

CERTIFICATE NO. 07/0268

Don & Low Ltd. Nonwovens,
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Daltex MultiTX[®] Barrier Roof Tile Underlays

Souscouche de couverture en tuiles **Unterlage für Ziegeldach**

The **Irish Agrément Board** is designated by Government to issue European Technical Approvals. Irish Agrément Board Certificates establish proof that the certified products are '**proper materials**' suitable for their intended use under Irish site conditions, and in accordance with the **Building Regulations 1997 to 2006**.

The **Irish Agrément Board** operates in association with the **National Standards Authority of Ireland (NSAI)** as the National Member of UEAtc.

PRODUCT DESCRIPTION:

This Certificate relates to Daltex MultiTX[®] range of barrier roof tile underlays – MultiTX[®] and MultiTX[®] Plus – for use as an unsupported or supported roof lining material on tiled or slated pitched roofs. Daltex MultiTX[®] underlays are manufactured by thermal bonding a barrier membrane to a spunbond fabric to form a flexible sheet.

This Certificate certifies compliance with the requirements of the Building Regulations 1997 to 2006.



and MultiTX[®] are registered trademarks of Don & Low Ltd.

USE:

The material is manufactured for use under tiles or slates on open rafter (unsupported) or supported ventilated pitched roofs.

Daltex MultiTX[®] underlays provide a barrier which:

- Prevents the ingress of windblown rain, dust and snow.
- Minimises the effects of wind load generated under wind gusts acting on slates and tiles when installed in accordance with this Certificate.
- Offers superior resistance to tearing during installation.
- Remains flexible at low ambient temperatures.
- Is a modern alternative to traditional 1F roofing felt.
- Has exceptional resistance to water penetration.
- Is clean, light and easy to cut.
- Is stabilised against UV degradation.

This Certificate is a confirmation of BBA Certificate No. 05/4221 issued by the British Board of Agrément, PO Box 195, Bucknalls Lane, Garston, Watford WD25 9BA.

MANUFACTURE:

The product is manufactured by:

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1.1 ASSESSMENT

In the opinion of the Irish Agrément Board (IAB), Daltex MultiTX[®] barrier roof tile underlays, if used in accordance with this Certificate can meet the requirements of the Building Regulations 1997 to 2006, as indicated in Section 1.2 of this Irish Agrément Certificate.

1.2 BUILDING REGULATIONS 1997 to 2006

REQUIREMENT:

Part D – Materials and Workmanship

D3 – Daltex MultiTX[®] underlays, as certified in this Certificate, are comprised of 'proper materials' fit for their intended use (see Part 4 of this Certificate).

D1 – Daltex MultiTX[®] underlays, as certified in this Certificate, meet the requirements of the building regulations for workmanship.

Part A - Structure

A1 – Loading

Tests indicate that roofs incorporating Daltex MultiTX[®] underlays meet the requirements provided the installations comply with the conditions set out in Section 2.4 and Part 3 of this Certificate.

Part B – Fire Safety

B4 – External Fire Spread

Daltex MultiTX[®] underlays will not prejudice the external fire resistance of the roof, as indicated in Section 4.1 of this Certificate.

Part C – Site Preparation and Resistance to Moisture

C4 – Resistance to Weather and Ground

Moisture

Daltex MultiTX[®] underlays meet the requirements when installed as indicated in Section 2.4 of this Certificate.

Part F – Ventilation

F2 – Condensation in Roofs

Daltex MultiTX[®] underlays will provide water vapour permeability less than that quoted as a minimum for classification as a vapour permeable roof tile underlays in BS 5534-1:2003 *Code of practice for slating and tiling – Design*.

The design guidelines contained in Section 2 of the TGD to Part F of the Building Regulations 1997 to 2006 and BS 5250:2002 *Code of practice for control of condensation in buildings*, Section 8.4.2, must be met when installing this product.

Daltex MultiTX[®] underlays can be treated as impermeable underlays when considering the ventilation requirements of the roof.

Part L – Conservation of Fuel and Energy

L1 – Conservation of Fuel and Energy

Based on the measured vapour resistance of Daltex MultiTX[®] underlays, roofs incorporating insulation can meet the requirements of Part L of the Building Regulations 1997 to 2006.

