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Agrément Certificate
05/4209
Product Sheet 1

DALTEX ROOFTX MAXI AND ROOFTX EXTRA BREATHABLE ROOF TILE UNDERLAYS

FOR USE IN WARM NON-VENTILATED AND COLD VENTILATED ROOFS

PRODUCT SCOPE AND SUMMARY OF CERTIFICATE

This Certificate relates to Daltex RoofTX Maxi (also known as Daltex RoofTX Super) and RoofTX Extra Breathable Roof Tile Underlays for use in warm non-ventilated and cold ventilated pitched roof systems.

AGRÉMENT CERTIFICATION INCLUDES:

- factors relating to compliance with Building Regulations where applicable
- factors relating to additional non-regulatory information where applicable
- independently verified technical specification
- assessment criteria and technical investigations
- design considerations
- installation guidance
- regular surveillance of production
- formal three-yearly review.

KEY FACTORS ASSESSED

Weather-tightness — as part of a complete roof, the products will resist the passage of water and wind-blown snow and dust into the interior of the building (see section 5).

Risk of condensation — the products are regarded as a low water vapour resistance (Type LR) underlay and can be used as part of a non-ventilated warm and ventilated cold, roof system (see section 6).

Wind loading — when installed with appropriately spaced batten the products physical properties are deemed adequate to resist the wind loads imposed on the underlay. The products will reduce the wind uplift forces acting on the roof covering (see section 7).

Strength — the products have adequate strength to resist the loads associated with the installation of the roof (see section 8).

Durability — under the normal conditions found in a roof space the products will have a service life comparable to a traditional roof tile underlay (see section 11).



The BBA has awarded this Agrément Certificate to the company named above for the products described herein. These products have been assessed by the BBA as being fit for their intended use provided they are installed, used and maintained as set out in this Certificate.

On behalf of the British Board of Agrément

Simon Wroe
Head of Approvals — Materials

Greg Cooper
Chief Executive

Date of Fourth issue: 2 October 2008

Originally issued as Detail Sheet 2 on 16 May 2005

The BBA is a UKAS accredited certification body — Number 113. The schedule of the current scope of accreditation for product certification is available in pdf format via the UKAS link on the BBA website at www.bbacerts.co.uk

Readers are advised to check the validity and latest issue number of this Agrément Certificate by either referring to the BBA website or contacting the BBA direct.

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Regulations

In the opinion of the BBA, Daltex RoofTX Maxi and RoofTX Extra Breathable Roof Tile Underlays if used in accordance with the provisions of this Certificate, will meet or contribute to meeting the relevant requirements of the following Building Regulations:



The Building Regulations 2000 (as amended) (England and Wales)

Requirement:	C2(b)	Resistance to moisture
Comment:		The products will contribute to a roof meeting this Requirement. See section 5.1 of this Certificate.
Requirement:	Regulation 7	Materials and workmanship
Comment:		The products are acceptable materials. See section 11 and the <i>Installation</i> part of this Certificate.



The Building (Scotland) Regulations 2004 (as amended)

Regulation:	8(1)(2)	Fitness and durability of materials and workmanship
Comment:		The products satisfy the requirements of this Regulation. See sections 10 and 11 and the <i>Installation</i> part of this Certificate.
Regulation:	9	Building standards – construction
Standard:	3.10	Precipitation
Comment:		The products will contribute to a roof satisfying clauses 3.10.1 ⁽¹⁾⁽²⁾ and 3.10.7 ⁽¹⁾⁽²⁾ of this Standard. See section 5.1 of this Certificate.
Regulation:	12	Building standards – conversions
Comment:		All comments given for these products under Regulation 9, also apply to this Regulation, with reference to clause 0.12.1 ⁽¹⁾⁽²⁾ and Schedule 6 ⁽¹⁾⁽²⁾ . (1) Technical Handbook (Domestic). (2) Technical Handbook (Non-Domestic).



