cavities

Product	**Eco-Wool / Incrediwool / Non-Itch Slabs**
Supplier	Yorkshire Building Services (Whitwell) Ltd. The Crags Industrial Park Morven Street UK-S80 4AJ Creswell Derbyshire T.: +44 (0) 1909 721662, F.: +44 (0) 1909 721442 E.: technical@ybsinsulation.com, I.: www.ybsinsulation.com
Description	Polyester thermal insulation batts
Scope (objective)	Thermal insulation batts for use in lofts and cavities of dwellings and buildings with similar temperature and humidity conditions
Frame of reference	1. Directive BDA Agrément Certificates (Praktijkbladen), January 2007 2. UKAS Test Report on the Thermal Conductivity of RBF L 13C (50), **Serial Number 753**, issued by Thermal Measurement Laboratory, The University of Salford, 15 June, 2007 3. BDA Agrément Certificate BPD 07-223 Eco-Wool batts (phase: installation) 4. BS 5534-1: 1997 Code of practice for slating and tiling (including shingles) - Design 5. BS 5250 : 1998 Code of practice for control of condensation in buildings 6. BDA report 0207-L-07 Eco-Wool: determination of flammability (BS 5803-4), 2007.09.03 7. BDA report 0207-L-07 Eco-Wool: thermal conductivity (EN 12667), 2007.09.03 8. BDA report 0207-L-07 Eco-Wool: dimensions (EN 822), 2007.09.03 9. BDA report 0207-L-07 Eco-Wool: dimensional stability (EN 1604), 2007.09.03 10. BDA report 0207-L-07 Eco-Wool: tensile strength parallel to faces (EN 1608), 2007.09.03 11. BDA report 0207-L-07 Eco-Wool: water vapour diffusion resistance (EN 10286), 2007.09.03 12. BDA report 0207-L-07 Eco-Wool: water absorption properties (EN 1609), 2007.09.03
Product characteristics	• nominal length : 1200 (mm) • nominal width : 460 (mm) • nominal thickness : 50, 100, 150, 200 (mm) • nominal density : 20 ($kg.m^{-3}$) • thermal conductivity : 0.0385 ($W.m^{-1}.K^{-1}$) • dimensional stability : -0.01/+0.04 (%) • tensile strength parallel to faces : 83.3 (kPa) • water vapour diffusion resistance : 1.77 (-) • water absorption - short term : 0.96 ($kg.m^{-2}$) • water absorption - long term : 0.88 ($kg.m^{-2}$) • flammability : no extension of combustion to within 25 mm of any part of the timber surround
Points of attention	1. The batts are wrapped in polythene and should include product name, dimensions, the BDA identification mark and the number of this certificate. 2. **Loft insulation** - the building physical behaviour of roof structures incorporating the insulation at ceiling level must be analyzed by a specialist; - special attention should be given to the air tightness of the ceiling, being the most important measure to avoid excessive condensation in the space above the insulation; in certain cases a vapour barrier could be considered;