Where the ceiling has to be fixed to the soffit of the rafters as in dormer roof construction, a continuous ventilation space of at least 50mm should be arranged as shown in Diagram 6D of TGD to Part F of the Building Regulations 1997 to 2006. In these circumstances it will be necessary to install a vapour control layer on the warm side of the insulation.

2.1 PRODUCT DESCRIPTION

Daltex MultiTX[®] roof tile underlays are watertight, vapour impermeable, flexible membranes intended for use as an underlay on unsupported and supported pitched roofs, constructed in accordance with ICP 2:2002 *Irish code of practice for slating and tiling*.

2.2 MANUFACTURE

Daltex MultiTX[®] is manufactured by thermal bonding a barrier membrane to a spunbond fabric to form a flexible sheet. Daltex MultiTX[®] Plus is manufactured by thermal bonding a barrier membrane between two spunbond fabrics.

The nominal characteristics of the underlay are given in Table 1 below.

	Value/Units
Roll Width	1 m
Roll Length	Up to 50 m
Thickness	0.4 mm
Weight	116 g/m ²
Roll Weight	Up to 6.5 kg
Colour	Grey

Table 1: Nominal Characteristics

2.2.1 Quality Control

Quality control checks are carried out on the incoming raw materials, during production and on the finished product. These checks include visual inspection and checks on dimensions (length, width), weight, tensile strength and elongation, tear resistance and hydrostatic head (water penetration resistance).

2.3 DELIVERY, STORAGE AND MARKING

Daltex MultiTX[®] underlays are supplied in rolls and delivered to site individually wrapped in polythene. A technical leaflet bearing the product name, IAB logo and Certificate number, is included with each roll or available on request. Labels with lot identifiers are attached to each roll for traceability.

Rolls should be stored on a flat level, smooth, clean, dry surface and be kept under cover to protect from long-term exposure to UV light. Care must be taken to avoid contact with solvents and with materials containing volatile organic components such as coal tar, and timbers newly treated with solvent based preservative (creosote). Reasonable precautions must be taken in handling the rolls to prevent damage, such as tears or perforations, occurring before and during installation, and prior to the application of the roof covering.

The rolls must not be exposed to a naked flame or other ignition source.

2.4 INSTALLATION

2.4.1 General

Daltex MultiTX[®] underlays must be installed and fixed in accordance with this Certificate, the Certificate holder's instructions, and the relevant recommendations of ICP 2:2002 and BS 5534-1:2003.

2.4.2 Installation Procedure

Installation of Daltex MultiTX[®] underlays can be carried out in all conditions normal to pitched roofing work. In roof construction it is important to remember that Daltex MultiTX[®] underlays are the second line of defence in excluding water penetrating the roof. For this reason the following list of criteria must be met to comply with the requirements of this Certificate:

- Installation commences by unrolling the Daltex MultiTX[®] barrier roof tile underlay horizontally across the rafters, starting at the eaves and working towards the ridges of the roof.
- Each horizontal run must be installed with a minimum drape of 10 to 15mm between the rafters at 600mm centres to permit free drainage of water into the gutter.
- When tacking the underlay to the rafters it is recommended that a 3mm diameter x 20mm long extra large head felt nails of copper, aluminium alloy or galvanised steel be used. The underlay should be tacked at the head of the sheet only, at centres not exceeding 1200mm. It is important that all tacking nails be covered by the overlap of the next underlay course so that the minimal headlap is maintained between the tacks and the lower edge of the overlapping underlay.
- Overlaps of the underlay should be provided in accordance with the minimum dimensions given in Table 2, which are taken from ICP 2:2002.

Roof Pitch	Horizontal lap		Vertical lap
	Partially Supported	Fully Supported	
Pitch < 22.5°	225 mm	100 mm	100 mm
22.5° < Pitch < 35°	150 mm	100 mm	100 mm
Pitch > 35°	100 mm	75 mm	100 mm

Table 2: Minimum Overlaps

- Where overlaps do not coincide with a batten, consideration should be given to either including an extra batten at the overlap or increasing the underlay overlap to coincide with the next batten.