The Building Regulations (Northern Ireland) 2000 (as amended)

Regulation:	B2	Fitness of materials and workmanship
Comment:		The products are acceptable materials. See section 11 and the <i>Installation</i> part of this Certificate.
Regulation:	B3(2)	Suitability of certain materials
Comment:		The products do not normally require maintenance. See section 10 of this Certificate.
Regulation:	C4(b)	Resistance to ground moisture and weather
Comment:		The products will contribute to a roof satisfying this Regulation. See section 5.1 of this Certificate.

Construction (Design and Management) Regulations 2007

Construction (Design and Management) Regulations (Northern Ireland) 2007

Information in this Certificate may assist the client, CDM co-ordinator, designer and contractors to address their obligations under these Regulations.

See section: 1 *Description* (1.2).

Non-regulatory Information

NHBC Standards 2008

NHBC accepts the use of Daltex RoofTX Maxi and RoofTX Extra Breathable Roof Tile Underlays, when installed and used in accordance with this Certificate, in relation to NHBC Standards, Chapter 7.2 *Pitched roofs*. (ie ridge or high ventilation is not required).

Zurich Building Guarantee Technical Manual 2007

In the opinion of the BBA, Daltex RoofTX Maxi and RoofTX Extra Breathable Roof Tile Underlays, when installed and used in accordance with this Certificate, satisfies the requirements of the *Zurich Building Guarantee Technical Manual*, Section 4 *Superstructure*, Sub-section *Pitched roofs*.

General

This Certificate relates to Daltex RoofTX⁽¹⁾ Maxi and RoofTX Extra Breathable Roof Tile Underlays for use as a vapour permeable roof tile underlay in warm non-ventilated and cold ventilated pitched roof systems.

The products will also prevent the ingress of wind-blown rain or snow.

(1) Daltex RoofTX is a registered trademark of Don & Low Ltd Nonwovens.

Technical Specification

1 Description

1.1 Daltex RoofTX Maxi Breathable Roof Tile Underlay is a composite structure, manufactured via lamination of a water vapour permeable film between two layers of nonwoven polypropylene spunbond, to form a flexible breather membrane. A reinforced version, RoofTX Extra is also available.

1.2 The products have the nominal characteristics given in Table 1.

Table 1 Nominal characteristics

Characteristic (units)	Daltex RoofTX Maxi	Daltex RoofTX Extra
Thickness (mm)	0.6	0.75
Weight per unit area (gm ⁻²)	165	208
Roll length (m)	up to 50	up to 50
Roll width (m)	1.0/1.5	1.0/1.5
Roll weight (kg)	min 9, max 13	min 11, max 16
Colour		
upper	various	various
lower	various	various

1.3 Quality control checks are carried out on the incoming materials, during production and on the finished product. Quality control checks on the finished product include:

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

2 Delivery and site handling

2.1 Rolls are delivered to site individually wrapped in polyethylene. A technical leaflet bearing the product name is included with each roll and the BBA identification mark incorporating the number of this Certificate is shown on the leaflet. Labels with the lot identifiers are attached to each roll for traceability.

2.2 The rolls should be stored flat on their sides or on end, on a smooth, clean, dry surface, under cover and protected from sunlight.

Assessment and Technical Investigations

The following is a summary of the assessment and technical investigations carried out on Daltex RoofTX Maxi and RoofTX Extra Breathable Roof Tile Underlays.

Design Considerations

3 Use

Daltex RoofTX Maxi and RoofTX Extra Breathable Roof Tile Underlays are satisfactory for use as fully supported or unsupported underlays in tiled and slated pitched roofs constructed in accordance with the relevant clauses of BS 5534 : 2003.

4 Practicability of installation

Installation can be carried out readily by slaters/tilers experienced with these types of products.

5 Weathertightness



5.1 Tests indicate that the products 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 in accordance with the relevant clauses of BS 5534 : 2003.

5.2 The products resist penetration of liquid water and consequently may be used as temporary waterproofing prior to the installation of slates or tiles. The period of such use should, however, be kept to a minimum. Advice should be sought from the Certificate holder (see section 16, Table for *Physical properties — general*).