- Batten gauges should not exceed that recommended by the tile/slate manufacturer for the particular tile/slate being used. In areas where the wind speed is greater than 48 m/s ICP 2:2002 should be followed.
- Moisture content of battens at time of fixing should not exceed 22%. Where timbers on roofs have been treated with wood preservative due to high moisture content of timbers, it is essential that manufacturer's guidance be sought in relation to chemical attack from preservative on roofing underlay.
- At the eaves, the use of a type 5U felt to meet specifications of BS 747:2000 *Specifications for roofing felts* must be used. This felt should be laid typically in accordance with Table 2 and dressed 50mm into the gutter. The provision of a tilting felt/continuous ply support or proprietary eaves ventilation tray is also required to avoid water being trapped behind the fascia board.
- Daltex MultiTX[®] underlays are not designed to withstand the weight of operatives or tiles being loaded out. Where pressure on the underlay over a rafter is unavoidable, it should be noted that the membrane does not offer substantial grip, particularly at overlaps.
- Where the underlay becomes damaged for whatever reason, repairs can be carried out by overlaying the damaged area with a layer of additional material ensuring a 150mm overlap all round, ensuring that the up-slope side is overlapped by the next highest horizontal run of underlay, and secured under a batten.
- Standard methods of workmanship should be used to apply the underlay at penetrations and abutments. It must be ensured that the underlay is turned up at least 50mm at all abutments to be overlapped by the flashings, and that it overlaps the lining tray by at least 100mm at the back face of any abutment.
- Courses of underlay over a hip should be overlapped by at least 150mm. Each course should overlap the underlay course on the adjacent elevation of the roof.
- Hips and valleys should be covered with a 600mm wide strip of Daltex MultiTX[®].
- For duo pitch roofs not requiring ridge ventilation, underlay from each side of the ridge should overlap the other side by at least 225mm. For mono pitch roofs not requiring ridge ventilation, the underlay should extend over the mono ridge and the top fascia board by at least 100mm. Where proprietary ventilating ridge systems are specified, detailing of the underlay should be in accordance with the Certificate holder's recommendations.
- After the underlay is installed, it should be covered by the finished roof covering as soon as practicable, to minimise the effects of long term exposure to UV light.
- Daltex MultiTX[®] underlays are not suitable for use in flat roof construction.

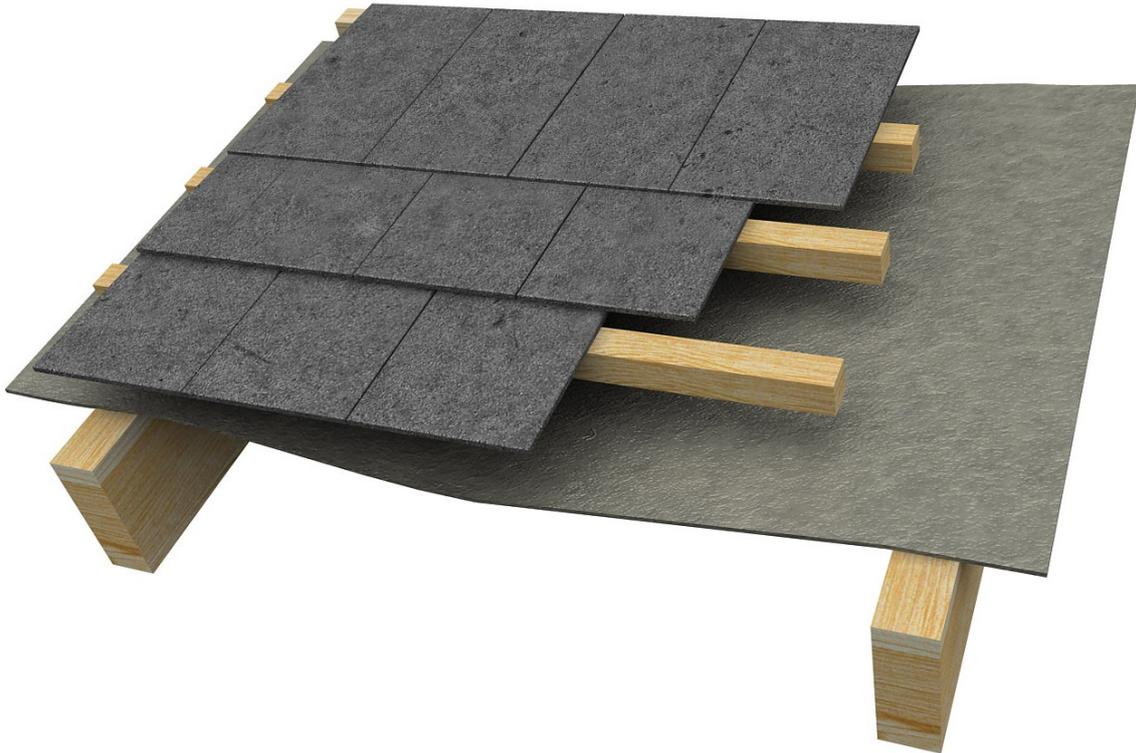
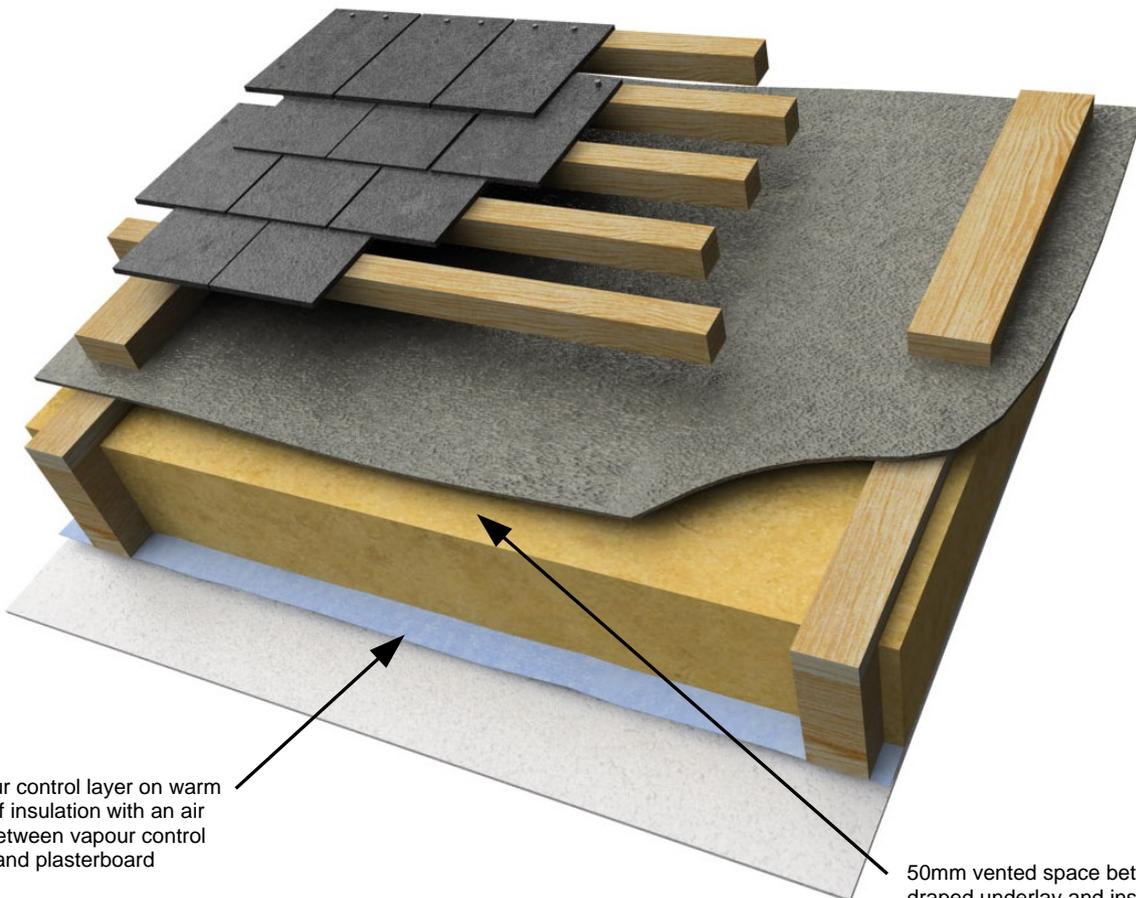