6 Risk of condensation

6.1 For design purposes, the products' water vapour resistance may be taken as not more than 0.25 MNsg⁻¹ and for roofs designed in accordance with BS 5534 : 2003 or BS 5250 : 2002, Section 8.4, it may be regarded as a Type LR membrane.

6.2 In common with all roofs, care must be taken in the overall design and installation to minimise the risk of water vapour coming into contact with cold parts of the construction. Factors to be considered and minimised include, moisture diffusion through the ceiling, infiltration through unsealed openings/penetrations in the ceiling and services evaporating or venting moisture into cold spaces.

6.3 The risk of condensation is highest in new-build construction during the first heating period, where there is high moisture loading due to wet trades, such as in-situ cast concrete slabs or plaster. The risk of condensation diminishes as the building naturally dries out. See *BBA Information Bulletin No 1 – Roof Tile Underlays in Cold Roofs during the Drying-out Period*.

Ceiling and insulation horizontal (cold roof)

6.4 Roofs designed and constructed in accordance with BS 5250 : 2002 will adequately limit the risk of interstitial condensation.

Ceiling and insulation inclined (warm roof)

6.5 For roofs with an insulated inclined ceiling, ventilation above or below the underlay will not be required provided that the passage of moisture by diffusion and by convection is controlled, eg, by a vapour control layer or a continuous envelope of insulation with a high vapour resistance.

Ceiling and insulation partially inclined (warm roof and cold roof)

6.6 Where an insulated ceiling only spans part of the roofline, resulting cold roof spaces should be ventilated in accordance with BS 5250 : 2002, Section 8.4.2.5 and 8.4.2.6.

7 Wind loading

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

7.2 The products, when fully supported, have adequate resistance to wind uplift forces.

7.3 For a cold ventilated system, wind loading on the underlay should be calculated in accordance with BS 5534 : 2003, Section 5.5.2.7. For acceptable wind loads with specific batten spacings for the draped product, using a 25 mm deep tiling batten see section 16, Table for *Physical properties – general*.

8 Strength

The products will resist the loads associated with installation of the roof (see section 16, Table for *Physical properties – directional*).

9 Properties in relation to fire

9.1 The products will melt and shrink away from heat, but will burn in the presence of a naked flame.

9.2 When the products are used unsupported, there is a risk that fire can spread if the materials are accidentally ignited during maintenance works, eg by a roofer's or plumber's torch. As with all types of underlay, care should be taken during building and maintenance to avoid the material becoming ignited.

9.3 When the products are used in a fully supported situation, the reaction to fire will be determined by the support.

9.4 When tested in accordance with BS EN 13501-1 : 2002, the products achieved a class D classification.

10 Maintenance



As the products are confined within a roof structure and have suitable durability (see section 11), maintenance is not required. However, it must be ensured that damage occurring before enclosure is repaired (see section 14).

11 Durability



The products will be virtually unaffected by the normal conditions found in a roof space and will have a life comparable with that of traditional roof tile underlays, provided they are not exposed to sunlight for long periods (see section 12.5). Advice regarding exposure can be obtained from the Certificate holder.

12 General

12.1 Daltex RoofTX Maxi and RoofTX Extra Breathable Roof Tile Underlays must be installed and fixed in accordance with the Certificate holder's instructions, provisions of this Certificate and the relevant recommendations of BS 5534 : 2003 and BS 8000-6 : 1990. Installation can be carried out under all conditions normal to roofing work.

12.2 The products have a high coefficient of friction, either wet or dry, giving a slip-resistant surface for increased safety during the installation of the tiles or slates.

12.3 The products are installed with the coloured or printed side uppermost and lapped to shed water out and down the slope.

12.4 Overlaps must be provided with the minimum dimensions given in Table 2.

Table 2 Minimum overlaps

Roof pitch (°)	Horizontal lap (mm)		Vertical laps (mm)
	Not fully supported	Fully supported	
12.5 to 14	225	150	100
15 to 34	150	100	100
35+	100	75	100

12.5 Where possible, eaves guards should be used to protect the products from sunlight and direct water into the gutter.

12.6 Hips should be covered with a 600 mm wide strip of the product.

13 Procedure

Fully supported

13.1 The products may be used over sarking boards of softwood, C4 grade chipboard or water-resistant grade plywood or water-resistant grade OSB and either with continuous insulation or insulation placed between the rafters.