Figure 1: Cold roof detail



Vapour control layer on warm side of insulation with an air gap between vapour control layer and plasterboard

50mm vented space between draped underlay and insulation

Figure 2: Warm roof detail

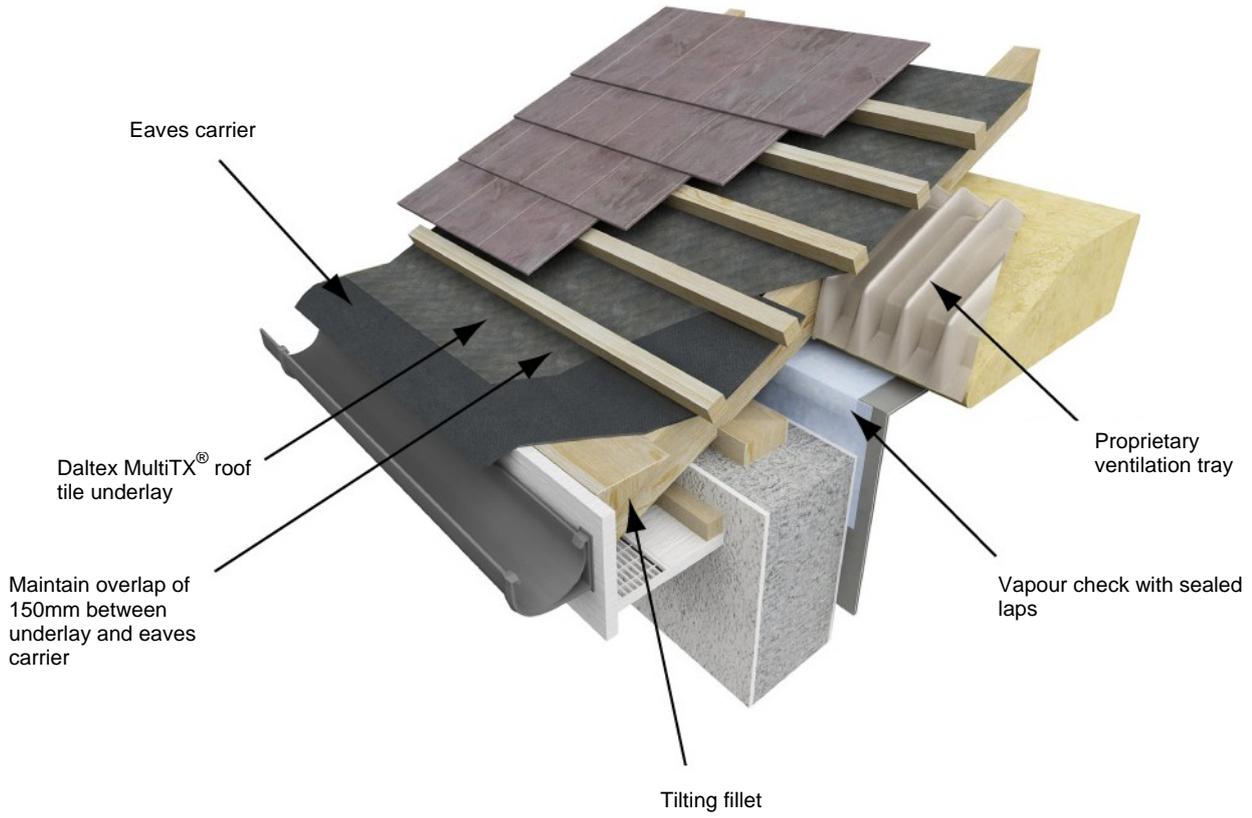


Figure 3: Eaves detail for cold roof

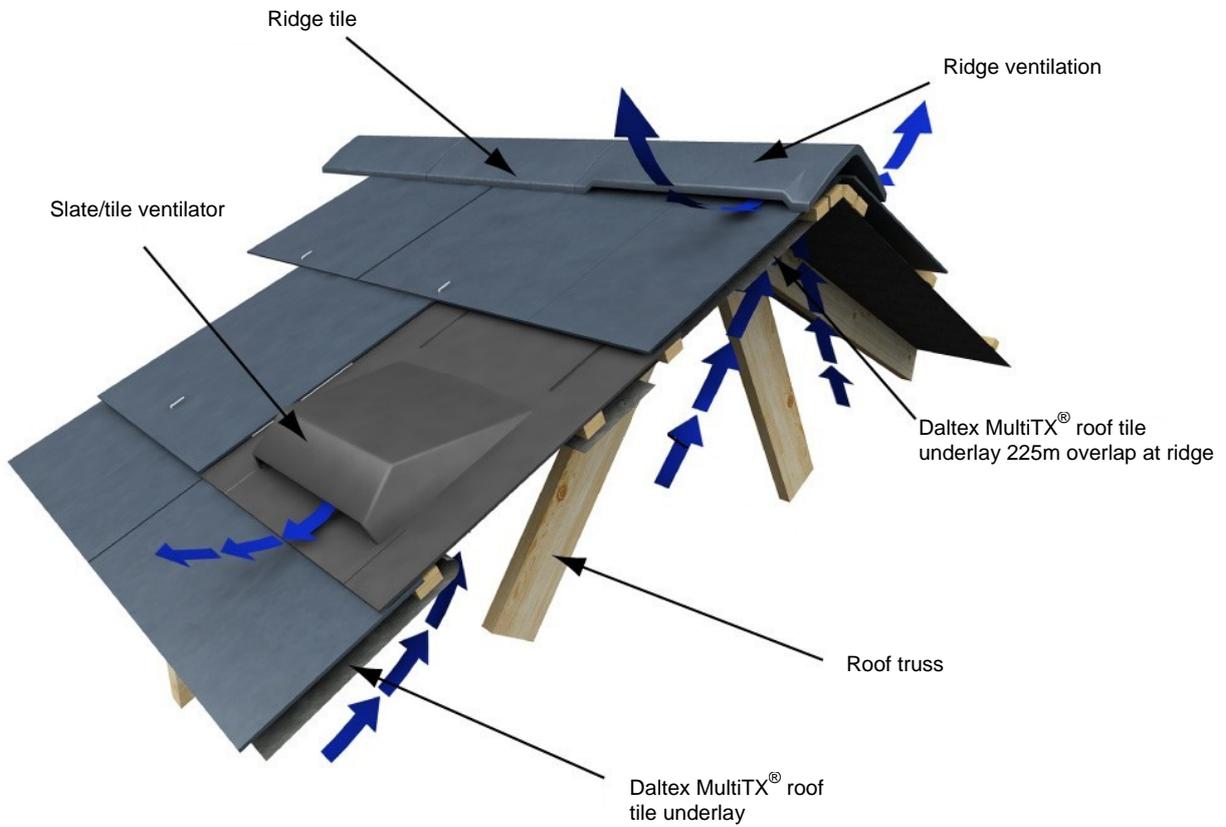


Figure 4: Ridge detail for cold roof

3.1 GENERAL

Daltex MultiTX[®] barrier roof tile underlays provide a satisfactory underlay in tiled and slated pitched roofs constructed in accordance with ICP 2:2002, BS 5534-1:1997 and BS 8000-6:1990 *Code of practice for slating and tiling of roofs and claddings*.

3.2 STRENGTH

Daltex MultiTX[®] underlays will resist the loads associated with the installation phase of the roof.

Daltex MultiTX[®] underlays have adequate resistance to withstand typical uplift values for various rafter/batten centres.

Design wind speeds should be determined – the maximum net wind pressure must not exceed 2.5 kPa as calculated in accordance with BS 6399: Part 2:1997 *Code of practice for wind loads*.

3.3 WEATHERTIGHTNESS

Tests confirm that Daltex MultiTX[®] underlays will resist the passage of water, wind-blown snow and dust into the interior of a building under all conditions to be found in a roof constructed to ICP 2:2002, BS 5534:Part 1:1997 and BS 8000:Part 6:1990.