13.2 The products are secured to the support with counter battens at least 12 mm thick to create an air space between the product and the tiles for drainage and vapour dispersal. The counter battens are fixed with corrosion-resistant staples or galvanized clout nails as appropriate. Tiling battens are secured to the counter battens and rafters with appropriate fixings.

13.3 Care must be taken to minimise the risk of interstitial condensation as described in section 6.5 particularly for timber sarking which may be below the dew-point for extended periods during winter months.

Unsupported

13.4 The products, when installed as an unsupported system, are fixed in the traditional method for roof tile underlays, ie draped between the rafters.

14 Repair

Damage to the products can be repaired easily prior to the installation of slates or tiles by replacement of the damaged areas, by patching and sealing correctly. Care should be taken to ensure that the watertightness of the roof is maintained.

15 Finishing

15.1 Detailing of abutments, verges and hips must be in accordance with the Certificate holder's instructions.

15.2 The tiling and slating must be carried out in accordance with the relevant clauses of BS 5534 : 2003, BS 8000-6 : 1990 and the Certificate holder's instructions, especially when using tightly-jointed slates or tiles.

16 Tests

16.1 Samples of Daltex RoofTX Maxi and RoofTX Extra Breathable Roof Tile Underlays were obtained from the Certificate holder for testing. The results of the tests carried out by, or on behalf of, the BBA are summarised in Tables 3 and 4.

Table 3 Physical properties — directional

Test (units)	Mean result		Method ⁽¹⁾
	RoofTX Maxi	RoofTX Extra	
Tensile strength (N per 50 mm)			BS EN 12311-1
unaged			
long ⁽²⁾	318	490	
trans ⁽³⁾	189	310	
Percentage change in tensile			
heat aged ⁽⁴⁾			
long ⁽²⁾	-10	-8	
trans ⁽³⁾	-12	+3	
Elongation at break (%)			BS EN 12311-1
unaged			
long ⁽²⁾	31	15	
trans ⁽³⁾	43	13	
heat aged ⁽⁴⁾			
long ⁽²⁾	22	14	
trans ⁽³⁾	28	12	
Tear resistance (nail) (N)			BS EN 12310-1
unaged			
long ⁽²⁾	324	405	
trans ⁽³⁾	211	315	

(1) The test documents are detailed in the *Bibliography*. Numbers in the table refer to sections/parts of the various documents.

(2) Longitudinal direction.

(3) Transverse direction.

(4) UVA aged for 336 hours at 50°C/heat aged for 90 days at (70±2)°C.

Table 4 Physical properties — general

Test (units)	Mean result		Method ⁽¹⁾
	RoofTX Maxi	RoofTX Extra	
Water vapour transmission at 25°C/75% RH (gm ⁻² day ⁻¹)	1387	1007	BS 3177
Vapour resistance (MNsg ⁻¹)	0.15	0.20	BS 3177
Low temperature flexibility (°C)	Pass (-60°C)	Pass (-40°C)	EN 1109
Hydrostatic head (cms)	589	-	BS EN 20811
Resistance to water penetration			EN 1928 ⁽²⁾
unaged	class W1	class W1	
aged ⁽³⁾	class W1	class W1	
Dimensional stability			EN 1107-2
long ⁽⁴⁾	0.0	-0.42	
trans ⁽⁵⁾	0.0	-0.18	
Resistance to wind loads (kPa) ⁽⁶⁾			Moat 69 : 4.2.1
batten spacing 350 mm	0.5	2.0	
batten spacing 330 mm	1.0	2.5	
batten spacing 300 mm	1.0	2.5	
batten spacing 250 mm	2.5	-	

(1) The test documents are detailed in the *Bibliography*. Numbers in the table refer to sections/parts of the various documents.

(2) As modified in accordance with EN 13859-1 : 2005.

(3) UV aged for 336 hours at 50°C/heat aged for 90 days at (70±2)°C.

(4) Longitudinal direction.

(5) Transverse direction.

(6) Test carried out using 25 mm thick battens and a 600 mm rafter spacing.

16.2 The following tests were carried out on a product of similar specification:

- dimensions
- mullen burst strength
- slip resistance
- resistance to streaming water
- wet strength
- head of water.

17 Investigations

17.1 The condensation risk in warm roof constructions, and specifically those containing sarking boards, incorporating the product was examined.

17.2 The manufacturing process was assessed, including the method adopted for quality control, and details were obtained of the quality and composition of the materials used.

Bibliography

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

BS 5250 : 2002 *Code of practice for control of condensation in buildings*

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 8000-6 : 1990 *Workmanship on building sites — Code of practice for slating and tiling of roofs and claddings*

BS EN 12310-1 : 2000 *Flexible sheets for waterproofing — Determination of resistance to tearing (nail shank)— Part 1 — Bitumen sheets for roof waterproofing*

BS EN 12311-1 : 2000 *Flexible sheets for waterproofing — Determination of tensile properties — Part 1 — Bitumen sheets for roof waterproofing*

BS EN 13501-1 : 2002 *Fire classification of construction products and building elements. Classification using test data from reaction to fire tests*

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

EN 1107-2 : 2001 *as modified to water penetration*

EN 1109 : 1999 *Flexible sheets for waterproofing — Bitumen sheets for roof waterproofing — Determination of flexibility at low temperature*

EN 1928 : 2000 *Flexible sheets for waterproofing — Bitumen, plastic and rubber sheets for roof waterproofing — Determination of watertightness*

EN 13859-1 : 2005 *Flexible sheets for waterproofing — Definitions and characteristics of underlays — Part 1 Underlays for discontinuous roofing*

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

18 Conditions

18.1 This Certificate:

- relates only to the product/system that is named and described on the front page
- is granted only to the company, firm or person named on the front page — no other company, firm or person may hold or claim any entitlement to this Certificate
- is valid only within the UK
- has to be read, considered and used as a whole document — it may be misleading and will be incomplete to be selective
- is copyright of the BBA
- is subject to English law.

18.2 References in this Certificate to any Act of Parliament, Statutory Instrument, Directive or Regulation of the European Union, British, European or International Standard, Code of Practice, manufacturers' instructions or similar publication, are references to such publication in the form in which it was current at the date of this Certificate.

18.3 This Certificate will remain valid for an unlimited period provided that the product/system and the manufacture and/or fabrication including all related and relevant processes thereof:

- are maintained at or above the levels which have been assessed and found to be satisfactory by the BBA
- continue to be checked as and when deemed appropriate by the BBA under arrangements that it will determine
- are reviewed by the BBA as and when it considers appropriate.

18.4 In granting this Certificate, the BBA is not responsible for:

- the presence or absence of any patent, intellectual property or similar rights subsisting in the product/system or any other product/system
- the right of the Certificate holder to manufacture, supply, install, maintain or market the product/system
- individual installations of the product/system, including the nature, design, methods and workmanship of or related to the installation
- the actual works in which the product/system is installed, used and maintained, including the nature, design, methods and workmanship of such works.

18.5 Any information relating to the manufacture, supply, installation, use and maintenance of this product/system which is contained or referred to in this Certificate is the minimum required to be met when the product/system is manufactured, supplied, installed, used and maintained. It does not purport in any way to restate the requirements of the Health & Safety at Work etc Act 1974, or of any other statutory, common law or other duty which may exist at the date of this Certificate; nor is conformity with such information to be taken as satisfying the requirements of the 1974 Act or of any statutory, common law or other duty of care. In granting this Certificate, the BBA does not accept responsibility to any person or body for any loss or damage, including personal injury, arising as a direct or indirect result of the manufacture, supply, installation, use and maintenance of this product/system.