The underlay may be used to provide temporary waterproofing to the structure of the building prior to the installation of slates or tiles. It is however recommended that this period of time be kept to a minimum in accordance with the manufacturer's guidance.

3.4 VENTILATION

Particular attention should be given to ensure that there is adequate ventilation to the roof space at both eaves and ridge levels in accordance with TGD to Part F of the Building Regulations 1997 to 2006. Ridge vents must be flashed and sealed to the underlay to ensure that the roof space is ventilated at all times and to protect the opening from moisture running down the membrane.

Where the ceiling has to be fixed to the soffit of the rafters and insulation is to be fitted between rafters, as in dormer construction, a continuous ventilation space of at least 50mm should be arranged for as shown in Diagram 6D of TGD to Part F of the Building Regulations 1997 to 2006; in these circumstances it will be necessary to install a vapour control layer at the warm side of the insulation. The vapour control layer should be of a minimum 500-gauge polyethylene or its equivalent, with sealed laps.

It is essential that roofs be constructed so as to minimise the risk of moisture vapour entering the attic space and forming condensation. In accordance with good building construction practice, all openings for services and trap doors should be draught sealed, and trap doors should not be located in bathrooms, shower rooms or kitchens.

4.1 BEHAVIOUR IN FIRE

Daltex MultiTX[®] barrier roof tile underlays have similar properties in relation to fire to polythene sheets and so will present no additional fire hazard to a roof structure in which they are incorporated.

Tests indicate that Daltex MultiTX[®] underlays have the risk of fire spread when used unsupported, should the material be accidentally ignited during maintenance works, etc. (e.g. by a roofer or plumbers torch). As with all types of sarking material, care must be taken during building and maintenance to avoid the material becoming ignited.

Daltex MultiTX[®] underlays being combustible material must be separated from chimneys and flues as indicated in cl. 2.15, 2.16 and 2.17 of TGD to Part J of the Building Regulations 1997 to 2006.

Toxicity is negligible when used in a roof situation.

4.2 WATER PENETRATION

Daltex MultiTX[®] underlays, when used in accordance with this Certificate, present no significant risk of water penetration.

4.3 WATER VAPOUR PENETRATION AND CONDENSATION RISK

Daltex MultiTX[®] underlays have a significantly lower water vapour permeability than that quoted as a minimum for conventional vapour permeable roof tile underlays in BS 5534-1:2003. Daltex MultiTX[®] underlays can be treated as an impermeable underlay when considering the ventilation requirements of the roof. Typical values of water vapour resistance are given in Table 3. The general design guides contained in BS 5250:2002, Sections 8.4.2.2 to 8.4.2.6 must be met when installing this product. Refer to Section 3.4 of this Certificate for ventilation requirements and information on the use of a vapour control layer when required.

Material	Water Vapour Resistance (MNs/g)	Water Vapour Permeability (g/m ² /day)
Daltex MultiTX [®]	57	3.6
Traditional felt underlay (maximum)	570	0.36
Polythene sheet (0.15mm)	450	0.46

Table 3: Water Vapour Resistance to BS 3177

4.4 DURABILITY AND MAINTENANCE

Daltex MultiTX[®] underlays, when installed in accordance with this Certificate, Certificate

holder's instructions and relevant codes of practice, is virtually unaffected by conditions normally found in a roof space and will have a design life comparable with that of the roof and in accordance with BS 7543:1992 *Guide to the durability of building elements, products and components*. The durability of the roof underlay will be dependent on the performance of the roof covering (slates/tiles) and this could be compromised if the roof is not routinely maintained or is subjected to inappropriate traffic. Such maintenance would involve building owners having their roofs inspected annually, preferably in late autumn. Inspection should include checking for missing, damaged or loose slates/tiles and their accessories or flashings. Clogged gutters or downpipes should be unblocked and cleaned.

4.5 TESTS AND ASSESSMENTS WERE CARRIED OUT TO DETERMINE THE FOLLOWING:

Table 4 gives a summary of the technical investigations carried out on this product.

4.6 OTHER INVESTIGATIONS

- (i) Existing data on product properties in relation to fire, toxicity, environmental impact and the effect on mechanical strength/stability and durability were assessed.
- (ii) The manufacturing process was examined including the methods adopted for quality control, and details were obtained of the quality and composition of the materials used.
- (iii) Site visits were conducted to assess the practicability of installation and the history of performance in use of the product.
- (iv) Driving rain resistance was assessed.
- (v) A condensation risk analysis was performed.

Test	Method	Results
Tensile strength (N/50mm)	EN 12311-1	MD 227 CD 153
Elongation at break (%)	EN 12311-1	MD 43 CD 73
Tear resistance (N)	EN 12310-1	MD 198 CD 262
Mullen burst strength (kN/m ²)	BS 3137	565
Dimensional stability (%)	EN 1107-2	< 1

Table 4: Physical Properties

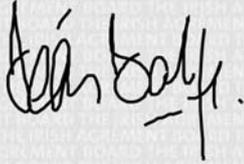
- 5.1** National Standards Authority of Ireland ("NSAI") following consultation with the Irish Agrément Board ("IAB") has assessed the performance and method of installation of the product/process and the quality of the materials used in its manufacture and certifies the product/process to be fit for the use for which it is certified provided that it is manufactured, installed, used and maintained in accordance with the descriptions and specifications set out in this Certificate and in accordance with the manufacturer's instructions and usual trade practice. This Certificate shall remain valid for five years from date of issue so long as:
- (a) the specification of the product is unchanged.
 - (b) the Building Regulations 1997 to 2006 and any other regulation or standard applicable to the product/process, its use or installation remains unchanged.
 - (c) the product continues to be assessed for the quality of its manufacture and marking by NSAI.
 - (d) no new information becomes available which in the opinion of the NSAI, would preclude the granting of the Certificate.
 - (e) the product or process continues to be manufactured, installed, used and maintained in accordance with the description, specifications and safety recommendations set out in this certificate.
 - (f) the registration and/or surveillance fees due to IAB are paid.
- 5.2** The IAB mark and certification number may only be used on or in relation to product/processes in respect of which a valid Certificate exists. If the Certificate becomes invalid the Certificate holder must not use the IAB mark and certification number and must remove them from the products already marked.
- 5.3** In granting Certification, the NSAI makes no representation as to;
- (a) the absence or presence of patent rights subsisting in the product/process; or
 - (b) the legal right of the Certificate holder to market, install or maintain the product/process; or
 - (c) whether individual products have been manufactured or installed by the Certificate holder in accordance with the descriptions and specifications set out in this Certificate.
- 5.4** This Certificate does not comprise installation instructions and does not replace the manufacturer's directions or any professional or trade advice relating to use and installation which may be appropriate.
- 5.5** Any recommendations contained in this Certificate relating to the safe use of the certified product/process are preconditions to the validity of the Certificate. However the NSAI does not certify that the manufacture or installation of the certified product or process in accordance with the descriptions and specifications set out in this Certificate will satisfy the requirements of the Safety, Health and Welfare at Work Act. 1989, or of any other current or future common law duty of care owed by the manufacturer or by the Certificate holder.
- 5.6** The NSAI is not responsible to any person or body for loss or damage including personal injury arising as a direct or indirect result of the use of this product or process.
- 5.7** Where reference is made in this Certificate to any Act of the Oireachtas, Regulation made thereunder, Statutory Instrument, Code of Practice, National Standards, manufacturer's instructions, or similar publication, it shall be construed as reference to such publication in the form in which it is in force at the date of this Certification.

The Irish Agrément Board

This Certificate No. **07/0268** is accordingly granted by the NSAI to **Don & Low Limited Nonwovens** on behalf of The Irish Agrément Board.

Date of Issue: **March 2007**

Signed



Seán Balfe
Director of the Irish Agrément Board

Readers may check that the status of this Certificate has not changed by contacting the Irish Agrément Board, NSAI, Glasnevin, Dublin 9, Ireland. Telephone: (01) 807 3800. Fax: (01) 807 3842. www.n Sai.ie